

Colchester Borough Council

**West Colchester  
Growth Area Option  
Environmental Audit**

November 2015

Colchester Borough Council

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Growth Area Option**

**Environmental Audit**

Approved

A handwritten signature in black ink, appearing to read 'D. Watkins', enclosed within a circular flourish.

Dominic Watkins

Position

Director

Date

17 November 2015

Revision

Final

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## **1.0 INTRODUCTION**

### **1.1 Background**

- 1.1.1 The Borough of Colchester covers an area of 324 square kilometres in North East Essex. It is located approximately 60 miles North East of London and also lies in close proximity to the seaport of Harwich (20 miles) and Stansted Airport (30 miles). It borders Babergh District in Suffolk to the north and the districts of Tendring, Braintree and Maldon to the east, west and south west respectively. Colchester's population is currently estimated at 180,420 (ONS Mid-Year Population estimates, 2014) however it is increasing more quickly than any other Borough in Essex, with the exception of Uttlesford.
- 1.1.2 Colchester's population is projected to grow significantly over the next 20 years. To plan for this population growth, Colchester Borough Council is producing a new Local Plan to guide development in the Borough to 2032 and beyond. The new Local Plan will plan for the delivery of approximately 1,000 new houses per year over the plan period, running from 2017-2032. The new Local Plan will set out a strategy for the growth of the Borough including the amount of development needed, the types of development needed, the most sustainable locations for new development and the timescale for delivering planned growth. Choices about the location of new development will need to be made in the context of an overall vision of how the Borough can accommodate growth and change in the most sustainable way. The new Local Plan will set out the Council's long term aims and aspirations for the Borough and will include policies and land allocations to help deliver these.
- 1.1.3 In January 2015 Colchester Borough Council published an Issues and Options Paper for consultation which set out a number of potential options for growth. The Issues and Options Paper identified potential options for major growth in the form of Garden Settlements, identifying a number of potential locations including land to the East and land to the West of Colchester. In addition to these, an additional growth option has come forward which lies to the North East of Colchester near Langham. To support the production of the new Local Plan, the Council is developing a new evidence base; Environmental Audits of the potential locations for growth in West Colchester, East Colchester and North East of Colchester form part of this evidence base. The Environmental Audits will help guide future masterplanning and development in and around any future garden settlements taken forward in Borough.
- 1.1.4 Chris Blandford Associates (CBA) was commissioned by Colchester Borough Council to undertake an Environmental Audit of the land to the west of Colchester (the 'Site'), which comprises two discrete areas around Marks Tey and Eight Ash Green, and includes land within

Braintree District. The location of the Site is shown on **Figure 1.1**, and the Site boundary is illustrated in more detail on **Figure 1.2**.

1.1.5 In accordance with the Council's requirements, the purpose of the Environmental Audit is to provide a preliminary appraisal of the constraints and opportunities for development of the Site in respect of the following environmental considerations:

- Ecology and Nature Conservation.
- Landscape/Townscape Character and Visual Amenity.
- Water Quality and Flood Risk.

1.1.6 Other environmental considerations that may present constraints to development on the Site, such as cultural heritage or agricultural land use for instance, are beyond the scope of this Environmental Audit.

1.1.7 In line with the purpose of the Environmental Audit, the appraisals are largely based on review of currently available desk-top information, supplemented by targeted field surveys as appropriate. While full access to private land within the Site was not possible within the timescales of this Environmental Audit, it is considered that this was not a significant limitation on the robustness of the preliminary appraisals due to the extensive network of public rights of way through the Site.

1.1.8 Where further more detailed investigations are required to inform Site masterplanning, environmental assessment and mitigation, these are recommended in the respective sections.

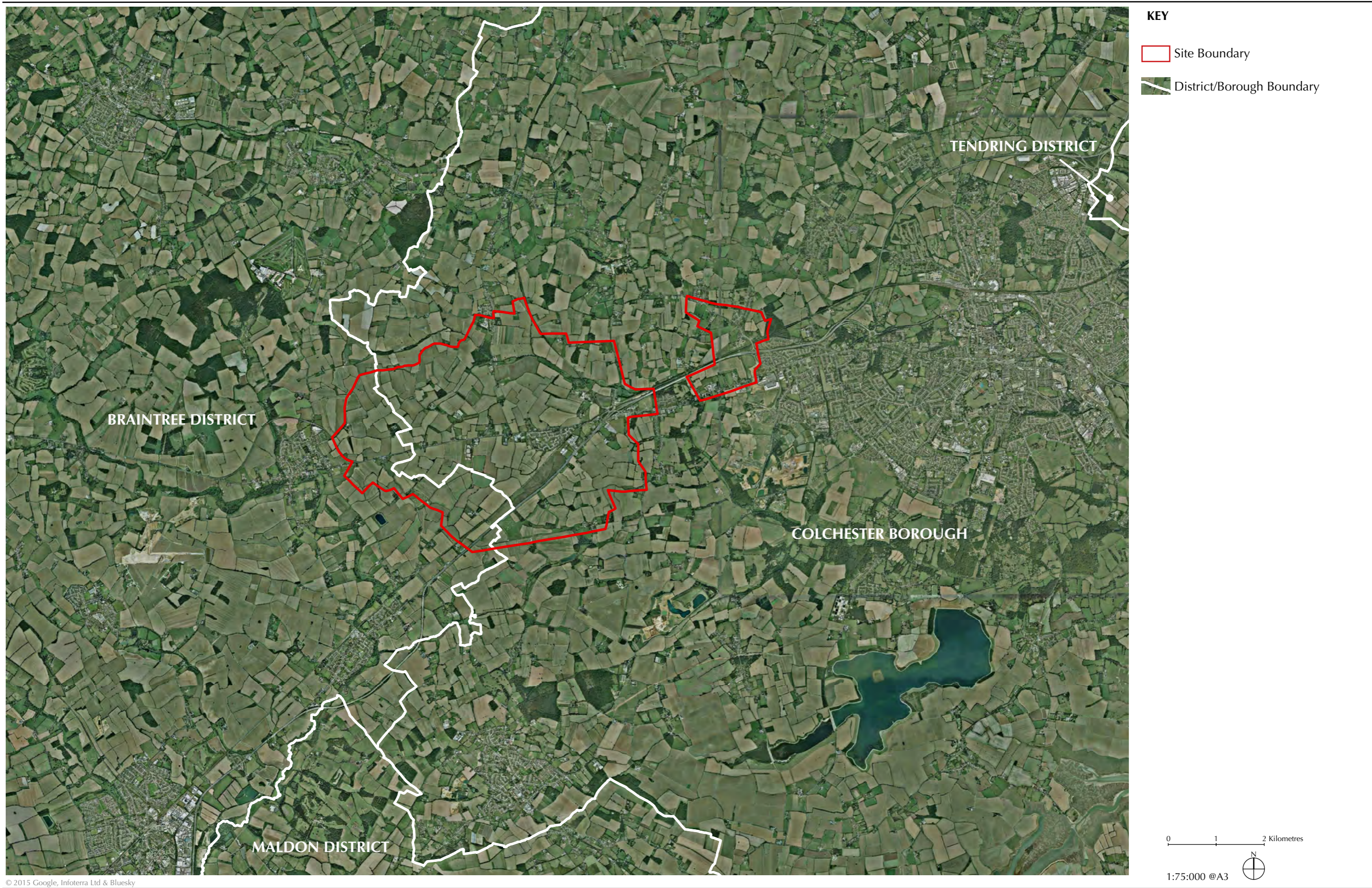
## **1.2 Structure of the Environmental Audit**

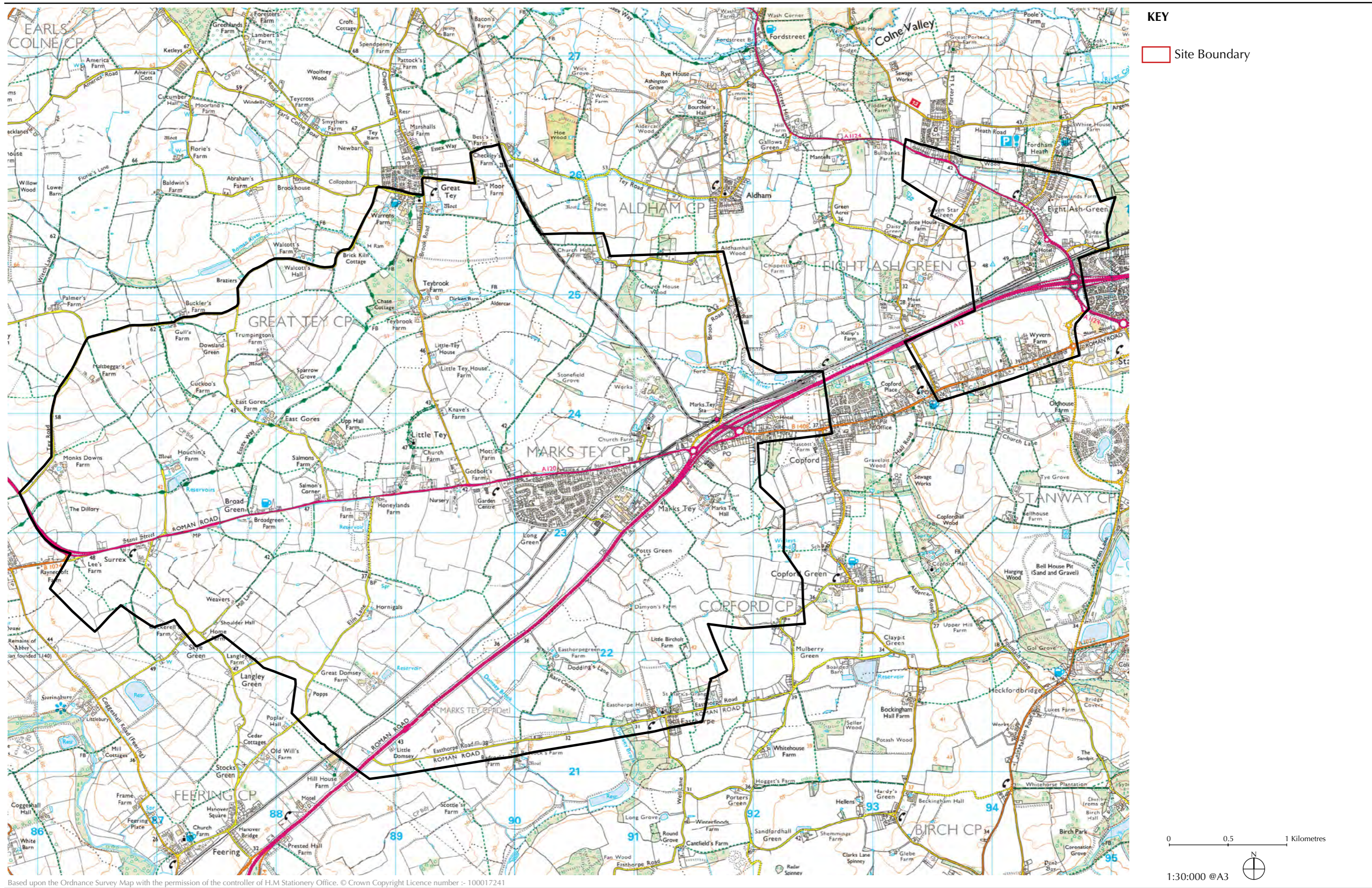
1.2.1 The Environmental Audit is structured as follows:

- Ecology and Nature Conservation
- Landscape/Townscape Character and Visual Amenity
- Water Quality and Flood Risk

1.2.2 Each of the above sections provides:

- a general introduction to the section
- a brief summary of the audit methodology (including any limitations)
- a description of the existing conditions





- an appraisal of the constraints and opportunities for development (including recommendations for further work as appropriate)
- a summary of the key findings

1.2.3 Drawing on the findings of the individual appraisals, mitigation measures for avoiding or reducing potential adverse environmental effects through the Site masterplanning and assessment process are recommended. These also include identification of opportunities for incorporating Green Infrastructure features into the development of the Site. It should be noted that the mitigation measures are not exhaustive; they are intended to provide broad guidance on the type of measures that are likely to be necessary in order to achieve a sustainable development on the Site.

1.2.4 A summary of the Environmental Audit's key findings and conclusions is also provided.

### **1.3 Study Areas**

1.3.1 For each of the environmental disciplines, an appropriate Study Area has been defined to allow the relevant issues that may influence the suitability of the Site for development to be adequately considered. Where appropriate, reference is also made to the wider context of the Study Area.

## 2.0 ECOLOGY AND NATURE CONSERVATION

### 2.1 General

- 2.1.1 This section identifies potential ecological and nature conservation constraints and opportunities for development on the Site. In line with the purpose of the Environmental Audit, the appraisal involves a desk-top review of currently available ecological information, supplemented by a habitat survey of the Site to identify features of potential ecological and nature conservation interest.
- 2.1.2 The principal nature conservation legislation in the UK includes: the EC Habitats Directive 1992 (transposed into UK legislation by the Conservation of Habitats and Species Regulations 2010)<sup>1</sup> (referred to as 'the Habitats Regulations'); the Wildlife and Countryside Act 1981 (as amended)<sup>2</sup>; and the Countryside and Rights of Way Act 2000<sup>3</sup>.
- 2.1.3 The National Planning Policy Framework (NPPF)<sup>4</sup> sets out the Government's current planning policy in relation to the natural environment. Paragraph 118 of the NPPF states: *'If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused'*. Paragraph 118 of the NPPF also states: *'opportunities to incorporate biodiversity in and around developments should be encouraged'*. Paragraph 017 of the Planning Policy Guidance on the Natural Environment provides guidance on opportunities for biodiversity enhancements in and around developments, such as *'habitat restoration, re-creation and expansion; improved links between existing sites; buffering of existing important sites; new biodiversity features within developments; and securing management for long-term enhancement.'*

### 2.2 Audit Methodology

- 2.2.1 A desk-based appraisal has been undertaken for a 2km Study Area. Information regarding land designated for its nature conservation value and of Habitats of Principal Importance/Biodiversity Action Plan (BAP) Priority Habitats has been derived from the Magic website ([www.magic.gov.uk](http://www.magic.gov.uk)). Desk study data comprising records of notable species (species protected by law and species of conservation concern, but excluding birds (as this data is not currently available) were obtained from the Essex Field Club.

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<sup>1</sup> [http://www.legislation.gov.uk/uksi/2010/490/pdfs/ukxi\\_20100490\\_en.pdf](http://www.legislation.gov.uk/uksi/2010/490/pdfs/ukxi_20100490_en.pdf)

<sup>2</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

<sup>3</sup> [http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga\\_20000037\\_en.pdf](http://www.legislation.gov.uk/ukpga/2000/37/pdfs/ukpga_20000037_en.pdf)

<sup>4</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6077/2116950.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf)

- 2.2.2 An extended Phase 1 Habitat Survey of the Site was undertaken using guidelines set out in the 'Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit'. The survey was undertaken on 2<sup>nd</sup>, 4<sup>th</sup> and 9<sup>th</sup> September and 3<sup>rd</sup> and 4<sup>th</sup> November 2015, and provides a broad overview of the habitats within the Site and their potential to support species protected by law or of conservation concern.
- 2.2.3 The field survey was mainly undertaken from Public Rights of Way due to limited access to private land. Habitats and features at a distance from these were viewed through binoculars, and this was used to judge the most appropriate Phase 1 Habitat category to assign them. However, this does introduce a degree of uncertainty in discerning different habitats and features, for example the differences between species-rich and species-poor hedgerows, broadleaved semi-natural woodland and broadleaved plantation, scrub and developing broadleaved plantation and between different grassland types. Where some areas could not be viewed from Rights of Way, these gaps are highlighted in the Phase 1 Habitat Plan (**Figure 2.1**). Overall, these Site survey constraints are not considered to be a significant limitation on the robustness of this preliminary appraisal of ecological constraints and opportunities for development.

## 2.3 Existing Conditions

### Desk Study

#### Designated Sites

- 2.3.1 The locations of designated sites within the 2km Study Area are illustrated on **Figure 2.2**.

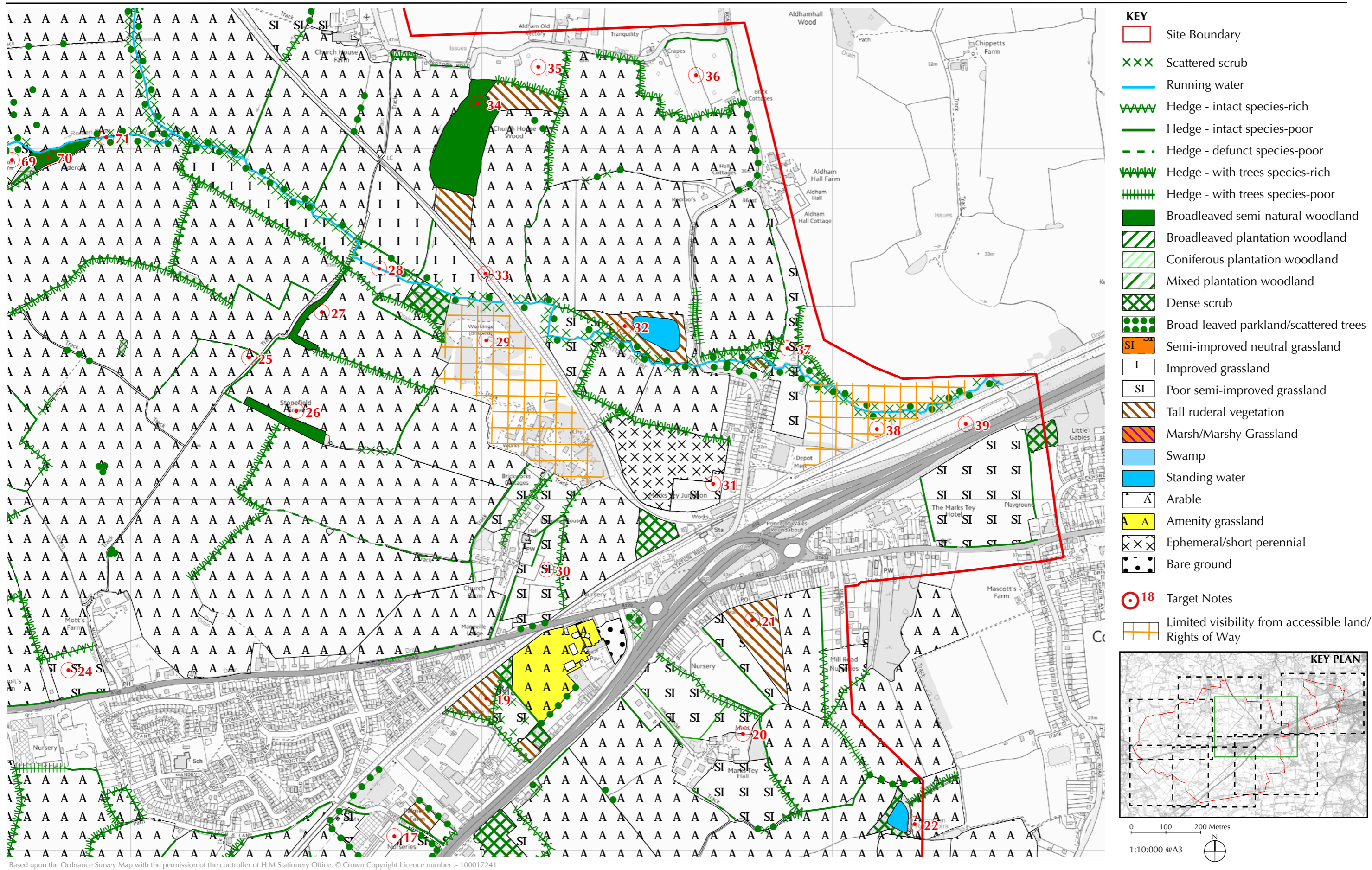
#### Statutory Sites

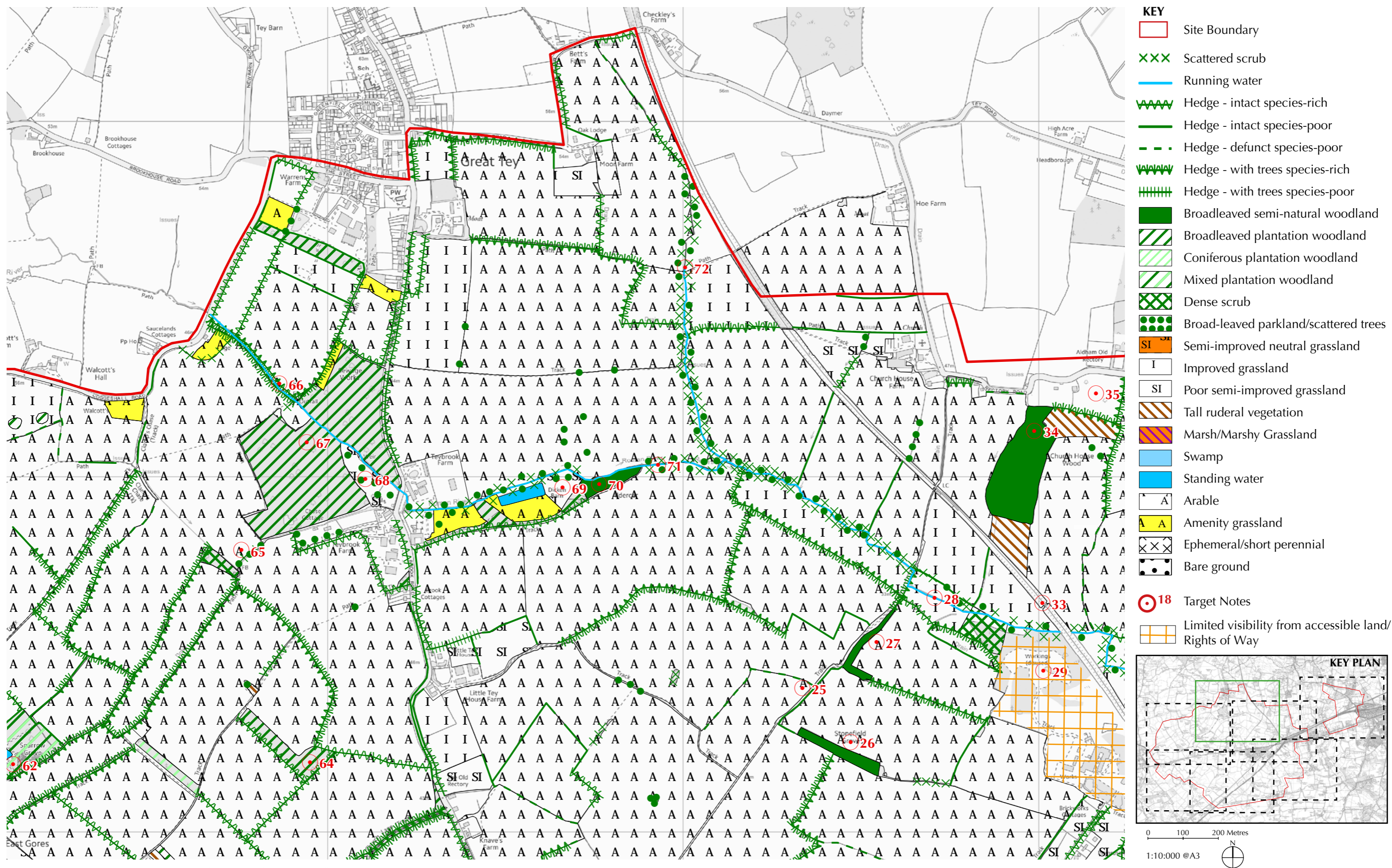
#### International Sites

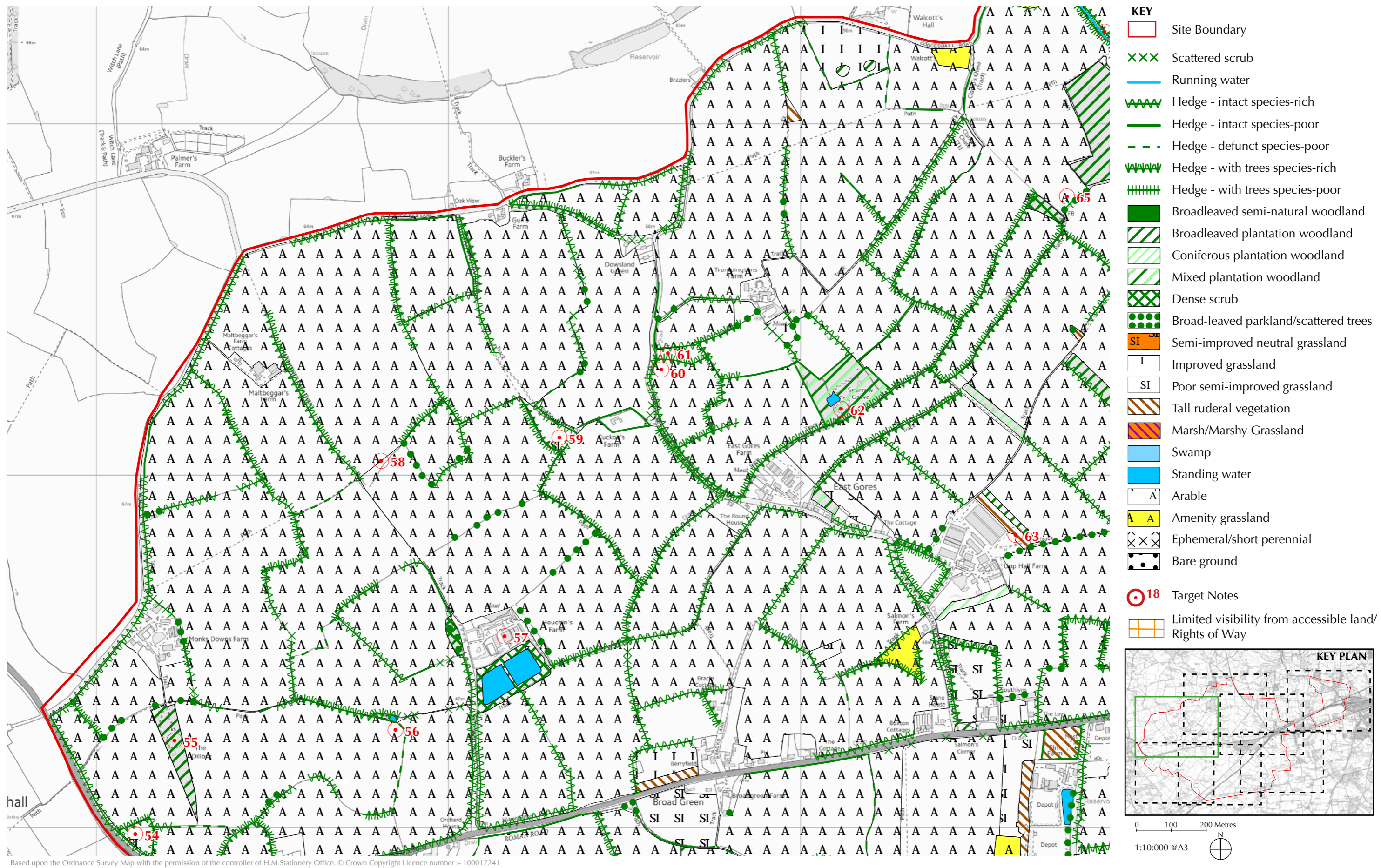
- 2.3.2 There are no internationally designated sites within the Site. The nearest site is Abberton Reservoir Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), designated under the Wild Birds Directive (79/409/EEC), which lies approximately 5km to the south east of the Site. This is designated for the migratory waterbirds it supports in autumn and for wintering waterbirds.

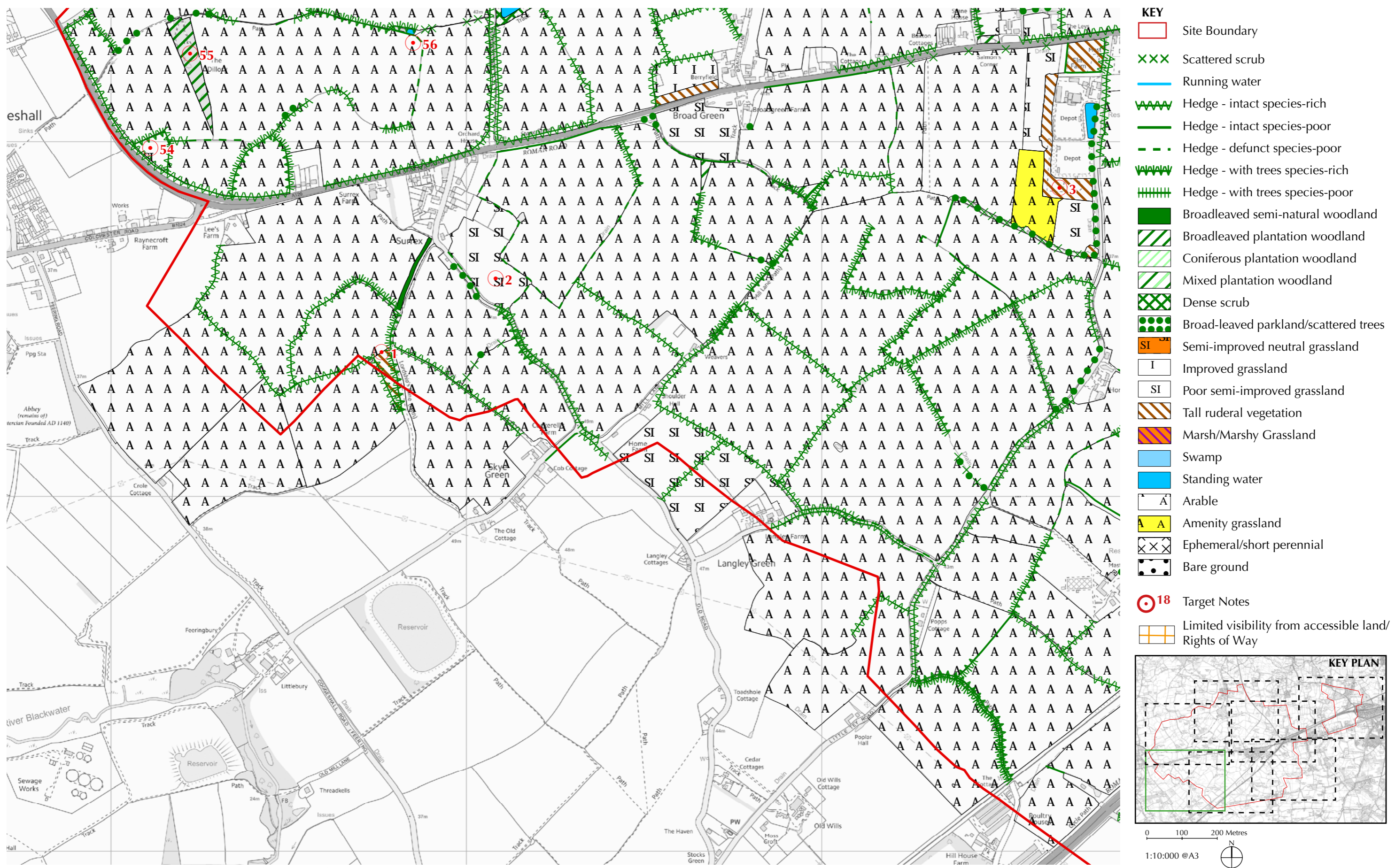


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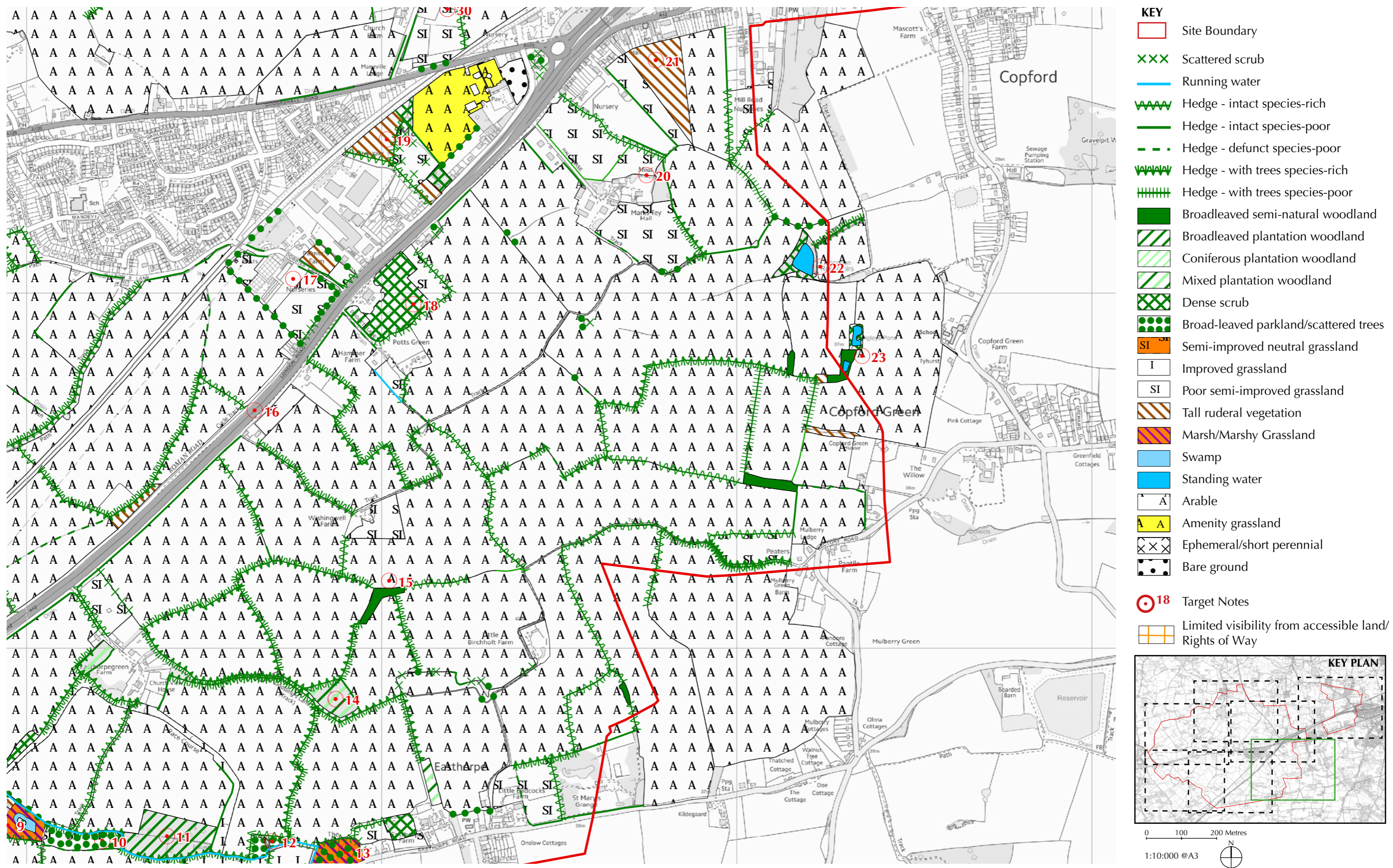




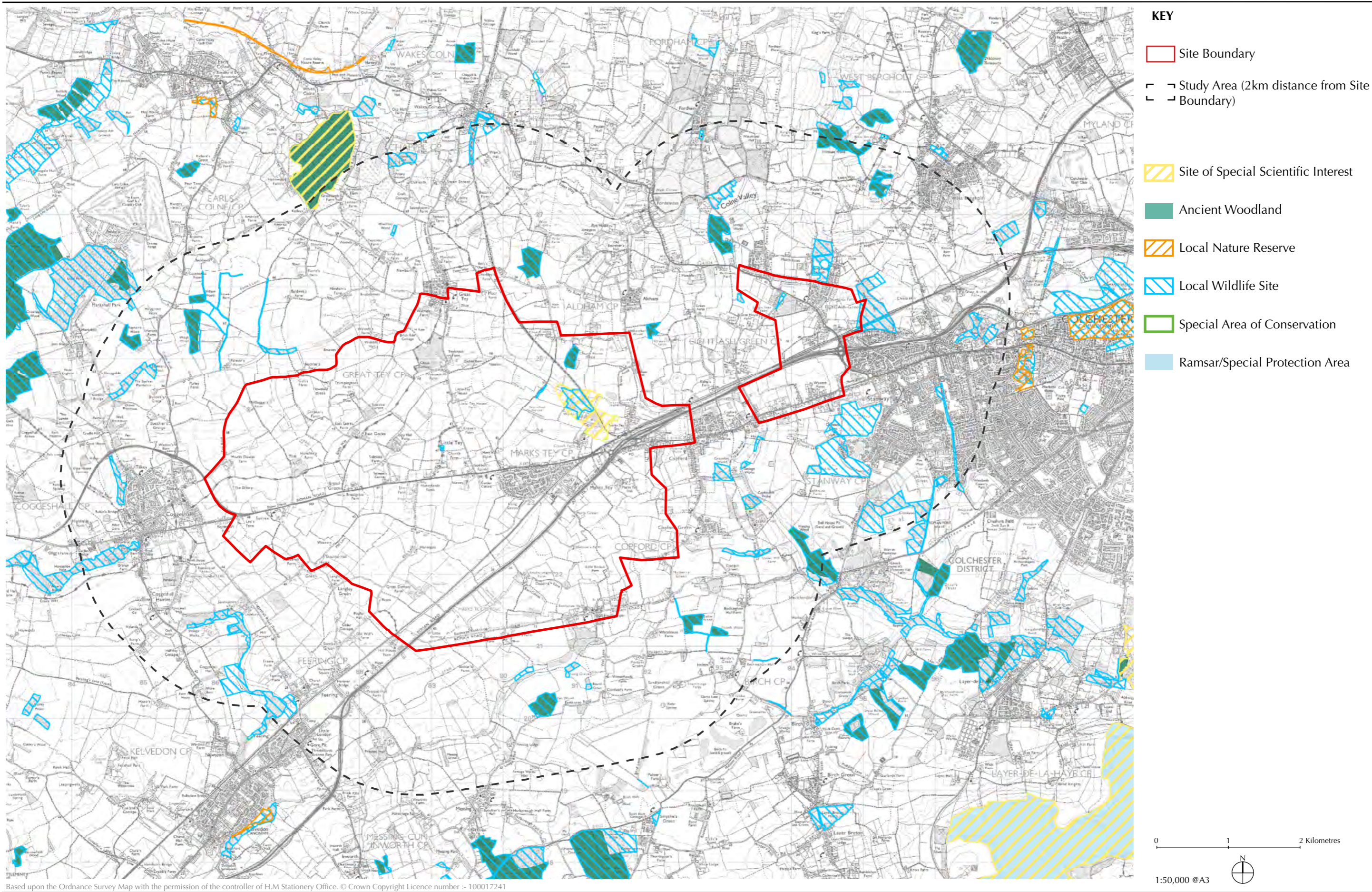








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### Sites of Special Scientific Interest (SSSIs)

- 2.3.3 Marks Tey Pit SSSI is located in the centre of the Site and is a geological site designated for its exposures of Pleistocene sediments, which yield a continuous pollen record for the Hoxnian Interglacial.
- 2.3.4 Chalkney Wood SSSI lies approximately 1.8km north west of the Site. It is a relatively large Ancient Woodland with a number of stand types, including what are considered to be the best stands with small-leaved lime in Essex.

### Local Nature Reserves (LNRs)

- 2.3.5 There are no Local Nature Reserves within the Site. The nearest LNRs are Lexden Park (woodland, grassland and lake) and Spring Lane Nursery Meadow (grassland and trees) approximately 2.2 and 2.9km to the east respectively.

### **Non-statutory Sites**

### Local Wildlife Sites (LWSs)

- 2.3.6 The following six Local Wildlife Sites lie partly or wholly within the Site.
- Co14 Little Tey Churchyard – grassland and grassland plant species incl. Essex Red Data List species
  - Co27 Stonefield Strip – woodland, possibly Ancient Woodland fragment
  - Co30 Church House Wood – Ancient Woodland
  - Co31 MarksTey Brick Pit – open mosaic habitat, scrub and woodland with important invertebrates
  - Co55 Seven Star Green – species-rich grassland and grassland plant species incl. Essex Red Data List species
  - Co68 Iron Latch Lane Woods and Meadow – woodland and grassland
- 2.3.7 A further 41 Local Wildlife Sites lie within the 2km Study Area.
- Co1 – Florie's Hedgerows - hedgerow
  - Co2 Buckler's Farm Wood – woodland including wet woodland
  - Co8 Woolfney Wood – fragment of once much larger Ancient Woodland
  - Co11 – Hickmore Fen - woodland
  - Co17 – Chappel Ponds and Millennium Green – ponds, grassland. Great Crested Newt, reptiles, invertebrates, small mammals and birds.
  - Co20 Domsey Brook Pasture – grassland, including wet grassland and grassland plant species incl. Essex Red Data List species
  - Co22 Hoe Wood – Ancient Woodland
  - Co26 Fan Wood – Ancient Woodland

- Co29 Long/Round Grove – woodland
  - Co35 Aldhamhall Wood – Ancient Woodland
  - Co38 Seller and Potash Woods and Lane – Ancient woodland
  - Co40 Fordham Churchyard – grassland and grassland plant species incl. Essex Red Data List species
  - Co43 Fiddlers Wood – Ancient woodland
  - Co44 Pits Wood – woodland and ponds in old gravel pit workings
  - Co45 Fordham Bridge Meadow – grassland and swamp incl. Essex Red Data List plant species
  - Co46 Aldercar, Copford – wet woodland
  - Co47 Daisy Green Grove – woodland, possibly Ancient Woodland fragment
  - Co49 Copfordhall Wood North – woodland, partly replanted and possibly Ancient Woodland fragment
  - Co50 Copford Hall Wood – woodland, possibly derived from Ancient Woodland
  - Co51 Keeper's Cottage Wood – wet woodland
  - Co53 Beckingham Hall Road Verge – grassland on verge incl. Essex Red Data List plant species
  - Co58 Gol Grove/Hanging Wood – Ancient woodland and swamp
  - Co59 Tye Grove – probable Ancient Woodland fragment
  - Co60 Fordham Heath – woodland, scrub and grassland incl. Essex Red Data List plant species
  - Co62 Stanway Pits – open mosaic habitat with important invertebrates and Essex Red Data List plant species
  - Co63 Hillhouse Wood – large Ancient Woodland
  - Co67 Warren Lane Pit – open mosaic habitat, scrub and ponds in inactive part of sand pit with important invertebrates, reptiles and amphibians and birds
  - Co69 Spring Wood – woodland
  - Co71 Grove Wood – woodland
  - Co78 Gryme's Dyke – woodland including Ancient Woodland, scrub and acid grassland with important invertebrates and Essex Red Data List plant species
  - Co82 Cook's Lane, Lexden – woodland and acid grassland
  - Co87 Spring Grove - woodland
- 
- Bra181 – Markshall Woodlands
  - Bra186 Blackwater Plantation
  - Bra225 Coggeshall Hall Farm
  - Bra234 Feering Marsh
  - Bra206 Tilkey Road, Coggeshall
  - Bra207 – The Squire's Plantation
  - Bra208 – Raynor's Wood
  - Bra216 Witch Wood, lane and hedges
  - Bra218 – Willow Wood

#### Essex Wildlife Trust Reserves

- 2.3.8 The Essex Wildlife Trust Iron Latch Nature Reserve (woodland and grassland) is located on the eastern edge of the Site, near Eight Ash Green.

## **Habitats**

### **Ancient Woodland**

- 2.3.9 There is only one area of Ancient Woodland, Church House Wood (TN34) in the north of the Site. However, Stonefield Strip LWS (TN27) has features indicating it may be an Ancient Woodland fragment.

### **Habitats of Principal Importance**

- 2.3.10 Small areas of Lowland Mixed Deciduous Woodland are scattered throughout and adjacent to the Site, including narrow strips along the main transport corridors of the A12 and railway lines.
- 2.3.11 There are two Traditional Orchards in the north of the Site (TN35 and TN36), as well as smaller areas near Eight Ash Green (e.g. TN47).

## **Protected Species**

### **Great crested newts**

- 2.3.12 There are no records of great crested newts from within the Site but there are records from within the 2km Study Area, the nearest of which is for a location east of Copford Green, approximately 1km east of the Site boundary.

### **Reptiles**

- 2.3.13 Within the Site common lizard has been recorded near Wyvern Farm (nr. TN41), slow worm at Marks Tey (nr. TN18 and TN19) and slow worm and grass snake very close to the Site boundary at Eight Ash Green. There are records for these three species from a number of other locations within the 2km Study Area.

### **Dormice**

- 2.3.14 Dormice have not been recorded from within the Site, but there are a small number of records from within the 2km Study Area.

### Water voles

- 2.3.15 Water voles have been recorded (1998) in the north of the Site, on the Roman River close to Teybrook Farm, between Little and Great Tey. They have also been recorded from the Roman River approximately 300m south of the Site boundary near Copford Place and 400m north of it near Little Tey House. They have also been recorded on the Domsey Brook approximately 1km south of the Site west of Easthorpe. More widely there are records largely from the Rivers Colne and Blackwater, and from Abberton reservoir. However, most of these records date from the 1990s, since which water voles have declined significantly.

### Bats

- 2.3.16 The following bat species have been recorded in or very close to the Site.
- Serotine – near boundary at Eight Ash Green
  - Noctule - Easthorpe
  - Common pipistrelle – A12 nr. Copford, Copford, Copford Green and Great Tey.
  - Soprano pipistrelle – nr. Boundary north of Seven Star Green and at Copford Green
  - Pipistrelle – between East Gores and Upp Hall Farm nr. Little Tey, on the northern edge of Marks Tey and junction of Great Tey Rd and A120.
  - Brown long-eared bats – On northern boundary at Rectory Lane and Coggeshall Rd (between Braziers and Walcotts Farm), Little Tey church, junction of Gt Tey Rd and A120, and nr. boundary at Copford Green.
- 2.3.17 Barbatelle, Daubenton's Natterer's and Leisler's bats have also been recorded from within the 2km Study Area.

### Otters

- 2.3.18 There are a number of records of otters, largely from the Rivers Colne and Blackwater, of which the nearest is on the Blackwater approximately 0.5km west of the Site south of Coggeshall.

### Badgers

- 2.3.19 There are numerous records of badgers from within the Site and the 2km Study Area.

### **Other Species**

### Plants

- 2.3.20 A number of Essex Red Data List plant species, mainly of grassland and arable, have been recorded from within the Site including;

• Dittander	<i>Lepidium latifolium</i>
• Corn chamomile	<i>Anthemis arvensis</i>
• Stinking chamomile	<i>Anthemis cotula</i>
• Large bitter-cress	<i>Cardamine amara</i>
• Small toadflax	<i>Chaenorhinum minus</i>
• Lesser calamint	<i>Clinopodium calamintha</i>
• Dwarf spurge	<i>Euphorbia exigua</i>
• Ploughmans spikenard	<i>Inula conyzae</i>
• Field gromwell	<i>Lithospermum arvense</i>
• Catmint	<i>Nepeta cataria</i>
• Prickly poppy	<i>Papaver rhoeas</i>
• Wild clary	<i>Salvia verbenacea</i>
• Pepper saxifrage	<i>Silaum silaus</i>
• Sulphur clover	<i>Trifolium ochroleucon</i>
• Orange foxtail	<i>Alopecurus aequalis</i>

2.3.21 More species have been recorded from within the 2km Study Area.

#### Invertebrates

2.3.22 A large number of Essex Red Data List, Rare and Scarce and BAP invertebrate species have been recorded within the Site and the 2km Study Area.

#### Amphibians (excl. great crested newt)

2.3.23 Common frog and smooth newt have been recorded from the Eight Ash Green area, both within and very close to the Site boundary. There are also records of these species and common toad and palmate newt from within the 2km Study Area.

#### Mammals

2.3.24 Brown hare (UK and Essex BAP) was recorded during the survey, close to Great Tey. It has also been recorded at Coggeshall Rd between Braziers and Walcotts Farm on the northern boundary of the Site, between Monks Downs Farm and Houchins Farm in the west, from beside the A120 at the eastern end of the Coggeshall bypass, close to the junction of the Easthorpe Road and the A12 and at several other locations close to the Site boundary. West European hedgehog (UK BAP) has also been recorded from within the Site from two locations immediately north of the A120 west of Little Tey, near Marks Tey and near Easthorpe Green Farm. There are several records of harvest mouse (UK BAP) from the area between Marks Tey and Feering, both within and close to the Site, from two locations beside East Gores Lane, as well as close to the boundary at Walcotts Farm, west of Great Tey and in the Copford area. Yellow-necked mouse (Essex Red Data List) has been recorded from within the 2km Study Area.

## Field Survey

2.3.25 The findings of the extended Phase 1 Habitat Survey of the Site are mapped in **Figure 2.1**, which also includes the location of the Target Notes described in **Table 2.1**.

**Table 2.1 – Phase 1 Habitat Survey Target Notes**

Target Note	Habitats and Features	Potential for Protected Species	Comments
1	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Areas of grassland of variable structure and tall ruderal with adjoining hedges.
2	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Grassland field with variable structure and adjoining hedgerows, scrub and gardens.
3	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Structurally variable grassland and tall ruderal with spoil heaps, hedgerows, scrub and gardens. Pond beside lane.
4	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Uncultivated area between arable fields. Appropriate vegetation structure for reptiles and some connectivity to other habitat along hedges but may be of recent origin and relatively small and isolated.
5	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Uncultivated area between arable fields. Appropriate vegetation structure for reptiles and some connectivity to other habitat along hedges but may be of recent origin and relatively isolated.
6	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Birds</li> </ul>	Mosaic habitat on railway embankments. More open areas may be suitable for reptiles.
7	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Grassland of variable structure and tall ruderal on spoil heaps with adjoining hedges. Connectivity with habitat to the east alongside the Domsey Brook.
8	<ul style="list-style-type: none"> <li>Marsh/marshy grassland</li> <li>Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Marshy grassland with meadowsweet, great willowherb and pond sedges with cricket bat willow plantation. Bordered by hedges and dense scrub. Domsey Brook runs beside and through area. Probably seasonally inundated.
9	<ul style="list-style-type: none"> <li>Open water</li> <li>Swamp</li> <li>Marsh/marshy grassland</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Pond fed by Domsey Brook with area of shallow open water at eastern end but largely filled with swamp, including reedmace, cypress sedge, water mint, and sea club-rush. Scrubby/wooded island. Marginal vegetation includes rushes and gypsywort. Adjoining marshy grassland with meadowsweet, fleabane, meadow vetchling and glaucous sedge. Probably seasonally inundated.
10	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Seasonally mown species-poor grassland with cricket bat willow plantation. Alongside Domsey Brook. Some potential for reptiles, especially on edges but regular seasonal mowing limits this. Probably seasonally inundated.

Target Note	Habitats and Features	Potential for Protected Species	Comments
11	<ul style="list-style-type: none"> <li>Broadleaved Plantation</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Northern part mostly dense hybrid poplar, southern part more open cricket bat willow over grassy (possibly marshy) grassland. Alongside Domsey Brook. Probably seasonally inundated.
12	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedgerows</li> <li>Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Trees, including cricket bat willows, and scrub over grassland of variable structure beside Domsey Brook. Probably seasonally inundated.
13	<ul style="list-style-type: none"> <li>Marsh/marshy grassland</li> <li>Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Marshy grassland with meadowsweet, great willowherb, fleabane rushes and pond sedges and cricket bat willow plantation. Bordered by hedges and dense scrub. Domsey Brook runs beside area. Probably seasonally inundated.
14	<ul style="list-style-type: none"> <li>Mixed plantation</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Small plantation incorporating hedges with trees, including oaks. Hedge field layer includes dog's mercury and false brome. Interior includes sycamore, oak, beech and cypress with much elder and nettle. Contains game pen.
15	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Oak, ash, field maple, elm, hazel, hawthorn and blackthorn. Incorporates hedges.
16	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Includes structurally varied grassland and other habitats present beside A12.
17	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland, tall ruderal and other habitats either side of Dobbies Lane, for example around plant nursery and in unmanaged field.
18	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Much scrub but also open areas with structurally varied grassland.
19	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Two unmanaged hedged fields with tall ruderal, structurally varied grassland and scattered scrub.
20	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Habitats around Marks Tey Hall. May include ponds.
21	<ul style="list-style-type: none"> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally suitable for reptiles but likely to be of recent origin.
22	<ul style="list-style-type: none"> <li>Open water</li> <li>Scrub</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Pond with adjoining habitats including structurally varied grassland.
23	<ul style="list-style-type: none"> <li>Open water</li> <li>Scrub</li> <li>Broad-leaved semi-natural woodland</li> <li>Hedgerows</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Two ponds with adjoining scrub and woodland. Includes willows, field maple, ash, hawthorn, blackthorn and hazel.
24	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland in unmanaged field.

Target Note	Habitats and Features	Potential for Protected Species	Comments
25	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li></li> </ul>	Structurally varied grassland with hedges and scrub along PRow.
26	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Oak, ash, field maple, elm, hazel, hawthorn and blackthorn. Incorporates hedges. Field layer includes dog's mercury, false brome, red campion.
27	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Stonefield Strip LWS - Oak, ash, field maple, hazel, hawthorn and blackthorn. Field layer includes bluebell, dog's mercury, false brome, red campion.
28	<ul style="list-style-type: none"> <li>Running water</li> <li>Scrub</li> <li>Trees</li> </ul>	<ul style="list-style-type: none"> <li>Bats</li> <li>Otters</li> </ul>	Roman River – stream with silt/gravel bed and some natural features such as (in parts) riffle and pool structure. Scrub and trees on banks includes willow and alder.
29	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Scrub</li> <li>Trees</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Includes Marks Tey Pit SSSI and Marks Tey Brick Pit LWS – not surveyed but ex-brick pit with notable invertebrates. Habitats also suitable for reptiles.
30	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li></li> </ul>	Structurally varied grassland in fields east of Marks Tey church.
31	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland in unmanaged field beside railway line.
32	<ul style="list-style-type: none"> <li>Open water</li> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Pond with adjoining tall ruderal and structurally varied grassland.
33	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Breeding birds</li> </ul>	On railway embankments. Possibly insufficient open habitat for reptiles.
34	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> <li>Reptiles</li> </ul>	Church House Wood Ancient Woodland and LWS - viewed from northern edge – oak, ash, field maple and sweet chestnut canopy, holly, hazel, hawthorn and blackthorn shrub and field layer dominated by bracken and bramble. Large stands of tall ruderal adjoin the wood to north east and south, which is structurally suitable for reptiles but may be of recent origin.
35	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Scrub</li> <li>Trees</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Birds</li> </ul>	Orchard – likely to contain suitable habitat for reptiles.
36	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Scrub</li> <li>Trees</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Birds</li> </ul>	Orchard – likely to contain suitable habitat for reptiles.
37	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedgerows</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Bats</li> </ul>	Series of generally small (mostly mown) grassland fields beside section of the Roman River. Some grassland is structurally varied. Most is species poor but includes locally frequent hairy sedge.
38	<ul style="list-style-type: none"> <li>Grassland</li> <li>Hedgerows</li> <li>Open water</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> <li>Bats</li> </ul>	Not surveyed but from aerial images appears to be number of grassland fields with hedges beside Roman River. May include pond in field to north of stream.

Target Note	Habitats and Features	Potential for Protected Species	Comments
39	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Habitats beside railway line and A12 includes structurally varied grassland.
40	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland in series of unmanaged fields.
41	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> <li>Open water</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Mosaic of habitats, including structurally varied grassland, tall ruderal, spoil heaps and scrub along PRow and southern edge of arable field north of Wyvern Farm. Depression among willows probably seasonal/ephemeral pond as some emergent/marginal vegetation present, including yellow iris, but very little water at time of survey.
42	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland in unmanaged field.
43	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Habitats beside railway line and A12 includes structurally varied grassland.
44	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedgerows</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Habitats between residential properties and arable.
45	<ul style="list-style-type: none"> <li>Open water</li> </ul>	<ul style="list-style-type: none"> <li>Great crested newts</li> <li>Reptiles</li> </ul>	Pond beside lane and set between residential with adjoining grassland, scrub and trees.
46	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Open water</li> <li>Swamp</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Unmanaged grassland between horse paddocks and residential, but likely of recent origin. OS maps and aerial images suggest the presence of a pond with swamp/emergent vegetation immediately to the west, among horse paddock.
47	<ul style="list-style-type: none"> <li>Scrub</li> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Birds</li> </ul>	Derelict orchard.
48	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Unmanaged field with tall ruderal and scattered scrub including stands of bramble.
49	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Choat's Wood - western end has canopy dominated by oak and birch, shrub layer by hazel and holly and field layer by bracken and bramble. Also hornbeam and willow, latter especially beside small stream on southern side.
50	<ul style="list-style-type: none"> <li>Semi-improved neutral grassland</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Seven Star Green LWS – moderately species-rich grassland includes common knapweed, bird's-foot trefoil, meadow vetchling, sorrel, cat's ear, and yellow rattle. Range of other species noted in LWS citation
51	<ul style="list-style-type: none"> <li>Running water</li> <li>Trees</li> </ul>	<ul style="list-style-type: none"> <li>Otters</li> </ul>	Small stream with stony bed in narrow corridor between gardens to north and south. Trees on banks.

Target Note	Habitats and Features	Potential for Protected Species	Comments
52	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Scrub</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Series of unmanaged fields adjoining residential with structurally varied grassland, tall ruderal and scattered and dense scrub among network of hedges.
53	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Essex Wildlife Trust's Iron Latch Nature Reserve and LWS. Also includes important grassland to north east.
54	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Hedges</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland and tall ruderal with adjoining hedges.
55	<ul style="list-style-type: none"> <li>Broadleaved plantation</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Mature plantation with especially oak and ash, but also field maple, hybrid poplar, maples, lime and beech. Patchy, thin shrub layer and what appears to be species poor field layer dominated by nettle. Viewed from northern edge.
56	<ul style="list-style-type: none"> <li>Open water/ponds</li> <li>Hedges</li> </ul>	<ul style="list-style-type: none"> <li>Great crested newts</li> </ul>	Pond in depression between two hedges with trees. Heavily shaded and so little vegetation but water starwort abundant at east end. Quite isolated for GCN but some connectivity along hedges.
57	<ul style="list-style-type: none"> <li>Open water/ponds</li> <li>Dense scrub</li> <li>Scattered trees</li> </ul>	<ul style="list-style-type: none"> <li>Great crested newts</li> </ul>	Houchin's Farm site includes water-filled moat and garden pond(s) as well as two large ponds/small reservoirs in south. Reservoirs have little aquatic, marginal or emergent vegetation and are stocked with fish and support relatively large numbers of waterbirds (coot and mallard), which, as well as being relatively isolated, reduces their suitability for great crested newts.
58	<ul style="list-style-type: none"> <li>Wet ditch</li> </ul>		Supports small amounts of common wetland plants, including hard and soft rush, water figwort, woody nightshade, water mint and great willowherb.
59	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedges</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland with scattered developing scrub and adjoining hedges. Structurally suitable for reptiles but isolated and probably of recent origin.
60	<ul style="list-style-type: none"> <li>Semi-improved neutral grassland</li> </ul>		Small area of moderately species-rich grassland on bank on eastern side of lane.
61	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Hedges</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland with scattered developing scrub and adjoining hedges. Structurally suitable for reptiles but quite isolated and probably of relatively recent origin.
62	<ul style="list-style-type: none"> <li>Mixed plantation</li> <li>Open water/ponds</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Mature plantation of spruce and mixed broadleaves also includes some trees likely to pre-date planting. Recently planted holm oaks along western edge. Contains pond with more or less no vegetation. Viewed from western edge.
63	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Tall ruderal</li> <li>Broadleaved plantation</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Young broadleaved plantation among unmanaged grassland and adjoining tall ruderal structurally suitable for reptiles but quite isolated and of relatively recent origin.
64	<ul style="list-style-type: none"> <li>Broadleaved plantation</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Young broadleaved plantation among unmanaged grassland structurally suitable for reptiles but quite isolated and of relatively recent origin.
65	<ul style="list-style-type: none"> <li>Wet ditch</li> </ul>		Several ditches between arable and adjoining plantation and scrub supports number of common wetland plants, including canary reed-grass, false fox sedge, forget-me-not, water mint, fool's watercress and gypsywort.

Target Note	Habitats and Features	Potential for Protected Species	Comments
66	<ul style="list-style-type: none"> <li>Running Water</li> </ul>	<ul style="list-style-type: none"> <li>Bats</li> <li>Otters</li> </ul>	Roman River – stream approx. 2m wide and 5cm deep (at time of survey) at this point with silt/gravel bed. Hedges with trees on banks.
67	<ul style="list-style-type: none"> <li>Broadleaved plantation</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Relatively large plantation of two main types. Main part comprises dense, maturing mix of species including ash, oak, field maple, cherry. Little shrub layer and species poor field layer. Section(s) beside Roman River and other watercourse planted with cricket bat willows. More open with grassy/tall ruderal field layer. Includes relic hedges on some edges. Viewed from west and east edges.
68	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Running Water</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> </ul>	Structurally varied grassland beside Roman River and plantation with scattered trees and scrub.
69	<ul style="list-style-type: none"> <li>Poor semi-improved grassland</li> <li>Standing water/pond</li> <li>Running Water</li> </ul>	<ul style="list-style-type: none"> <li>Reptiles</li> <li>Great crested newts</li> </ul>	Structurally varied grassland and pond with emergent vegetation beside Roman River. However, likely to be of quite recent origin and quite isolated.
70	<ul style="list-style-type: none"> <li>Broadleaved semi-natural woodland</li> </ul>	<ul style="list-style-type: none"> <li>Birds</li> <li>Dormice</li> <li>Bats</li> </ul>	Small area of wet woodland beside Roman River with alder, crack willow, ash and field maple. Shrubs include elder, hazel and blackthorn. Field layer species poor – nettle, bramble and ivy.
71	<ul style="list-style-type: none"> <li>Running Water</li> </ul>	<ul style="list-style-type: none"> <li>Bats</li> <li>Otters</li> <li>Reptiles</li> </ul>	Roman River – stream approx. 3m wide and 5-10cm deep (at time of survey) at this point with silt/gravel bed. Plants include pendulous sedge in shady areas and branched bur-reed, water figwort, fool's watercress and common duckweed in open sections. Banks support scattered trees (including planted willows) and scrub, as well as tall ruderal and structurally diverse grassland.
72	<ul style="list-style-type: none"> <li>Running Water</li> </ul>	<ul style="list-style-type: none"> <li>Bats</li> <li>Otters</li> </ul>	Small tributary of Roman River with little flow at time of survey. Small stands of common reed. Banks support trees and shrubs

## **Habitats**

### **Arable**

2.3.26 Arable is the most widespread and abundant habitat within the Study Area. In most cases arable weeds are largely confined to often narrow field margins or fallow areas, although some fields post-harvest they were relatively abundant. Species recorded include those listed below.

- |                        |                                |
|------------------------|--------------------------------|
| • Common poppy         | <i>Papaver rhoeas</i>          |
| • Field pansy          | <i>Viola arvensis</i>          |
| • Fathen               | <i>Chenopodium album</i>       |
| • Fig-leaved goosefoot | <i>Chenopodium ficifolium</i>  |
| • Prickly sowthistle   | <i>Sonchus asper</i>           |
| • Greater plantain     | <i>Plantago major</i>          |
| • Water pepper         | <i>Persicaria hydropiper</i>   |
| • Redshank             | <i>Persicaria maculosa</i>     |
| • Pale persicaria      | <i>Persicaria lapathifolia</i> |
| • Knotgrass            | <i>Polygonum arviculare</i>    |
| • Field madder         | <i>Sherardia arvensis</i>      |
| • Field speedwell      | <i>Veronica persica</i>        |

- |                         |                                  |
|-------------------------|----------------------------------|
| • White campion         | <i>Silene latifolia</i>          |
| • Thyme-leaved sandwort | <i>Arenaria serpyllifolia</i>    |
| • Scentless mayweed     | <i>Tripleurospermum inodorum</i> |
| • Shepherd's purse      | <i>Capsella bursa-pastoris</i>   |
| • Scarlet pimpernel     | <i>Anagallis arvensis</i>        |
| • Black bindweed        | <i>Fallopia convolvulus</i>      |
| • Round-leaved fluellen | <i>Kickxia spuria</i>            |
| • Black nightshade      | <i>Solanum nigrum</i>            |

## Grassland

- 2.3.27 Grassland is present throughout the Study Area. However, there are concentrations around settlements and residential properties, much of it comprising horse paddocks, amenity grassland or unmanaged fields and alongside watercourses such as the Roman River and Domsey Brook. In some areas there are also narrow strips of grassland along field boundaries. Much of the grassland is species poor, comprising coarse swards dominated by false oat-grass *Arrhenatherum elatius* and other bulky grasses, but species such as common knapweed *Cerntaurea nigra* and field scabious *Knautia arvensis* are locally frequent.
- 2.3.28 There is one small area of more species-rich grassland at Seven Star Green LWS (TN50), which includes a range of species characteristic of 'unimproved' neutral or acid grassland, such as bird's-foot trefoil *Lotus corniculatus*, meadow vetchling *Lathyrus pratensis*, sorrel *Rumex acetosa*, cat's ear *Hypochaeris radicata*, and the Essex Red List species yellow rattle *Rhinanthus minor*. A number of other species are also noted in the LWS citation.
- 2.3.29 Beside the Domsey brook in the south west of the Study Area at TN8 and TN13 cricket bat willow plantations (see mellow) stand among marsh or marshy grassland, with species such as meadowsweet *Filipendula ulmaria*, great willowhebe *Epilobium hirsutum* and stands of sedges *Carex* spp. Marshy grassland also adjoins the pond at TN9 with meadowsweet, fleabane *Pulicaria dysenterica*, meadow vetchling and glaucous sedge *Carex flacca*.

## Ruderal Vegetation

- 2.3.30 Stands of tall ruderal vegetation, including species such as thistles *Cirsium* spp., nettle *Urtica dioica* and docks are scattered across the Study Area. This is often associated with unmanaged areas and spoil heaps, such as at TN3, probable ex-arable at TN5, TN21 and TN34 and unmanaged field at TN48.
- 2.3.31 Some areas of what appears to be fallow arable, for example near TN1, support ephemeral/short perennial vegetation. This includes a range of arable weeds, other ruderal and grassland species.

## Woodland and Scrub

- 2.3.32 Woodland is relatively scarce in the Study Area and comprises largely of small scattered woods and plantations. Only one woodland, Church House Wood (TN34), is identified as Ancient Woodland, although Stonefield Strip (TN27) is also considered likely to be an Ancient Woodland fragment. Church House Wood and Choat's Wood in the north east of the Study Area (TN48) are the largest woodlands in the Study Area, although both would be considered small. Elsewhere, small woods such as those at TN14, TN15, TN26 and TN55 are generally set within the arable-dominated landscape, although they are connected to and by hedgerow networks. Some of the woods are likely to have originated as plantations, often incorporating sections of adjoining hedgerows, and in some cases include conifer species. A relatively large maturing broadleaved plantation is present at TN67, on either side of the Roman River in the north of the Study Area.
- 2.3.33 There are also a number of linear wooded features, for example associated with the Roman River, where willows *Salix* spp. and alder *Alnus glutinosa* are frequent, and along parts of the transport corridors, including the A12 and railway lines. There are also a number of green lane-like features with large double hedges.
- 2.3.34 Canopy species typically comprise ash *Fraxinus excelsior*, field maple *Acer campestre* and pedunculate oak *Quercus robur* and more rarely silver birch *Betula pendula*, sycamore *Acer pseudoplatanus* and sweet chestnut *Castanea sativa*. Hawthorn *Crataegus monogyna*, hazel *Corylus avellana* and elm *Ulmus* sp. are the most frequent and abundant shrub species but blackthorn *Prunus spinosa*, willows and holly *Ilex aquifolium* are locally frequent. The field layer in the larger woods (Church House Wood and Choat's Wood) appeared dominated by bracken and bramble. Several woods in the west of the Study Area had large stands of dog's mercury *Mercurialis perennis* as well as false brome *Brachypodium sylvaticum* and red campion *Silene dioica*. Bluebell is frequent or abundant in some (e.g. Stonefield Strip TN27).
- 2.3.35 A distinctive feature along the line of the Domsey Brook in the south west of the Study Area is a series of cricket bat willow plantations (TN8, TN10, TN11 and TN13). These are quite open, with widely spaced trees. As noted above, at TN8 and TN13 the willows stand among marsh or marshy grassland. A similar plantation also forms a part of the larger plantation at TN67, beside the Roman River.
- 2.3.36 Dense and scattered scrub, including hawthorn, blackthorn, willow, rose *Rosa* spp. elm, elder *Sambucus nigra* and stands of bramble *Rubus fruticosus*, is scattered throughout the Study Area, for example along field boundaries and as remnants of derelict hedges, along transport corridors, in unmanaged fields at TN19 and among a derelict orchard at TN47.

## Hedgerows

- 2.3.37 There is a network of hedgerows throughout the Study Area. Many are moderately species-rich in woody species, with frequent hawthorn, blackthorn, elm and field maple as well as ash, pedunculate oak, hazel, rose, willows, dogwood *Cornus sanguinea* and spindle. Many of the hedges have mature trees, especially ash, field maple and pedunculate oak, but also locally willow and alder in wetter areas.
- 2.3.38 Management and condition is very variable. Some hedges are clearly regularly cut, such as many of those beside roads or between arable fields, while others appear to have been unmanaged for some time. Again, some hedges are dense and continuous while others are quite gappy.
- 2.3.39 Many of the hedges also have associated land drains or ditches. Most of these were dry at the time of the survey, though some did still carry small amounts of water.

## Orchards

- 2.3.40 There are two traditional orchards in the north of the Study Area beside Rectory Lane (TN35 and TN36). These include a range of fruit trees, structurally diverse grassland and hedgerows. There is also what appears to be a derelict orchard at Seven Star Green (TN47). Much of this now appears to be occupied by dense and scattered scrub with structurally diverse grassland but fruit trees are still present in at least part of the area.

## Wetland

### Running Water

- 2.3.41 There are three small watercourses in the Study Area all of which run broadly west to east. The Domsey Brook in the south west is a small stream, although it is reported that it can seasonally inundate adjoining areas during the winter, and this is reflected in the presence of associated habitats such as marshy grassland.
- 2.3.42 The Roman River is a small watercourse which retains, in parts, relatively natural features such as riffle and pool. The bed is variable, with sand and gravel and silt in different parts. Much of it is shaded by trees and scrub, including frequent willow and alder. Parts of the wider corridor of the Roman River includes relatively small fields with substantial hedgerows.

- 2.3.43 A third small stream runs along the southern edge of Choats Wood (TN49) and between gardens (TN51) at Eight Ash Green in the North East of the Study Area.

#### **Open Water**

- 2.3.44 Ponds are scattered throughout the Study Area, e.g. TN3, TN9, TN22, TN23, TN32, TN41, TN45, TN56, TN57, TN62 and TN69. Most have adjoining habitats such as structurally variable grassland, tall ruderal, scrub, hedgerows and woodland.
- 2.3.45 The Ordnance Survey maps indicate the presence of quite a number of small ponds within or along the line of hedgerows throughout the Study Area. A number of these (e.g. TN23 and TN41) did contain water or the vegetation clearly indicated that they did for a significant part of the year. However, in many cases the features comprised dry depressions with no clear indication, such as emergent or marginal vegetation, that they hold water for any length of time, although they may do seasonally.
- 2.3.46 The survey, as well as Ordnance Survey maps and aerial images, indicate the presence of ponds associated with houses and gardens throughout the Study Area, such as at Marks Tey Hall (TN20).

#### **Swamp**

- 2.3.47 Several of the ponds support small amounts of swamp or emergent vegetation. However, the pond at TN9 supports the most extensive stands, including reedmace, *Typha* sp. cyperus sedge *Carex pseudocyperus*, water mint *Mentha aquatica*, and sea club-rush *Bolboschoenus maritimus*. Marginal vegetation includes rushes *Juncus* spp. and gypsywort *Lycopus eurpaeus*.

#### **Protected Species**

##### **Great crested newts**

- 2.3.48 Great crested newts, and their breeding sites are protected under the Habitats Regulations and the Wildlife and Countryside Act (as amended) 1981. Ponds are scattered throughout the Study Area, particularly in association with hedgerows and residential gardens, and these offer potentially suitable breeding habitat for great crested newts. In many cases the ponds are also adjoined by terrestrial habitat suitable for great crested newts, including hedgerows, scrub, woodland, structurally diverse grassland and tall ruderal.

- 2.3.49 However, there are no records of great crested newts from within the Site, although there are records from within the 2km Study Area. Many of the ponds and nearby terrestrial habitat are set within a landscape of intensive arable agriculture, although the hedgerow network and other semi-natural habitat do provide some level of habitat connectivity.

### **Reptiles**

- 2.3.50 All British reptiles are protected from deliberate killing and injuring under the Wildlife and Countryside Act (as amended) 1981. Suitable habitat for reptiles, comprising tall, tussocky grassland or grassland of varied structure and tall ruderal vegetation accompanied by scrub (including bramble) or hedges and features such as spoil, rubble or wood piles, streams and ponds, is distributed throughout the Site, particularly within and around the edges settlements. A number of locations with such habitats and features are identified in the Target Notes (**Table 2.1**), but this is not exhaustive and further areas of suitable habitat are present elsewhere. Although records of reptiles within the Site are scarce this may reflect survey effort rather than genuine presence or absence.

### **Birds**

- 2.3.51 Bird species, their nests and eggs are protected from killing and injuring under the Wildlife and Countryside Act (as amended) 1981. In addition, some species listed in Schedule 1 of the Act are protected from deliberate disturbance at all times. Arable, fallow and grassland may support ground nesting birds such as skylark and may to be used for foraging by a wide range of species. Hedgerows, scrub, trees and woodland are likely to comprise important breeding and foraging habitat for farmland and woodland species.

### **Dormice**

- 2.3.52 Dormice and their breeding and resting places are protected under the Habitats Regulations and the Wildlife and Countryside Act (as amended) 1981. There are no records of dormice from within the Site and records from the 2km Study Area are also relatively scarce. The Site itself, due especially to the relative scarcity of woodland, would be considered less than ideal for dormice. However, dormice have been found in scrub and hedgerows and these are present throughout the Site.

### **Water voles**

- 2.3.53 Water voles are protected from deliberate killing and injuring under the Wildlife and Countryside Act (as amended) 1981. Water voles have not been recorded from with the Site

but they have been recorded on the Roman River just up and downstream of it, and this watercourse offers suitable habitat for water voles. The Domsey Brook and the small stream in the north east of the Site may also be suitable for water voles.

### **Bats**

- 2.3.54 Bats and their breeding and resting places are protected under the Habitats Regulations and the Wildlife and Countryside Act (as amended) 1981. Trees with features such as cracks and cavities and heavy growths of ivy, of which there are many within the Site, as well as buildings with features such as tiled roofs, and internal cavities such as roof spaces, may be used as roosts by bats. In addition, habitats and features such as woodland, hedgerows, grassland, watercourses, waterbodies and other wetland areas are likely to be important for foraging and commuting.

### **Otters**

- 2.3.55 Otters and their breeding and resting places are protected under the Habitats Regulations and the Wildlife and Countryside Act (as amended) 1981. Although otters have not been recorded from within the Site there are records from the Rivers Colne and Blackwater nearby. The Roman River as well as the smaller Domsey Brook and the small stream in the north east of the Site may be used by otters.

### **Badgers**

- 2.3.56 Badgers and their setts are protected from interference under the Protection of Badgers Act 1992. Badger setts tend to be found in woodlands, amongst scrub, on banks and in hedgerows. Activity can take place in a wide range of habitats, including woodland, scrub, along hedgerows, grassland, arable and gardens. Suitable habitat for badgers is widespread throughout the Site, as are records of them.

## **Other Notable Species**

### **Essex BAP Species**

2.3.57 The following Essex BAP species have the potential to occur within the Site.

- Bat spp.;
- Pipistrelle bat;
- Dormouse;
- Brown hare;
- Grey partridge;
- Skylark;
- Song thrush;
- Great crested newt;
- Stag beetle; and
- Bees.

## **2.4 Constraints and Opportunities**

2.4.1 The habitats of greatest nature conservation importance within the Site are the:

- woodlands, especially Ancient/probable Ancient Woodland (Church House Wood LWS (TN34) and Stonefield Strip LWS (TN27));
- hedgerow network, especially where this is in relatively good condition, well connected and where it includes mature trees;
- more species-rich grassland, such as that at Seven Star Green LWS (TN50);
- wetland habitats, including the Roman River and Domsey Brook and associated marsh/marshy grassland, pond and swamp; and
- traditional orchards, such as those at TN35, TN36 and TN47.

2.4.2 Other habitats, such as the species-poor grassland, ruderal and arable are of less importance, although locally they may have significance for some species, such reptiles and skylark.

2.4.3 Based on the distribution of habitats within the Site the most important areas are considered to be:

- the Domsey Brook corridor, including the associated marsh/marshy grassland pond/swamp, hedgerows and woodland/plantation; and
- the Roman River corridor, including adjoining grassland and hedgerows (e.g. TN37), the broadleaved plantation and grassland at TN67 and TN68, wet woodland at TN70, nearby Church House Wood Ancient Woodland and LWS (TN34) and Stonefield Strip LWS (TN27),

other small wooded areas (e.g. TN 26) and traditional orchards (TN35 and TN36) and Marks Tey Pit SSSI and LWS (TN29).

2.4.4 The cluster of habitats in the Seven Star Green area, including Choats Wood (TN49), the grassland of Seven Star Green LWS (TN50) and the (derelict?) traditional orchard with scrub and grassland (TN47) is also of importance.

2.4.5 Recommendations regarding the consideration of ecological aspects of potential development, including opportunities for ecological enhancements, within the Site are set out below:

- Retain and safeguard important habitats and areas, including those identified in Section 2.3 above.
- Buffer sensitive habitats, such as woodland and wetland, from any proposed development using strips of undeveloped land between the relevant habitats and proposed development.
- Retain wide green corridors, for example building upon the existing hedgerow network, especially where this includes mature trees, within and through developed areas, and linking other retained (and created) areas of habitat, both within and outside any development.
- Retain mature trees (including or especially those in hedgerows), within any proposed development, preferably as part of wider areas of semi-natural habitat or green corridors.
- Enhance retained habitats by appropriate positive management, such as coppicing, grazing etc.
- Create new areas of habitat, such as woodland, scrub, grassland and wetland, including ponds, targeted especially adjacent to or between retained existing habitats in order to expand and link them, thus making them more resilient.
- Retain and enhance (through habitat creation and management) habitat links to the wider landscape, for example to the valleys or corridors of the River Blackwater (e.g. along the Domsey Brook corridor), Roman River (to the west and south east) and River Colne (to the north).

2.4.6 The above principles are consistent with, and would help in the delivery of, the recommendations for creation of ecological networks and links identified in the Colchester Borough Green Infrastructure Strategy.

#### **Further Work Recommendations**

2.4.7 On the basis of the scoping survey work undertaken as part of this Environmental Audit, the following more detailed ecological surveys are recommended for specific species and/or

species groups to inform the masterplanning, environmental assessment and mitigation for development on the Site:

- Botanical;
- Terrestrial and freshwater invertebrates;
- Amphibians, including great crested newts;
- Reptiles;
- Breeding birds;
- Dormice;
- Water voles;
- Bats, including roosts and activity; and
- Badgers.

## **2.5 Summary**

- 2.5.1 Much of the Site consists of arable fields set within a more or less intact hedgerow network, which includes mature and veteran trees. There are concentrations of important habitat along and adjoining the corridors of the Domsey Brook and Roman River, as well as around Seven Star Green, and it is recommended that habitats in these areas in particular are retained and enhanced in relation to any potential or proposed development within the Site. The Site also has the potential to support a number of protected species and other species of conservation importance and more detailed surveys will be required for these, as appropriate, in relation to any proposed development.

## **3.0 LANDSCAPE/TOWNSCAPE CHARACTER AND VISUAL AMENITY**

### **3.1 General**

3.1.1 The purpose of this section is to identify potential constraints and opportunities for development of the Site in landscape and visual terms.

3.1.2 The European Landscape Convention (ELC) aims to promote co-operation on improving approaches to the planning, management and protection of landscapes throughout Europe. The ELC states that 'landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. This appraisal adopts the broad and inclusive ELC definition of landscape embracing townscapes and riverscapes, as well as all forms of rural landscape.

### **3.2 Audit Methodology**

3.2.1 Potential landscape/townscape character and visual amenity effects that could result from development of the Site have been determined by assessing the degree of change to the existing landscape character and amenity of sensitive visual receptors within the Study Area. The methodology used for the appraisal is based on the guidance set out in adapted as appropriate for the purposes of this Environmental Audit:

- Guidelines for Landscape and Visual Impact Assessment 3rd Edition (The Landscape Institute and the Institute for Environmental Management and Assessment, 2013).
- Landscape Character Assessment Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage, 2002)

3.2.2 In line with the above guidance, the appraisal includes a desk-based review of currently available landscape character studies and other relevant information, supplemented by targeted field survey work.

3.2.3 The desk-based review included consideration of the following information:

- National Character Area Profiles (Natural England, 2013/2014);
- Essex Landscape Character Assessment (Chris Blandford Associates, 2003);
- Colchester Borough Landscape Character Assessment (Chris Blandford Associates, 2005);
- Braintree District Landscape Character Assessment (Chris Blandford Associates, 2006);

- Townscape Character Assessments for Colchester, Tiptree, West Mersea and Wivenhoe (Chris Blandford Associates, 2006);
- Landscape Capacity of Settlement Fringes in Colchester Borough (Chris Blandford Associates, 2005);
- Braintree District Settlement Fringe Landscape Capacity Analysis: for Braintree and Environs (Chris Blandford Associates, November 2007);
- Assessment of Open Countryside between Settlements in the Borough of Colchester (Chris Blandford Associates, 2009);
- 1:25,000 & 1:10,000 scale OS mapping; and
- Aerial photography (Google Maps/Bing Maps).

3.2.4 Field surveys of the Study Area were undertaken during September and October 2015 from the extensive network of public rights of way through the Site. This included taking photographs from representative views within the Site.

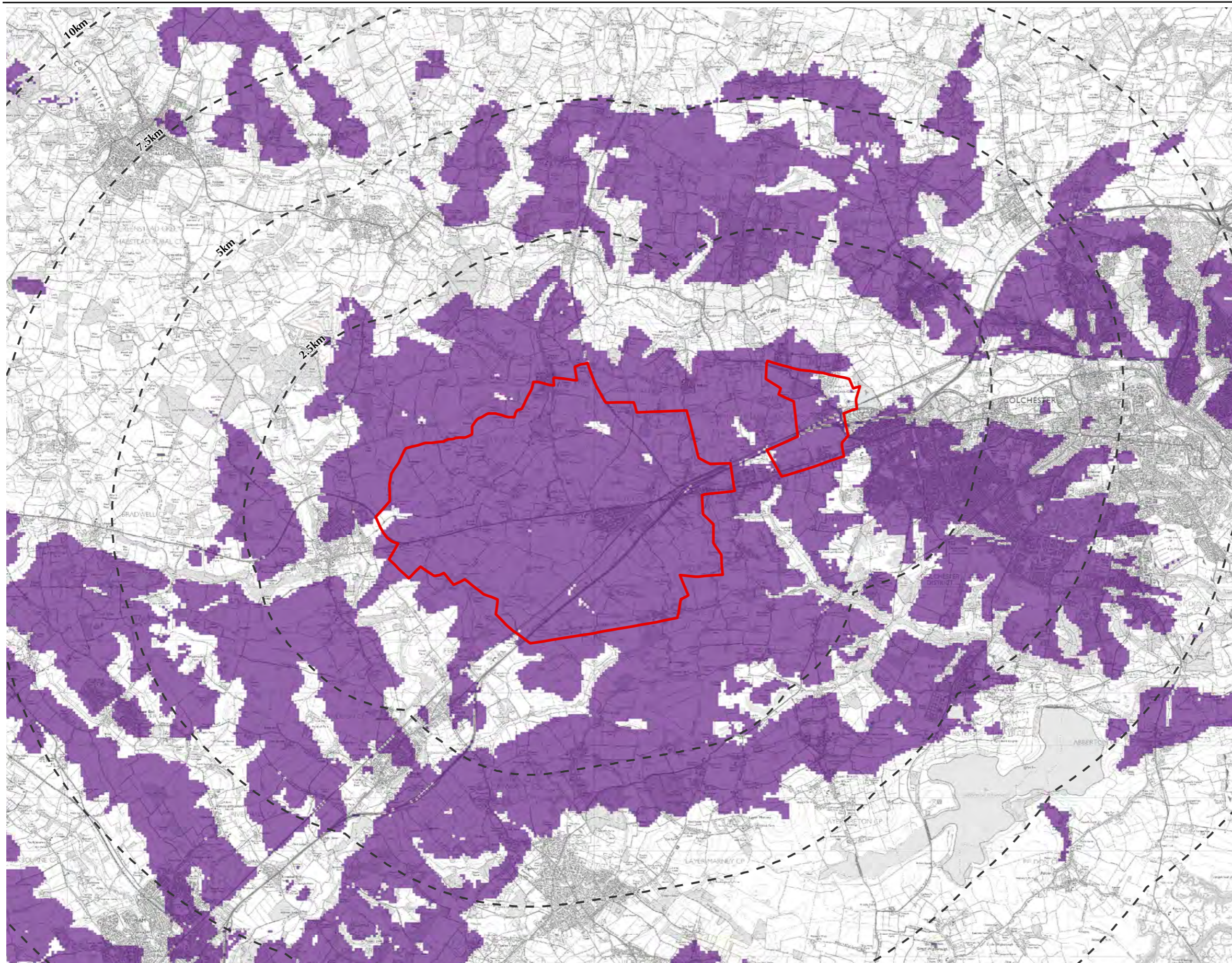
### **Study Area**

3.2.5 The Study Area was defined by modelling the Zone of Theoretical Visibility (ZTV) of the Site using GIS software as shown on **Figure 3.1**. The field survey work established that the actual Zone of Visual Influence (or visual envelope) of the Site is far more limited than the ZTV suggests due to the screening effects of intervening buildings and vegetation. On this basis, a Study Area extending 2.5 km from the Site was chosen to allow an appraisal of the potential significant landscape and visual effects of development on the Site.

## **3.3 Existing Conditions**

### **Topography and Watercourses**

3.3.1 The western part of the Site, around Marks Tey, lies between 65m and 30m AOD (see **Figure 3.2**). The lower-lying land is associated with watercourses. In the north of the area, Roman River, its tributaries, and its associated shallow valley cut across the Site, running south-east before joining the River Colne adjacent to Abberton Reservoir; and the shallow sided valley of Domsey Brook, a tributary of the Blackwater River, lies in the south. The eastern area of the Site, associated with Eight Ash Green, lies between 50 and 25m AOD, with the lowest land found in the west where the Roman River passes close to the Site boundary.



# KEY

Site Boundary

Zone of Theoretical Visibility

The Zone of Theoretical Visibility (ZTV) has been digitally mapped using a computer model to show areas from which the Site may be theoretically visible. The ZTV mapping uses elevation data to create a digital terrain model and calculate intervisibility between points. The ZTV does not take account of screening by buildings, structures and vegetation that will influence potential visibility.

## Notes:

The point locations and heights used within the model are for indicative purposes only. The ZTV is calculated for 7 points, each 1m above the ground, spaced evenly across the highest ground within the site boundary.

Viewer height is 2m above ground level.

The terrain model is bare ground and uses OS Terrain 50 height data. Earth curvature and atmospheric refraction have been taken into account.

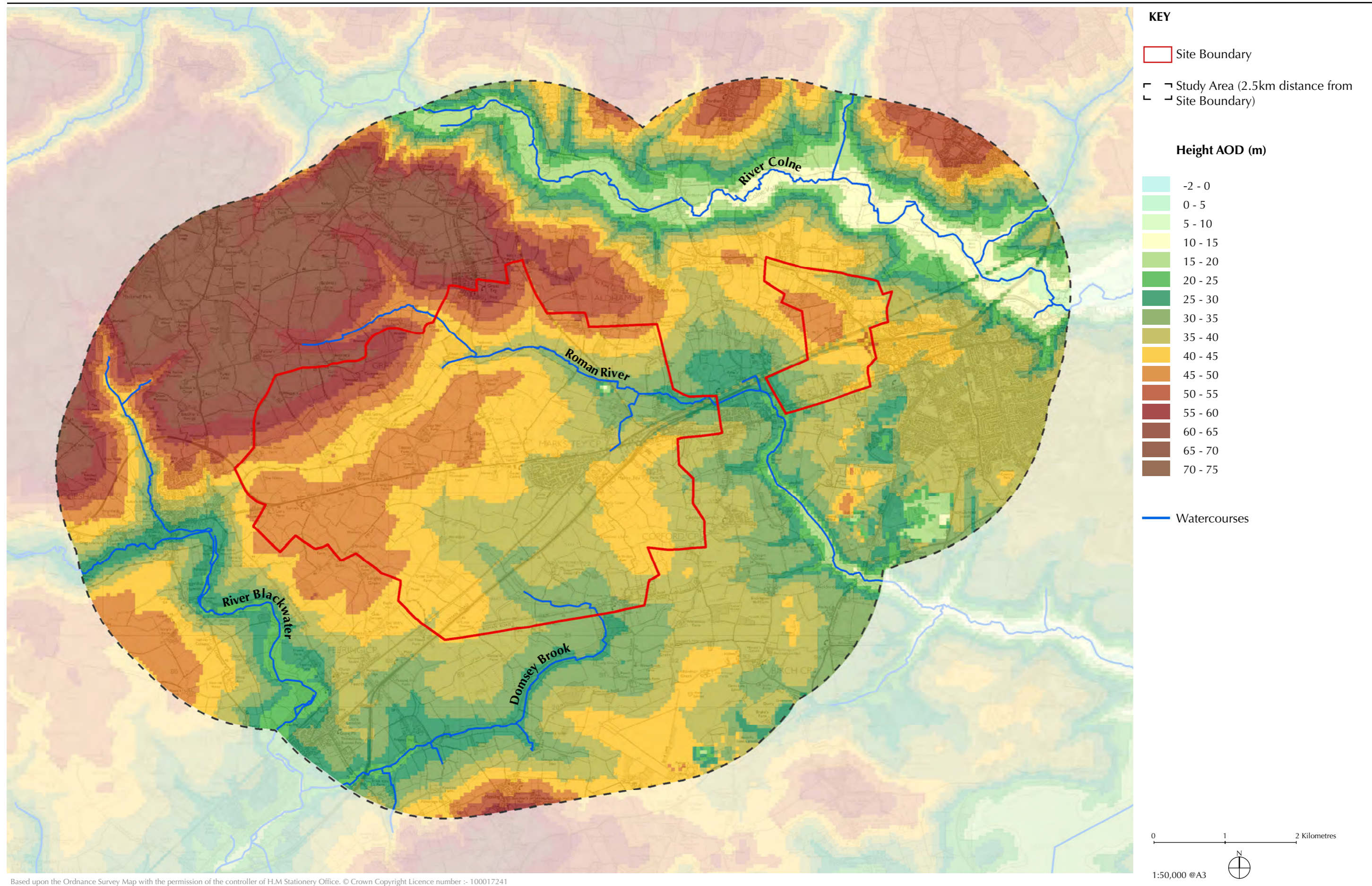
The software used is ESRI Arc GIS 10

0 1 2 Kilometres

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## Vegetation

- 3.3.2 The vegetation within the Site is predominantly composed of intensive arable farmland (see **Figure 1.1**). Many of the field boundaries are formed from mature hedges, with some small blocks of woodland, including one small area of ancient woodland in the northeast of the Site at Church House Wood.

## Land Use

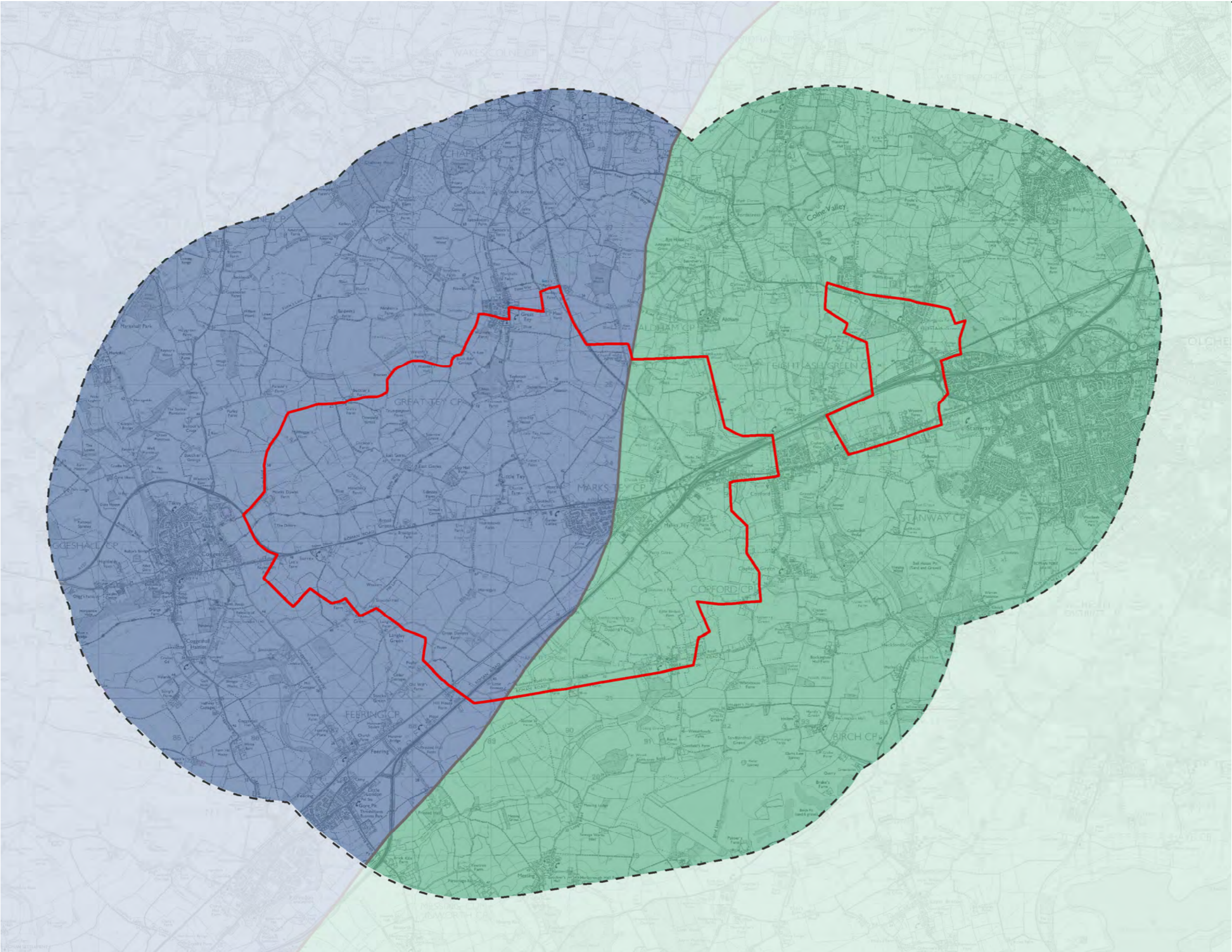
- 3.3.3 The land use within the Marks Tey area of the site is dominated by arable farmland. The main settlements are formed from the village of Marks Tey, which lies in the centre of the site between the A120 and the railway line (Great Eastern Mainline); and by the small villages of Great Tey (in the north), Little Tey (in the centre) and Easthorpe (in the south). The A12 primary route runs northwest-southeast through the site, with a large junction to the A120, B1408, and minor road to the south of Marks Tey station. Marks Tey station acts as a junction between the Great Eastern Mainline (Colchester to Liverpool Street, London) and the Gainsborough Line, which is a branch line north to Sudbury. A number of minor roads also run across the site, linking small settlements and farms. Along the A12 to the south of Marks Tey are some industrial sites.
- 3.3.4 The eastern area of the Site, at Eight Ash Green has varied land use, with some arable farmland, some settlement, and some key transport infrastructure. The A12 and A1124 cross the Site, with a large junction to the south of Eight Ash Green. The B1408, within the southern edge of the site, has a variety of property along both sides, including residential, a large garden centre, farming, and industrial estate. Eight Ash Green is the predominant settled area within the Site, with smaller settlements at Seven Star Green and Fordam Heath.

## National Character Areas

- 3.3.5 The eastern half of the Site is covered by National Character Area 111<sup>5</sup>, see **Figure 3.3**, the Northern Thames Basin. The following key characteristics are relevant to the Study Area:
- *The landform is varied with a wide plateau divided by river valleys.*
  - *Characteristic of the area is a layer of thick clay producing heavy, acidic soils, resulting in retention of considerable areas of ancient woodland.*
  - *Areas capped by glacial sands and gravels have resulted in nutrient-poor, free-draining soils which support remnant lowland heathlands, although these are now small. Areas that have alluvial deposits present are well drained and fertile.*

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<sup>5</sup> NCA Profile: 111 Northern Thames Basin (Natural England, 2013) [www.naturalengland.org.uk](http://www.naturalengland.org.uk)



**KEY**

Site Boundary

Study Area (2.5km distance from Site Boundary)

**National Character Areas:**

111: Northern Thames Basin

86: South Suffolk & North Essex Clayland

0 1 2 Kilometres

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- *The water bearing underlying Chalk beds are a main source of recharge for the principal London Basin Chalk aquifer.*
- *A diverse landscape with a series of broad valleys containing the major rivers Ver, Colne and Lea, and slightly steeper valleys of the rivers Stour, Colne and Roman. Numerous springs rise at the base of the Bagshot Beds and several reservoirs are dotted throughout the area*
- *The pattern of woodlands is varied across the area and includes considerable ancient semi-natural woodland. Hertfordshire is heavily wooded in some areas as are parts of Essex, while other areas within Essex are more open in character. Significant areas of wood pasture and pollarded veteran trees are also present.*
- *The field pattern is very varied across the basin reflecting historical activity. Informal patterns of 18th-century or earlier enclosure reflect medieval colonisation of the heaths. Regular planned enclosures dating from the Romano-British period are a subtle but nationally important feature on the flat land to the south-east of the area. In the Essex heathlands 18th- and 19th-century enclosure of heathlands and commons followed by extensive 20th-century field enlargement is dominant.*
- *Grasslands are characteristic of the river valleys throughout. Horticulture and market gardening are found on the light, sandy soils of former heaths in Essex, particularly around Colchester, along with orchards, meadow pasture and leys following numerous narrow rivers and streams.*
- *The diverse range of semi-natural habitats include ancient woodland, lowland heath and floodplain grazing marsh and provide important habitats for a wide range of species including great crested newt, water vole, dormouse and otter.*
- *Rich archaeology including sites related to Roman occupation, with the Roman capital at Colchester and City of St Albans (Verulamium) and links to London.*

3.3.6 The western half of the Site is covered by National Character Area 86<sup>6</sup>, see **Figure 3.3**, South Suffolk and North Essex Clayland. The following key characteristics are relevant to the Study Area:

- *An undulating chalky boulder clay plateau is dissected by numerous river valleys, giving a topography of gentle slopes in the lower, wider valleys and steeper slopes in the narrower upper parts.*
- *Fragments of chalk give many of the soils a calcareous character, which also influences the character of the semi-natural vegetation cover.*
- *South-east-flowing streams and rivers drain the clay plateau. Watercourses wind slowly across flood plains, supporting wet, fen-type habitats; grazing marsh; and blocks of cricket-bat willows, poplars and old willow pollards. Navigation locks are present on some rivers.*

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<sup>6</sup> NCA Profile: 86 South Suffolk and North Essex Clayland (Natural England, 2013) [www.naturalengland.org.uk](http://www.naturalengland.org.uk)

- *Lowland wood pasture and ancient woodlands support the dormouse and a rich diversity of flowering plants on the clay plateau. Large, often ancient hedgerows link woods and copses, forming wooded skylines.*
- *The agricultural landscape is predominantly arable with a wooded appearance. There is some pasture on the valley floors. Field patterns are irregular despite rationalisation, with much ancient countryside surviving. Field margins support corn bunting, cornflower and brown hare.*
- *Roman sites, medieval monasteries and castles and ancient woodlands contribute to a rich archaeology. Impressive churches, large barns, substantial country house estates and Second World War airfields dot the landscape, forming historical resources. There is a dispersed settlement pattern of scattered farmsteads, parishes and small settlements around 'tyes' (commons) or strip greens and isolated hamlets. The NCA features a concentration of isolated moated farmsteads and numerous well-preserved medieval towns and large villages.*
- *Larger 20th-century development has taken place to the south and east around Chelmsford, Ipswich and the new towns of Harlow and Stevenage.*
- *Traditional timber-frame, often elaborate buildings with exposed timbers, colour-washed render, pargeting and steeply pitched roofs with pegtiles or long straw thatch. Sometimes they have been refronted with Georgian red brick or Victorian cream-coloured bricks ('Suffolk whites'). Clay lump is often used in cottages and farm buildings.*
- *Winding, narrow and sometimes sunken lanes are bounded by deep ditches, wide verges and strong hedgerows. Transport infrastructure includes the A14, A12, M11 and Stansted Airport.*
- *A strong network of public rights of way provides access to the area's archetypal lowland English countryside.*

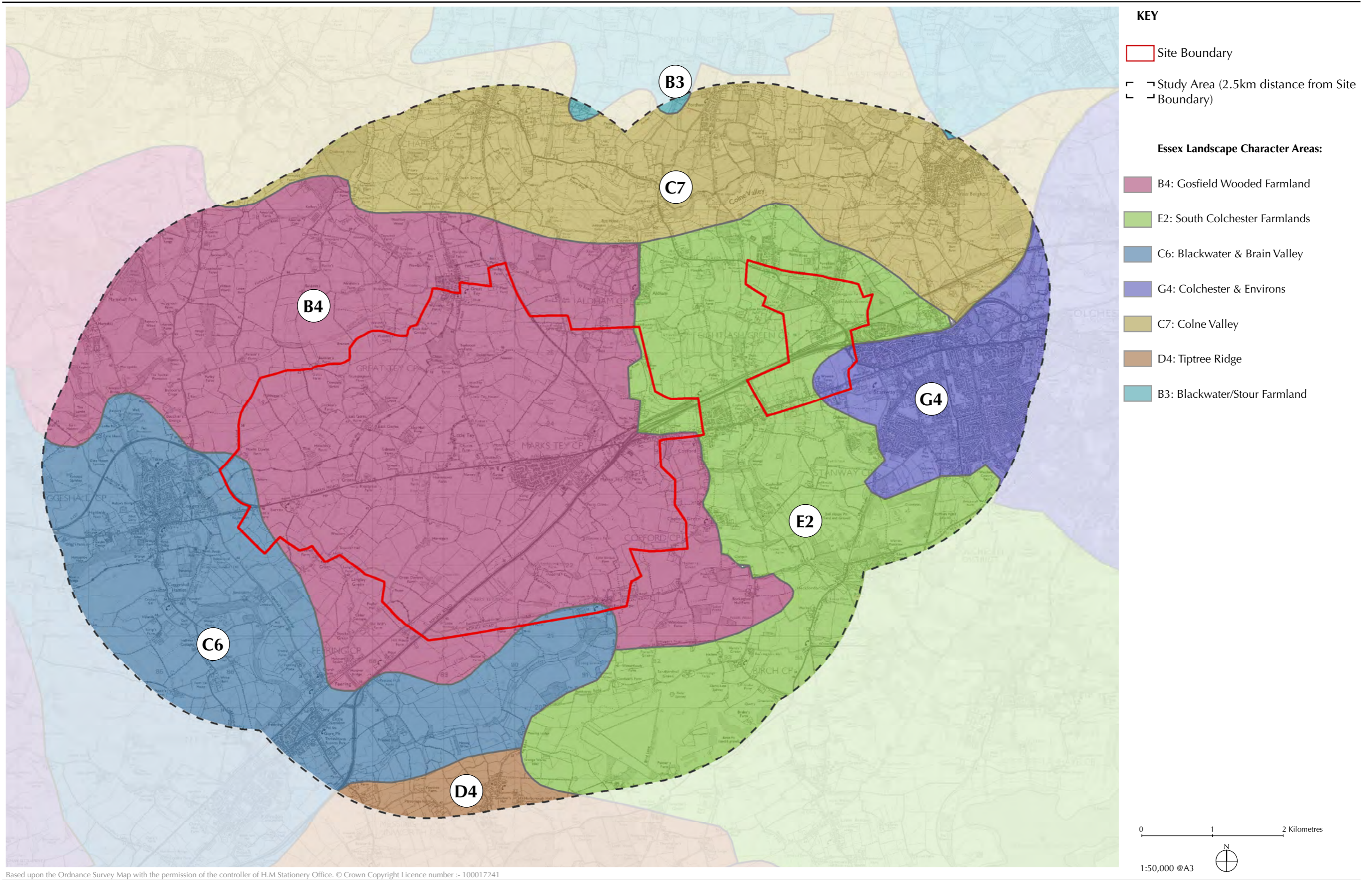
### **Essex Landscape Character Assessment**

3.3.7 The Essex Landscape Character Assessment<sup>7</sup> has identified the following landscape character areas within the Study Area. These are shown on **Figure 3.4**:

- Gosfield Wooded Farmland (B4)
- South Colchester Farmlands (E2)
- Blackwater & Brain Valley (C6)
- Colchester & Environs (G4)
- Colne Valley (C7)
- Tiptree Ridge (D4)
- Blackwater/Stour Farmland (B3)

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<sup>7</sup> Essex Landscape Character Assessment, Chris Blandford Associates (2003)



3.3.8 The following key characteristics for each character area are relevant to the Study Area:

**Gosfield Wooded Farmland (B4)**

- *Flat to gently undulating landform.*
- *Strong pattern of large and small woods, including distinctive ancient limewoods.*
- *Irregular medium size arable fields, bounded by thick hedgerows with mature hedgerow trees.*
- *Enclosed character.*
- *Many small farmsteads, occasional hamlets and villages.*

**South Colchester Farmlands (E2)**

- *Mix of small regular pasture and large arable fields.*
- *Dense woodland in the Roman River valley.*
- *Enclosed, intimate character in the north, more open in the south.*
- *Complex settlement pattern of nucleated and linear villages/hamlets, and farmsteads along dispersed lanes.*
- *Distinctive elongated large waterbody of Abberton Reservoir within a shallow valley.*

**Blackwater & Brain Valley (C6)**

- *Shallow valleys.*
- *Predominantly arable farmland with well hedged medium to large fields.*
- *The Brain and the Upper Blackwater Valleys are narrow with undulating valleysides.*
- *The Lower Chelmer, and the Blackwater near Maldon, have wide flat valley floors, and gentle valleysides.*
- *Extensive linear poplar and willow plantations are a distinctive feature.*

**Colchester and Environs (G4)**

- *Historic town core with a strong grid pattern on a low hill above the River Colne.*
- *Residential and commercial development wraps over valleysides or slightly elevated flatter land.*
- *Uninterrupted valley floor of the Colne forms a ribbon of green space running through the centre of the urban area.*
- *Large blocks of woodlands and open spaces on some valleysides.*
- *Variable size regular hedgerowed fields in the fringing farmland.*

### **Colne Valley (C7)**

- *Shallow valley of variable width with numerous small tributary valleys.*
- *Gently to moderately undulating valleysides.*
- *Narrow valley bottom, mainly pasture.*
- *Arable valleyside farmland with frequent small woodlands.*
- *A series of small towns and villages at bridging points.*
- *Historic mill buildings are distinctive features.*

### **Tiptree Ridge (D4)**

- *Elevated, broad ridge.*
- *Strongly wooded western ridgeside.*
- *Small - medium scale field pattern.*
- *Enclosed character provided by many tall, thick hedgerows and woodland.*
- *Framed views over the Blackwater Valley and the Blackwater coastal farmlands.*

### **Blackwater/Stour Farmlands (B3)**

- *Very gently undulating or flat landform.*
- *Large scale arable field pattern.*
- *Infrequent small blocks of woodland, some mature hedgerow trees on field boundaries.*
- *Wide views across the farmland.*
- *Small villages, hamlets with a wealth of historic buildings.*
- *Tranquil character.*

### **Colchester Borough and Braintree District Landscape Character Areas**

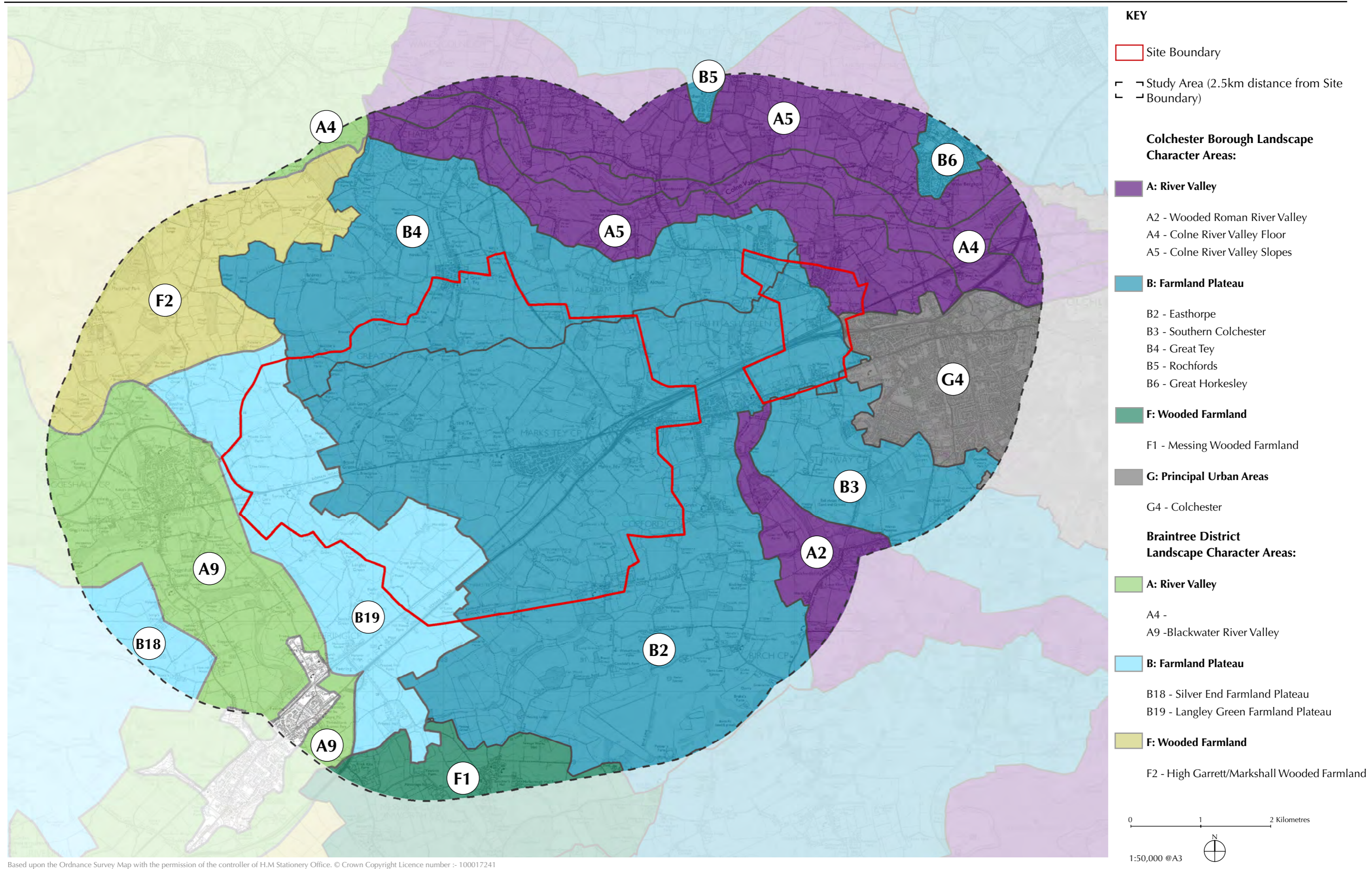
3.3.9 The Colchester Borough Landscape Character Assessment<sup>8</sup> has identified the following landscape character areas within the Study Area. These are shown on **Figure 3.5:**

#### **Wooded Roman River Valley (A2)**

- *Relatively steep and wooded slopes of narrow v-shaped Roman River valley (tributary of the Colne River);*
- *Large areas of deciduous and coniferous (mixed) woodland on the valley slopes (e.g. Donyland Wood, Friday Wood and Chest Wood);*
- *Small patches of ancient woodland on the valley sides;*

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<sup>8</sup> Colchester Borough Landscape Assessment, Chris Blandford Associates (2005)



- *Large regular fields on northern valley slopes with a concentration of smaller irregular fields at High Park Corner;*
- *Several areas of historic parkland, often associated with halls, overlooking the valley floor;*
- *Views across and within the valley restricted by large woodland areas.*

#### **Colne River Valley Floor (A4)**

- *Floodplain of the Colne River – relatively narrow in the upper reaches of the river valley and broader as the River moves eastwards towards Colchester and the Colne estuary;*
- *Meandering River Colne is narrow in comparison with the broad spread of the floodplain across which the river flows;*
- *Colne River is bridged by several roads and lanes, which connect the north and south valley slopes and facilitate views along the river corridor to the east and west;*
- *Floodplain corridor sprinkled with mills and weirs;*
- *Striking landmark viaduct crossing the river corridor at Chappel.*

#### **Colne River Valley Slopes (A5)**

- *Relatively steep v-shaped valley slopes facilitate attractive and open views across and along the River corridor;*
- *Principal road network consisting of narrow tree-lined (sometimes sunken) lanes traversing the valley sides to the north and south;*
- *A mosaic of medium to large-sized irregular and regular, predominantly arable fields with medium hedgerows containing semi-mature/ mature hedgerow trees;*
- *Some larger semi-enclosed arable fields to the west of Wakes Colne; and concentrations of smaller fields with intact hedge boundaries adjacent to settlements;*
- *Settlement pattern consists of small linear village settlements such as Wakes Colne and Eight Ash Green, adjacent to the north-south roads, which cross the River Valley; small hamlets and farmsteads.*

#### **Easthorpe Farmland Plateau (B2)**

- *Raised farmland plateau, dissected by the wooded Roman River valley in the east;*
- *A mixture of small, medium and large irregular, predominantly arable fields;*
- *Small patches of deciduous woodland and several ponds/ reservoirs;*
- *Area crossed by a network of narrow, sometimes winding lanes;*
- *Airfield, surrounded by large open fields has a dominant influence on the landscape character in the south of the area;*

- *Settlement pattern consists of small villages and hamlets with scattered farmsteads amongst predominantly arable agricultural land.*

#### **Southern Colchester Farmland Plateau (B3)**

- *An area of sloping farmland plateau (with a mixture of small, medium and large predominantly arable fields) bordered by Colchester settlement fringes to the north and the wooded Roman River Valley to the south;*
- *Influence of the military (East Donyland military training area & Middlewick Rifle Ranges) – disturbs tranquillity whilst firing practice is taking place;*
- *Several large patches of woodland extend from the northern slopes of the Roman River valley, onto the plateau;*
- *Several small lakes and ponds, within disused sand and gravel works;*
- *Character area provides physical and visual separation between Colchester urban area and the Roman River Valley;*
- *Fragmented and sometimes chaotic landscape structure with numerous unrelated land uses.*

#### **Great Tey Farmland Plateau (B4)**

- *Gently sloping farmland plateau consisting of a mixture of medium to large-scale enclosed, predominantly arable fields;*
- *Linear belts and small patches of predominantly deciduous woodland;*
- *Small nucleated settlements and scattered farmsteads;*
- *Comprehensive network of footpaths and winding lanes;*
- *Peaceful and tranquil atmosphere.*

#### **Rochfords Farmland Plateau (B5)**

- *Mixture of medium and large rolling arable fields interspersed with small woodland patches;*
- *Fields enclosed by gappy hedges, with occasional mature trees within field boundaries;*
- *Landscape feels more open and exposed in places than the adjacent Great Horkesley farmland plateau to the west;*
- *Large weatherboarded vernacular barns (for example at Fordham);*
- *Settlement pattern consists of villages with varying forms, small hamlets and scattered farmsteads*

#### **Great Horkesley Farmland Plateau (B6)**

- *Small to medium scale arable fields with concentrations of mature trees at field boundaries;*

- *Interesting field pattern consisting of small, regular fields to the south of Boxted and also to the east of Great Horkesley;*
- *Orchards in close proximity to Great Horkesley;*
- *Farmland plateau crossed in a north-south direction by two straight roads, which connect with Colchester's northern settlement fringe. Linear settlement pattern extends from the layout of these roads;*
- *A network of narrow lanes (sometimes sunken), which are lined by trees and hedges connect the remainder of the character area with the two main north south roads;*
- *Hedgerows are diverse and well managed/ clipped in most places.*

#### **Messing Wooded Farmland (F1)**

- *Sparse settlement pattern consisting of the small village of Messing, and a number of small isolated farmsteads;*
- *Elevated plateau landform which is situated on a broad ridge and dissected by small streams, providing undulations in topography;*
- *Large areas of mixed woodland (for example Layer Wood and Pods Wood);*
- *Number of small ponds and lakes;*
- *Single mature trees at field boundaries or standing within fields.*

3.3.10 The Braintree District Landscape Character Assessment<sup>9</sup> has identified the following landscape character areas within the Study Area. These are shown on **Figure 3.5**:

#### **Colne River Valley (A4)**

- *Shallow river valley with relatively steep valleysides, which varies in width throughout its length.*
- *The meandering River Colne and its tributaries are narrow in comparison with the broad spread of the floodplain across which the river flows.*
- *River Colne is bridged by roads and lanes, which connect the north and south valley slopes, and facilitates views along the river corridor.*
- *Land use adjacent to the river is predominantly pastoral grazed by horses.*
- *The A1017 runs through the centre of the valley parallel with the river.*
- *The views are enclosed by trees and settlements.*
- *On the valley slopes the land use is predominantly arable.*

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<sup>9</sup> Braintree District Landscape Assessment, Chris Blandford Associates (2006)

### **Blackwater River Valley (A9)**

- *Shallow valley.*
- *The valley sides slope gently up from the valley floor.*
- *Predominantly arable farmland on the valley slopes.*
- *The Lower Blackwater near the confluence with the River Chelmer has gently valley slopes.*
- *Overall strong sense of place and tranquillity away from the settlements of Braintree, Witham and Maldon and the A120, A12 and the railway line.*

### **Silver End Farmland Plateau (B18)**

- *Gently undulating farmland.*
- *Irregular predominantly large arable fields marked by sinuous hedgerows.*
- *Many small woods and copses provide structure and edges in the landscape.*
- *Scattered settlement pattern, with frequent small villages.*
- *Network of narrow winding lanes.*
- *Mostly tranquil character away from the major roads.*

### **Langley Green Farmland Plateau (B19)**

- *Flat to gently sloping landform.*
- *Dominated by large arable fields.*
- *Generally gappy and fragmented field boundaries especially adjacent to roads.*
- *Settlement pattern consists of small villages with scattered farmsteads amongst predominantly arable land.*
- *The houses are predominantly modern constructed from brick.*
- *Overall strong sense of place and tranquillity away from the A120, A12 and the railway line.*

### **High Garrett/Markshall Wooded Farmland (F2)**

- *Flat to gently undulating landform.*
- *Strong pattern of large and small woods, including distinctive ancient lime woods.*
- *Regular medium to large arable fields, bounded by low well trimmed thick hedgerows and some mature hedgerow trees.*
- *Open to enclosed character depending on density of woodlands.*
- *Many small farmsteads and occasional villages.*
- *Several Halls and estates.*

## **Townscape Character Areas**

- 3.3.11 The following Townscape Character Areas<sup>10</sup> in Colchester are inter-visible with, or are immediately adjacent to, the Site (see **Figure 3.6**):

### **F1 - Villa Road**

- 3.3.12 *'This area of predominantly semi-detached, two-storey housing lining Villa Road which is a busy vehicular route. Residential properties have small front gardens, which provide varying habitats for wildlife, and are approximately post-war in date. Shops and a library at the northern end of the area contribute to a relatively busy character. Although views to the north and south along Villa Road are generally enclosed by housing which faces the road, in places views to the east across playing fields and west, across farmland, can be gained.'*

### **H1 - Queensbury Avenue: Copford**

- 3.3.13 *'This area of post-1960s housing dates approximately to the late 1980s/early 1990s. The area has a relatively tranquil feel with semi-detached and detached houses set out along a number of quiet dead-end roads leading off Queensbury Avenue (set back from the main London Road). There is consistency in materials and detailing, with most houses having private front gardens and drives. The area overlooks playing fields to the west and a belt of woodland to the north.'*

### **H2 - Lucy Lane**

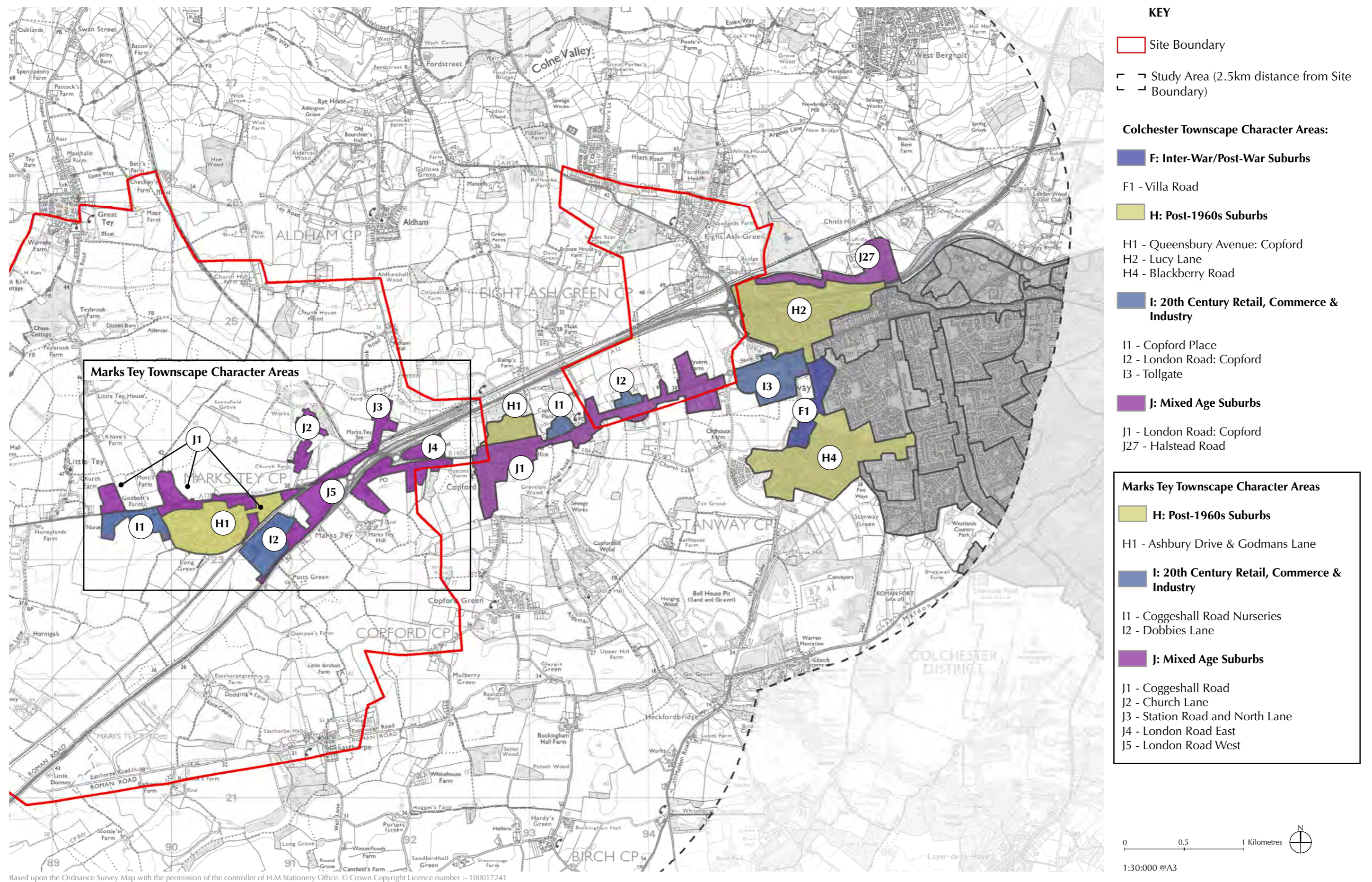
- 3.3.14 *'This large area of post-1960s suburban housing is situated at the north western edge of urban Colchester, overlooking open countryside to the west and partly contained by the main railway line to the north. The area is split into northern and southern suburbs by the A12 (dual carriageway) which brings associated noise and disturbance. Housing is situated in close proximity to farmland plateau to the west (but is separated by a slip-road to the A12).'*

### **H4 - Blackberry Road**

- 3.3.15 *'This suburb of post-1960s housing is situated at the south western edge of Colchester urban area, overlooking abandoned gravel pits to the west. A new housing development is currently under construction to the west, within the Stanway Pit area. A large belt of open playing fields separates the area from housing to the north. The area overlooks open countryside to the south and west. Generally, there is little diversity in streetscape, with utilitarian paving and lighting.'*

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<sup>10</sup> Townscape Character Assessments of Colchester, Tiptree, West Mersea and Wivenhoe , Chris Blandford Associates (2006)



*Housing is predominantly two-storey and comprises a mixture of detached and semidetached buildings. Cul-de-sacs and avenues have a quieter character than the main Blackberry Road.'*

#### **I1 - Copford Place**

- 3.3.16 *'This relatively small commercial and retail area lines the former main road to London (London Road), which connects Copford and Stanway (in the west) to Colchester (in the east). The area contains a few small shops and services for the village, which are accessed from London Road. Some buildings face the road, whilst others are slightly set back.'*

#### **I2 - London Road: Copford**

- 3.3.17 *'This area contains a large garden centre (Wyevale) and associated car park. A public house is also located in the southwestern corner of the site. Vegetation lines the southern edge of the area and separates the garden centre and car park from London Road (adjacent to the south).'*

#### **I3 – Tollgate**

- 3.3.18 *'This Character Area encompasses several large retail units (including electrical and furniture warehouses) and a large superstore (Sainsbury's). The area is split into two sites, Tollgate East and Tollgate West, which are separated by Tollgate Road. Buildings are generally large pre-fabricated warehouse units, built from a combination of brick and corrugated iron/metal. Buildings are surrounded by large tarmac car parks, containing utilitarian lighting and street furniture and small pockets of planting (shrubs and bushes). There is generally little visual interest, however a range of different signs associated with different retail units provides colour and some variation in character.'*

#### **J1 - London Road: Copford**

- 3.3.19 *'This area encompasses buildings that have developed from several different architectural ages along the line of the main London Road, running through the villages of Stanway and Copford, to the west of Colchester and east of Marks Tey. Copford has a relatively mixed character with a jumble of businesses lining London Road, adjacent to post-1960s bungalows and other residential properties. Stanway has a traditional 'village' character with a village green, which is overlooked by shops and a post office.'*

## **J27 - Halstead Road**

- 3.3.20 *'This relatively small area of mixed age suburbs lines Halstead Road, which is at the northwestern edge of Colchester's urban area, in close proximity to Eight Ash Green. Properties within this area have developed along the line of Halstead Road and generally face the road, with several detached houses. The streetscape is varied, with visual interest provided by vegetation within small front gardens. The area has a generally quiet and fairly secluded character.'*
- 3.3.21 The following Townscape Character Areas in Marks Tey are inter-visible with, or are immediately adjacent to, the Site (**Figure 3.6**):

## **H1 - Ashbury Drive & Godmans Lane**

- 3.3.22 *'This large area of post-1960s housing is situated at the western end of Marks Tey, to the south of London Road and north of the A12/railway corridor. Buildings are set out in a curvilinear street pattern and consists of a combination of detached and semi-detached housing, which is predominantly built of grey or yellow brick. Most houses have front gardens and drives, with generally a clear definition between public and private space. Character is generally secluded, with views across open countryside from Wilson's Lane, which runs along the southern edge of the area.'*

## **I1 - Coggeshall Road Nurseries**

- 3.3.23 *'This Character Area encompasses a relatively large group of nursery buildings at the western end of Marks Tey, which have a colourful and lively character. A large car park is associated with the buildings, and colourful signage welcomes visitors to stop. The area is situated directly off the main road corridor and views across open farmland can be gained to the north and south, giving an overall sense of space.'*

## **I2 – Dobbies Lane**

- 3.3.24 *'This Character Area encompasses a group of relatively large commercial and warehouse units (including timber yard) and works to the north of the A12 and south of the railway corridor. Overall character is harsh, although surrounding vegetation does soften the built form.'*

## **J1 - Coggeshall Road**

- 3.3.25 *'This Character Area encompasses buildings, which have developed along the line of Coggeshall Road (the main road which connects Marks Tey to London Road and Colchester to the east and open countryside to the west). Built form consists of a mixture of architectural styles and ages, from Victorian to post-1960s. Mott's Farm (and associated buildings along Mott's Lane) has also been included within this Character Area. Street pattern is linear, with lanes leading off Coggeshall Road to the north and south. There is variety in plot sizes and proportions, however most properties face the road corridor. Belts of mature vegetation provide some sense of enclosure along the northern side of Coggeshall Road; however, views across open farmland plateau and the tower of St. Andrews Church can be gained to the north.'*

## **J2 - Church Lane**

- 3.3.26 *'This Character Area is separate from the main area of development along Coggeshall Road and encompasses a relatively distinctive arrangement of buildings, which are centred on St. Andrews Church (towards the northern end of Church Lane). Church Lane is relatively narrow and has a kink in layout halfway along the route, which allows a surprise view of the church which is set back from the road and adjacent buildings. A small group of buildings associated with quarry works dominate the character of the northern end of Church Lane.'*

## **J3 - Station Road and North Lane**

- 3.3.27 *'This Character Area encompasses a mixture of post-war and post-1960s bungalows and houses that line North Lane, to the north of the railway line and station. Marks Tey junction (containing the railway station, associated utility buildings and car parking) dominates the Character Area at the southern end of North Lane. Brightly coloured signage (associated with the nurseries opposite Marks Tey roundabout also) influences the mixed character of this area. Views across open fields can be gained from the northern edge of this area, however to the south, character is dominated by roundabouts, the railway line and roads.'*

## **J4 - London Road East**

- 3.3.28 *'This Character Area comprises development to the south of the A12 railway corridor along the northern and southern sides of London Road. Character is generally fragmented and chaotic, with a mixture of building styles, ages and uses. Some recognisable sense of place is provided by views to farmland to the south of the railway corridor.'*

## J5 - London Road West

- 3.3.29 *'The character of this area is dominated by the Parish Recreation Hall and associated large open playing fields. A row of semi-detached, mixed aged houses line the road, which is immediately parallel to the A12. There is little sense of separation between houses and the road corridor, with small patches of vegetation in places and a mixture of front walls, although the houses do not actually line the A12, and are accessed via a parallel, dead-end road. Character is generally fragmented and incoherent.'*

### Landscape Designations

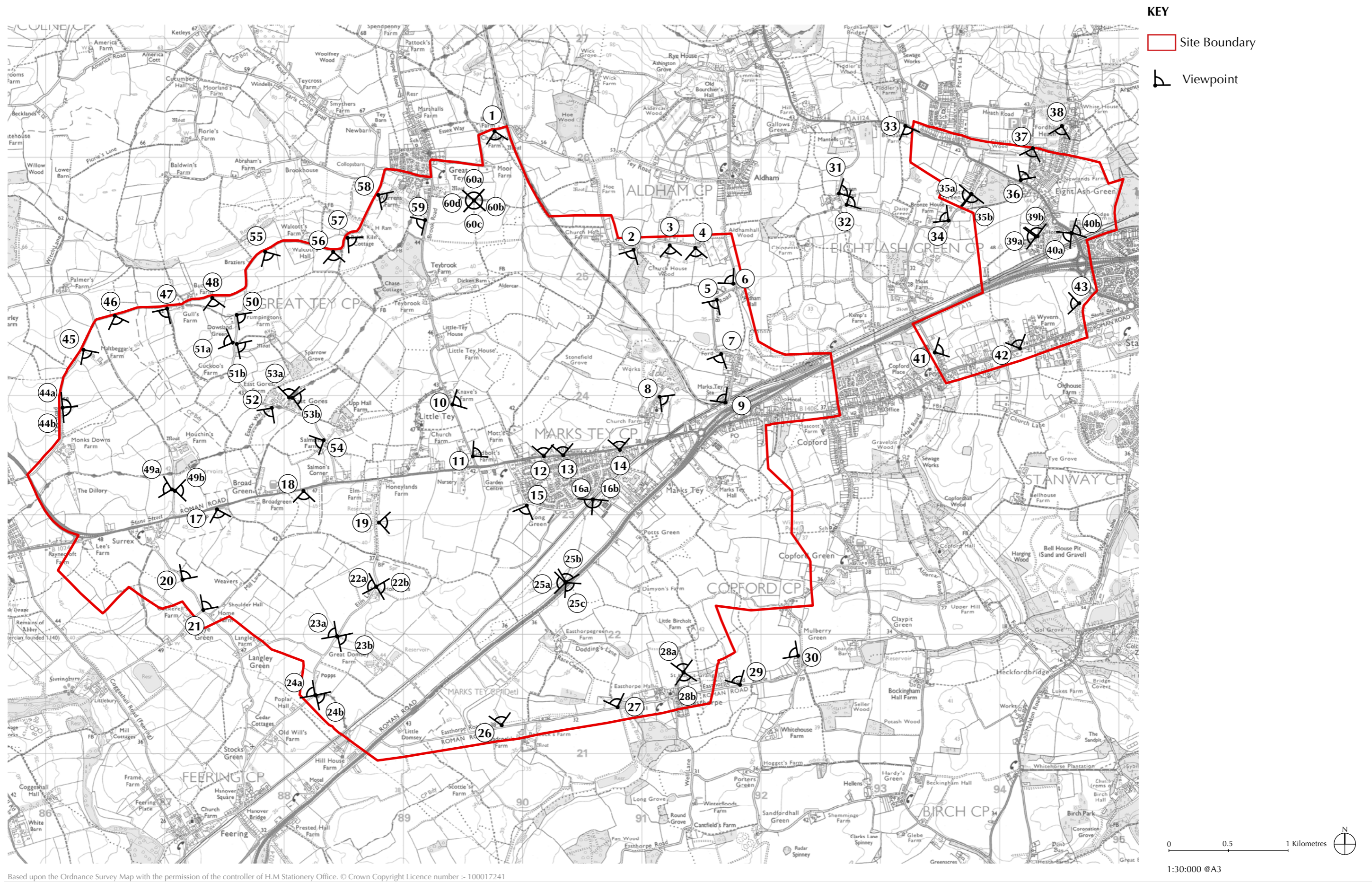
- 3.3.30 There are no landscape designations within the Study Area.

### Visual Amenity

- 3.3.31 Field work was undertaken to validate the Zone of Theoretical Visibility (ZTV) mapping (see **Figure 3.1**). This has established that the actual Zone of Visual Influence (or visual envelope) of the Site is considerably more limited than the ZTV suggests.
- 3.3.32 An appraisal of the Study Area's visual amenity has been made following fieldwork and reference to 1:10,000 and 1:25,000 scale Ordnance Survey maps of the area. In addition, a series of colour photographs have been taken from viewpoints within the Site that are representative of views accessible to the public (see **Figure 3.7**).
- 3.3.33 All photographs were taken in September 2015 and their locations are indicated on **Figure 3.7**. It should be noted that the screening effect of vegetation will be diminished during winter when deciduous vegetation is not in leaf. The photographs are presented on **Figure 3.8** and described below:

### Viewpoint 1

- 3.3.34 Viewpoint 1 shows a long distance view southwards from approximately 1km to the north of the site boundary from the road at Checkley's Farm. The view shows the typically partial screening of views towards the south by the varied trees, hedgerows and woodland found along the field boundaries within the site, and demonstrates the small change in topography which adds to the limitation of visibility of the site from this direction, giving only distant, glimpsed views of the site itself.





VP 1



VP 2



VP 3



VP 4



VP 5



VP 6



VP 7



VP 8



VP 9



VP 10



VP 11



VP 12



VP 13



VP 14



VP 15



VP 16a



VP 16b



VP 17



VP 18



VP 19



VP 20



VP 21



VP 22a



VP 22b



VP 23a



VP 23b



VP 24a



VP 24b



VP 25a



VP 25b



VP 25c



VP 26



VP 27



VP 28a



VP 28b



VP 29



VP 30



VP 31



VP 32



VP 33



VP 34



VP 35a



VP 35b



VP 36



VP 37



VP 38



VP 39a



VP 39b



VP 40a



VP 40b



VP 41



VP 42



VP 43



VP 44a



VP 44b



VP 45



VP 46



VP 47



VP 48



VP 49a



VP 49b



VP 50



VP 51a



VP 51b



VP 52



VP 53a



VP 53b



VP 54



VP 55



VP 56



VP 57



VP 58



VP 59



VP 60a



VP 60b



VP 60c



VP 60d

### **Viewpoints 2, 3 and 4**

- 3.3.35 Viewpoints 2, 3 and 4 show views south from Rectory Road, a lane within the northern edge of the site. The views are across the immediate fields only, truncated by the hedgerows and trees that make up field boundaries and provide screening, obscuring long distance views.

### **Viewpoint 5**

- 3.3.36 Viewpoint 5 shows a view south across arable fields toward the northern edge of Marks Tey and the station. There are glimpses of the northern-most properties, indicating some, albeit limited intervisibility. The view shows the screening of views by the trees, hedgerows and woodland, which limits the visibility of Mark's Tey itself, even where the rising topography would otherwise allow intervisibility.

### **Viewpoint 6**

- 3.3.37 Viewpoint 6 shows a view northwest across the northern part of the site. The view shows the trees and high hedgerows that typically provide screening across the site, giving only occasional glimpsed views into the fields beyond.

### **Viewpoint 7**

- 3.3.38 Viewpoint 7 shows a view southwest across fields towards the railway. The views are across the immediate fields only, truncated by the hedgerows and trees that make up field boundaries and provide screening, obscuring very long distance views.

### **Viewpoint 8**

- 3.3.39 Viewpoint 8 shows a view southeast across paddocks that lie between the railway and properties to the north west of the A12 junction. The view is very short in range due to the presence of trees and buildings, which provide dense screening between the properties and the railway.

### **Viewpoint 9**

- 3.3.40 Viewpoint 9 shows a view north from Marks Tey station. The slightly elevated ground gives glimpsed views of the arable fields beyond between the trees and hedgerows, though the views to the east are more truncated by the presence of tall and mature vegetation along the railway.

### **Viewpoint 10**

- 3.3.41 Viewpoint 10 shows a view eastwards across the farmland to the north of Marks Tey from Great Tey Road. The view is more open than others typical of this area, as the hedgerows are broken in nature and the views are therefore more extensive. The view to the southeast is more truncated by increased presence of vegetation on the northern side of Marks Tey main residential area. The limited change in topography limits long distance views.

### **Viewpoint 11**

- 3.3.42 Viewpoint 11 shows a view eastwards across the farmland to the north of Marks Tey from Great Tey Road. The view is limited to the immediate field parcel by the presence of high hedgerows and trees along the northern edge of Marks Tey, with some glimpsed views of the adjacent properties.

### **Viewpoints 12, 13 and 14**

- 3.3.43 Viewpoints 12, 13 and 14 all show views northwards from the A120 which runs along the northern edge of the main residential area in Marks Tey. The views show visibility across the immediate field parcels as the screening immediately adjacent to the road is limited. From viewpoint 14, St. Andrews Church, and some of the properties on Church Lane (about 400m to the north west) are also partially visible. As such, some properties on this road will have similar views, though long distance views are limited by the lack of change in topography and presence of some vegetated field boundaries.

### **Viewpoint 15**

- 3.3.44 Viewpoint 15 shows a view south from the southern edge of the main residential area in Marks Tey, looking towards the railway. The view is limited to the immediate field parcel, which is medium to large in size, but truncated at the field boundary due to the presence of high hedgerows and trees, and limited change in topography.

### **Viewpoint 16a**

- 3.3.45 Viewpoint 16a is an elevated view from the pedestrian footbridge across the railway, looking west across the southern edge of the main Marks Tey residential area. The view shows the presence of hedges and trees within the landscape that limit long distance views, and also the screening by trees and hedges along the settlement edge.

### **Viewpoint 16b**

- 3.3.46 Viewpoint 16b is a slightly elevated view from the pedestrian footbridge across the railway, looking southwest along the railway line. The view shows the scattered presence of hedges and trees along the railway line that provide some screening and the screening provided by vegetated field boundaries that limits long distance views.

### **Viewpoints 17 and 18**

- 3.3.47 Viewpoints 17 and 18 show views southwards from the A120 which runs along the northern edge of the main residential area in Marks Tey to Coggeshall. The views show visibility across the immediate field parcels, with some longer distance views where the topography falls towards the south, though these are limited by the presence of vegetated field boundaries.

### **Viewpoints 19, 20, 21, 22a, 22b, 23a, 23b, 24a and 24b**

- 3.3.48 Viewpoints 19, 20, 21, 22a, 22b, 23a, 23b, 24a and 24b show views typical of those across the farmland to the south of the A120. The views show visibility across the immediate large field parcels, with some glimpsed views of the fields beyond where the vegetation that makes up the field boundaries is broken or less dense. Longer distance views are limited by the lack of change in topography.

### **Viewpoints 25a and 25b**

- 3.3.49 Viewpoints 25a and 25b show views northwards from the A12. The views show visibility across the immediate field parcels, with some glimpsed views of buildings between the railway line and A12 to the south of Marks Tey. Some of the infrastructure of the railway line is also visible, but views beyond this are limited by the presence of vegetation in the landscape.

### **Viewpoint 25c**

- 3.3.50 Viewpoint 25c shows a glimpsed view south across arable fields from the A12. Opportunities for views southwards are limited due to the presence of high and dense vegetation along the A12, and the speed of traffic. Where they do occur, the views, like this one, are predominantly of the immediate field parcel and limited by vegetated field boundaries and limited change in topography.

### **Viewpoint 26**

- 3.3.51 Viewpoint 26 shows an open view north across arable fields from Easthorpe Road. The view shows visibility across the immediate large field parcel, truncated by vegetated field boundaries and woodland towards the railway.

### **Viewpoint 27**

- 3.3.52 Viewpoint 27 shows a view northwest across smaller field near Easthorpe Hall. The view shows visibility across the immediate field parcel, truncated where field boundaries are made up of trees and dense hedgerows. Some views to fields beyond are possible.

### **Viewpoint 28a**

- 3.3.53 Viewpoint 28a shows an open view north across large arable fields from a public footpath north of Easthorpe. The view shows visibility across the immediate large field parcel, which is then broken by vegetated field boundaries and woodland. Some longer distance views are possible between the vegetation.

### **Viewpoint 28b**

- 3.3.54 Viewpoint 28b shows a view south from a public right of way across properties in Easthorpe. There are some glimpsed views between buildings and vegetation to fields beyond, but very long distance views are not possible due to the limited change in topography.

### **Viewpoints 29 and 30**

- 3.3.55 Viewpoints 29 and 30 show views to the north west from Easthorpe Road, to the east of Easthorpe. The views show visibility across the immediate large field parcels and demonstrate the presence of vegetated field boundaries and limited change in topography.

### **Viewpoints 31, 32 and 33**

- 3.3.56 Viewpoints 31 and 32 show views to the east and south towards Seven Star Green. The views show visibility across the immediate large field parcels and demonstrate the presence of mature trees and dense field boundaries which provide screening.

### **Viewpoint 34**

- 3.3.57 Viewpoint 28b shows a view across a residential property near Seven Star Green. Views are quite enclosed, with buildings and trees in the landscape.

### **Viewpoint 35a**

- 3.3.58 Viewpoint 35a shows a view across fields near Seven Star Green. Views are quite enclosed across smaller fields, with tall trees and hedgerows providing screening.

### **Viewpoint 35b**

- 3.3.59 Viewpoint 35b shows a view through the woodland between Seven Star Green and Eight Ash Green. Views are very enclosed.

### **Viewpoint 36**

- 3.3.60 Viewpoint 36 shows a view across fields and the western edge of Eight Ash Green (looking towards viewpoint 37). Views are open across the smaller field parcel, and some of the properties in the west of the village are visible between the mature vegetation that grows along the settlement edge.

### **Viewpoint 37**

- 3.3.61 Viewpoint 37 shows a glimpsed view between properties to the south of Fordham Heath across the field towards the new development at Jubilee Meadow. There is intervisibility between these two residential areas and the farmland, but views further to the south and west are limited by the presence of woodland.

### **Viewpoint 38**

- 3.3.62 Viewpoint 38 shows a view south from the car park at Fordham Heath towards the site, and demonstrates the presence of mature vegetation in the landscape that limits intervisibility.

### **Viewpoints 39a and 39b**

- 3.3.63 Viewpoints 39a and 39b show views looking west from the south western edge of Eight Ash Green, across fields currently used as paddocks. Long distance views are limited by the

presence of vegetated field boundaries, but there is some intervisibility with the properties in Jubilee Meadow.

#### **Viewpoint 40a**

- 3.3.64 Viewpoint 40a shows a view across a small field between the south of Eight Ash Green and the railway. Views are enclosed due to the presence of densely vegetated field boundaries, though some glimpses of the railway infrastructure and the roofline of the adjacent hotel are possible.

#### **Viewpoint 40b**

- 3.3.65 Viewpoint 40b shows a view across properties to the south of Eight Ash Green. Views are very enclosed due to the presence of woodland and changing topography.

#### **Viewpoint 41**

- 3.3.66 Viewpoint 41 shows a view looking west across the large fields between the A12 and London Road. The views are open, but long distance views are limited by the changing topography and presence of densely vegetated field boundaries.

#### **Viewpoint 42**

- 3.3.67 Viewpoint 42 shows a glimpsed view between residential property and hedges, northwards across the fields looking towards the A12 from London Road. The views are open, but long distance views are limited by the changing topography and presence of trees and dense planting along the A12.

#### **Viewpoint 43**

- 3.3.68 Viewpoint 43 shows a long, open view from the new commercial development to the south of the A12 junction. The slight elevation gives a long distance view, but views are still limited by the high density of trees and vegetation in the landscape beyond the immediate, large field parcels.

#### **Viewpoint 44a**

- 3.3.69 Viewpoint 44a shows a view across field looking towards Maltbeggar's Farm, where some of the buildings are visible between the trees and hedgerows. Views to fieldparcels beyond are screened by the large amount of vegetation in the landscape.

### **Viewpoint 44b**

- 3.3.70 Viewpoint 44b shows a long distance view across multiple field parcels towards the A120, where a cluster of properties are visible. The view shows a landscape that is well treed, with intermittent hedgerows. The long views are facilitated by gently falling topography to the south.

### **Viewpoint 45**

- 3.3.71 Viewpoint 45 from the entrance to Maltbeggar's Farm, looks southeast across a large, open field, past the farm buildings. Some glimpsed views of the fields beyond are possible between the trees, and due to falling topography. Houchin's Farm (moated property) can be glimpsed behind the tall trees in the centre of the view.

### **Viewpoint 46**

- 3.3.72 Viewpoint 46 shows a long, open view southwards from Buckley's Lane, across large arable fields, and topography that gradually falls towards the A120, before rising again in the far distance. The view shows visibility across the immediate large field parcel, which is then broken by vegetated field boundaries and scattered woodland, though which buildings along the A120 and beyond can be glimpsed.

### **Viewpoints 47 and 48**

- 3.3.73 Viewpoints 47 and 48 are typical of views looking southwards from the plateau on which Buckley Lane runs, across relatively flat fields, with heavily vegetated field boundaries. Views beyond the immediate field parcel are very limited due to the screening hedgerows.

### **Viewpoints 49a and 49b**

- 3.3.74 Viewpoints 49 a and 49b look west and east respectively from Houchin's Lane, across the medium to large scale arable fields that are typical of those lying to the north of the A120. There is little change in topography, and the predominantly well vegetated field boundaries and numerous trees in the landscape create screening, providing only glimpsed views of the field parcels beyond.

### **Viewpoint 50**

- 3.3.75 Viewpoint 50 looks southeast from East Gores Road towards Trumpingtons Farm. Heavily vegetated field boundaries limit views, though it is possible to glimpse some of the properties at East Gores Farm between the trees.

### **Viewpoint 51a**

- 3.3.76 Viewpoint 51a looks northwest from East Gores Road across the medium to large scale arable fields typical of this part of the Site. There is little change in topography, and the predominantly well vegetated field boundaries and numerous trees in the landscape create screening, providing glimpsed views of the field parcels beyond.

### **Viewpoint 51b**

- 3.3.77 Viewpoint 51b looks southeast from the entrance to Trumpingtons Farm, across an arable field with densely vegetated boundaries, as is typical of much of the Site. Some of the buildings at the farm are visible above the hedgerows.

### **Viewpoint 52**

- 3.3.78 Viewpoint 52 shows a view looking southwest along the Essex Way promoted route. The large arable field parcel is typical of those within this part of the Site, with relatively little change in topography, and heavily vegetated field boundaries. Views beyond the immediate field parcel are very limited due to the screening hedgerows.

### **Viewpoint 53a**

- 3.3.79 Viewpoint 53a looks from the Essex Way promoted route across a field parcel that is smaller than those typical of much of the Site. The field boundaries are densely vegetated, giving only glimpsed views into adjacent fields.

### **Viewpoint 53b**

- 3.3.80 Viewpoint 53b looks southeast from the Essex Way promoted route, across fields towards Upp Hall Farm, where large agricultural sheds and silos are visible. Vegetated field boundaries provide some screening.

#### **Viewpoint 54**

- 3.3.81 Viewpoint 54 shows a view looking west across a large arable field parcel. Views beyond the immediate field parcel are limited by relatively little change in topography, and heavily vegetated field boundaries.

#### **Viewpoint 55**

- 3.3.82 Viewpoint 55, on Coggeshall Road, demonstrates limited visibility looking southwards across the arable fields in this area, caused by the gently rising topography.

#### **Viewpoint 56**

- 3.3.83 Viewpoint 56 is a long, open view looking southwards from Coggeshall Road near Walcotts Farm. Beyond the immediate, open field parcel, there is a large amount of screening vegetation within the landscape, above which the large agricultural buildings at Upp Hall Farm are visible.

#### **Viewpoint 57**

- 3.3.84 Viewpoint 57 is a long, open view looking south-eastwards from Coggeshall Road near Brick Kiln Cottage. Long distance views across much of the width of the view are restricted by woodland beyond the immediate field parcel, but in the southern half of the view, glimpses of fields and properties are possible looking towards Little Tey.

#### **Viewpoint 58**

- 3.3.85 Viewpoint 58 looks south-eastwards across fields to the south of Great Tey. The view is across the immediate field parcel with glimpsed views of the field beyond. Long distance views are obscured by woodland and mature vegetated field boundaries, as well as limited change in topography.

#### **Viewpoint 59**

- 3.3.86 Viewpoint 58 looks southwest from the entrance to Warrens Farm, demonstrating intervisibility with properties on Coggeshall Road above and between the vegetated field boundaries, due to the gently undulating topography.

### **Viewpoint 60a**

- 3.3.87 Viewpoint 60a is a short view across the field parcel to the north of the public footpath that runs between Great Tey and Hoe Farm. The view is across only the immediate field parcel, due to screening by densely vegetated field boundaries.

### **Viewpoints 60b, c and d**

- 3.3.88 Viewpoints 60 b, c and d show views east, south and west respectively from the public footpath that runs between Great Tey and Hoe Farm. Views to the east and west (b and d) are predominantly limited to the immediate, albeit large field parcel, due to dense vegetation in the landscape and relatively limited change in topography, with some glimpsed views of adjacent fields, particularly to the east. To the south, the falling topography gives longer views towards the A120.

## **3.4 Constraints and Opportunities**

### **Landscape/Townscape Character**

- 3.4.1 The existing landscape character of the Marks Tey part of the Site is of medium to large scale, irregular shaped, intensive, arable farmland with mature hedgerows at field boundaries which is typical of the wider landscape identified by the national, county and borough landscape assessments discussed in Section 3.3. There are also large and small woods scattered within the Site. It is also covered by many small farmsteads, hamlets and villages. The Site has a strong pattern through the fields and the network of lanes and woodland and therefore an enclosed character. However a further detailed study would need to be undertaken to ensure that the landscape character has not changed since 2005.
- 3.4.2 The landscape of the eastern part of the Site, at Eight Ash Green, can be characterised as of a mix of small regular fields with mature hedgerows at field boundaries which is typical of the wider landscape identified by the national, county and borough landscape assessments discussed in Section 3.3. There is dense woodland situated on the northern boundary of the Site. It is also covered by many small farmsteads, hamlets and villages along the roads and lanes. The Site has a strong pattern through the fields and the network of lanes and woodland and therefore an intimate enclosed character.
- 3.4.3 The principal effect of the development of the Site would be a change from a rural arable to a residential character. The degree of this change would be related to the siting, design and size

of the Site and how many of the mature hedgerows and trees would form part of the landscaping for the proposed development

- 3.4.4 The townscape in the Marks Tey area and the eastern area of the Site, at Eight Ash Green, can be characterised as being structured by the rail and road infrastructure. There is a mix of residential, commercial, superstores and warehouses covering the Site, overall of mixed ages. Some townscape character areas are secluded, some open with views across adjacent landscapes, some even harsh (infrastructure and commercial related). The pattern of the townscape varies from regular to irregular, sometimes even chaotic.
- 3.4.5 Therefore development of the Site would be unlikely to have a significant effect on the overall townscape character within the Study Area. The residential properties adjacent to the Site are of mixed age. However the majority have been built recently and therefore depending on the design of the Site, development would potentially be complementary to the surrounding townscape.

### **Landscape Designations**

- 3.4.6 There are no constraints on development of the Site from landscape designations within the Study Area.

### **Visual Amenity**

- 3.4.7 As whole, the Site generally lies within a flat to gently undulating landform. The flat plateau of the Marks Tey area is raised slightly in the northern and western part of the Site. The lower lying land in the east and south of this area is associated with watercourses. Extensive views across the majority of the Site are limited due to intervening woodland and mature and dense vegetated field boundaries. Some long distance views are possible across the Site from the higher ground within the northern part of the Site (for example Viewpoints 44b and 60c).
- 3.4.8 The eastern part of the Site, at Eight Ash Green, is raised slightly in the north western part of the Site. The lower lying land in the south west of this area is associated with watercourses. Long distance views within and to the surrounding of the Site are rare due to intervening woodland and mature and dense vegetated field boundaries. There are no inter-visibilitys between Colchester town centre and the Site.
- 3.4.9 Views into the Site are short distance from the immediately adjacent houses of the urban edge of Marks Tey, even shorter in the eastern area of the Site, at Eight Ash Green, and from the smaller settlements within the Site. The immediately adjacent properties act as a screen

creating only intermittent glimpsed views for other houses further from the Site. In addition, the majority of views within the Site are partially screened by the hedgerows and trees at the end of gardens and along field boundaries and adjacent woodland. Some isolated properties on higher ground to the north of the Site, such as those on the northern side of Coggeshall Road and Buckley Lane, may have glimpsed, long views across the Site where not screened by intervening vegetation or built structures.

- 3.4.10 To the centre of the Sites, views from and towards the A12 are very limited due to the presence of mature trees and shrubs along the trunk road. There are also some influences from the train lines which run through the site. But again, views from and towards them are very limited due to the presence of mature trees and shrubs.
- 3.4.11 Listed Buildings which are located within the Site would potentially be directly affected by development. However the magnitude of this effect would be related to the final siting and design of the development and whether the tall mature vegetation surrounding the residential property would be retained.
- 3.4.12 In addition, within the Site is a comprehensive network of Public Rights of Way and recreation grounds which provide public access to a large part of the area, including the Essex Way long distance route, which passes through fields to the north of the A120. The visual amenity of these areas would potentially be affected. However the magnitude of this effect would be related to the final siting and design of the development and whether the tall mature vegetation surrounding the footpaths and recreation grounds would be retained.

### **Landscape Capacity**

- 3.4.13 The Study into the Landscape Capacity of Settlement Fringes in Colchester Borough<sup>11</sup> assessed the land in the Marks Tey Fringes as having a moderate landscape value and moderate sensitivity. As a result, its capacity was assessed as limited. The Study concluded that this part of the Study Area has limited ability to be able to accommodate development without degradation of landscape characteristics that are of local value. The Study noted that mitigation and enhancement measures would be required in cases where some limited change is possible.
- 3.4.14 The Study also identified the land in the eastern area of the Site, at Eight Ash Green, as having a high (in the northern part) to moderate landscape value and moderate (in the northern part) to low sensitivity. As a result, its capacity was assessed as limited (in the northern part) and has

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<sup>11</sup> Landscape Capacity of Settlement Fringes in Colchester Borough (Chris Blandford Associates, 2005)

some potential in the rest of the area. The Study concluded that the northern part of this area has limited ability to be able to accommodate development without degradation of landscape characteristics that are of local value. The Study also concluded that the rest of the area has capacity to accommodate development, subject to appropriate mitigation and enhancement measures.

- 3.4.15 The Braintree District Settlement Fringe Landscape Capacity Analysis for Braintree and Environs<sup>12</sup> identifies the landscape capacity of the area around Coggeshall within the western boundary of the Site. The Study identifies the area east of Coggeshall and north of the B1024 as medium capacity, and the area east of Coggeshall and south of the B1024 is assessed as low landscape capacity to accommodate development. The Study concluded that:

*'Areas with low to medium landscape capacity or above could, in landscape and visual terms, accommodate some level of new development without significant adverse effects on the character of the landscape, providing that appropriate design and mitigation measures are put in place. Any such new development would need to be in scale with the existing settlement. This new development would need to respect the character and sensitivities of adjacent landscapes as well as the character, setting and form of the existing settlement fringe.'*

- 3.4.16 It is therefore considered desirable to safeguard this part of the Site from inappropriate development.

### **Green Gaps**

- 3.4.17 The Assessment of Open Countryside between Settlements in the Borough of Colchester<sup>13</sup> identifies the contribution provided by open countryside in maintaining the physical and visual separation (referred to informally as 'green gaps') between Colchester and adjacent settlements, including Mark's Tey and Eight Ash Green within the Study Area. The overall findings of the Study confirmed that:

*'The open countryside between settlements generally provides a high contribution to the separation of settlements. The limitations on inter-visibility (i.e. visibility between settlements) and intra-visibility (i.e. the ability to see the edges of two or more settlements from a single point in the intervening landscape) resulting from visual enclosure by landform and vegetation in the open countryside, and the strength of rural character provide a significant contribution to the actual and perceived separation of settlements in many instances. On the basis of the work carried out for this study, areas that provide a high contribution to the separation of settlements are considered to be essential in helping retain the character and identity of the Borough's key settlements, and should be safeguarded from inappropriate development. Any new built*

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<sup>12</sup> Braintree District Settlement Fringe Landscape Capacity Analysis: for Braintree and Environs (Chris Blandford Associates, November 2007)

<sup>13</sup> The Assessment of Open Countryside between Settlements in the Borough of Colchester (Chris Blandford Associates, 2009)

*development on this land is likely to seriously undermine the sense of settlement separation and the strong rural character of the land.'*

- 3.4.18 With regards to the assessment of the open countryside between Colchester and Eight Ash Green specifically, the Study concluded that:

*'Any new built development between Eight Ash Green and Colchester is likely to seriously undermine the sense of settlement separation and the rural character of the intervening land, as perceived by people moving along the A1124 or along public rights of way between Eight Ash Green and Colchester. Any such development is likely to result in visual coalescence with Colchester and/or Eight Ash Green and also visual coalescence with either the existing houses located on the northern edge of Halstead Road or the hotel and housing to the west of the A1124. This visual coalescence is likely to seriously undermine the already precarious sense of settlement separation and the predominantly rural character of this land. The sense of leaving one settlement and entering another would also be significantly diminished.'*

- 3.4.19 On the basis of this Study, all of the land assessed between Eight Ash Green and Colchester, including areas north-west of Eight Ash Green, is considered to provide a high contribution to the physical and visual separation between the settlements. The sense of separation between the settlements is achieved primarily by the visual enclosure provided by hedgerows and woodland cover and by the strength of the rural character of fields, which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard this part of the Site from inappropriate development.

- 3.4.20 With regards to the assessment of the open countryside between Copford and Mark's Tey specifically, the Study concluded that:

*'Any new built development between Copford and Mark's Tey is likely to seriously undermine the sense of settlement separation and the rural character of the intervening land, as perceived by people moving along the B1408. Any such development is likely to result in visual coalescence with Copford and/or Mark's Tey and also visual coalescence with either the existing houses located alongside the B1408. This visual coalescence is likely to seriously undermine the already precarious sense of settlement separation and the predominantly rural character of this land. The sense of leaving one settlement and entering another would also be significantly diminished.'*

- 3.4.21 On the basis of this Study, the arable fields between Copford and Mark's Tey along the B1408 are considered to provide a high contribution to the physical and visual separation between the settlements. Further south, where the distance between Copford and Mark's Tey widens, the sense of separation between the settlements is achieved primarily by the visual enclosure provided by hedgerows and woodland cover and by the strength of the rural character of fields, which prevent inter-visibility and intra-visibility between the two settlements and which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard this part of the Site from inappropriate development.

3.4.22 Adjacent to the north-western edge of Copford, there is a narrow field that has a closer visual and physical relationship with the built-up edge of Copford than with the countryside to its west. The field abuts residential properties on its eastern side, a business property on its south side, a woodland block on its north side and is divided from the arable land to the west by a hedge with occasional trees. This field provides a low contribution to settlement separation.

3.4.23 With regards to the assessment of the open countryside between Mark's Tey and Little Tey specifically, the Study concluded that:

*'There is a large amount of existing roadside development in the relatively narrow belt of land between Mark's Tey and Little Tey. As a result, this land is highly sensitive to changes that might diminish the sense of separation between settlements. Any new built development between Little Tey and Mark's Tey is likely to seriously undermine the sense of settlement separation and the rural character of the intervening land, as perceived by people moving along the A120. Any such development is likely to result in visual coalescence with Little Tey and/or Mark's Tey and also visual coalescence with either the existing buildings located alongside the A120. This visual coalescence is likely to seriously undermine the already precarious sense of settlement separation and the predominantly rural character of this land. The sense of leaving one settlement and entering another would also be significantly diminished.'*

3.4.24 On the basis of this Study, most of the land between Mark's Tey and Little Tey is considered to provide a high contribution to the physical and visual separation between the settlements. The sense of separation between the settlements is achieved primarily by the visual enclosure provided by hedgerows and woodland cover (with an exemption along the A120) and by the strength of the rural character of fields, which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard this part of the Site from inappropriate development.

3.4.25 One field on the south-western edge of Mark's Tey is considered to provide a low contribution to the physical and visual separation of settlements, having no inter-visibility with Little Tey and being bounded by residential development on two sides.

3.4.26 With regards to the assessment of the open countryside between Mark's Tey and Easthorpe specifically, the Study concluded that:

*'Any new built development, as defined, on the land identified as providing a high contribution to the separation of settlements is likely to seriously undermine the sense of settlement separation and the strong rural character of this farmland. In spite of the visual enclosure provided by field boundary hedgerows and blocks of woodland, new development would result in a reduction in rural character of the land and a diminished sense of leaving one settlement and entering another for people travelling along the public footpaths between the settlements.'*

*'One parcel of land between the southern edge of Mark's Tey and the A12, identified as providing a medium contribution to the separation of settlements, has some potential to*

*accommodate new built development without significantly diminishing the sense of separation between the settlements or the rurality of the remaining undeveloped land. This land parcel is located adjacent to an industrial site and opposite a petrol station on the A12, which separates the land from the wider belt of countryside to the south.'*

*'One parcel of land on the southern edge of Mark's Tey, identified as providing a low contribution to the separation of settlements, has the most potential in relative terms to accommodate new built development, as the land is under a strong urban influence and is already partly developed as a vehicle storage area.'*

- 3.4.27 On the basis of this Study, most of the land between Mark's Tey and Easthorpe is considered to provide a high contribution to the physical and visual separation between the settlements. The sense of separation between the settlements is achieved due to distances between the villages and by the visual enclosure provided by hedgerows and woodland cover and by the strength of the rural character of fields, which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard this part of the Site from inappropriate development.
- 3.4.28 At the western end of Mark's Tey, arable fields on either side of Dobbies Lane is considered to provide a contribution to separation between the two settlements. However, large scale buildings are located adjacent to an industrial site and a petrol station on the opposite side of the A12. Consequently, they appear more as an extension of the adjacent settlement rather than isolated features in the countryside. In this context, these fields and their associated greenhouses are considered to have no more than a medium contribution to the sense of separation between Mark's Tey and Easthorpe.
- 3.4.29 There is an area of hardstanding extending southeast from Mark's Tey, south of the intersection of the A12 and A120, that has a predominantly urban fringe character and makes a low contribution to the sense of separation between the settlements. The adjacent field is enclosed by built development on three sides and also makes only a low contribution to the separation of settlements.
- 3.4.30 In addition to the green gaps identified by the Study, it is considered desirable to safeguard land to the south of Great Tey and land to the east of Coggeshall from development, to provide green gaps between these settlements and future development within the Site.

#### **Further Work Recommendations**

- 3.4.31 The following further studies/surveys are recommended to inform the masterplanning, environmental assessment and mitigation for development on the Site:

- A detailed visual impact assessment should be carried out from key locations during winter and summer to assess impact of development proposals on sensitive receptors in and around the Site as appropriate.
- A detailed landscape character assessment of the Study Area should be undertaken to inform assessment of potential landscape impacts and detailed mitigation measures.
- A detailed age and condition tree survey is required to inform the masterplanning process, by setting out the required distance between retained trees and development as defined by British Standard BS 5837:2012.

### **3.5 Summary**

- 3.5.1 The Environmental Audit has demonstrated that development would change the character of the Site from a rural arable landscape to a residential dominated landscape, and change the nature of views within the Site. The degree of this change would depend on the scale of development and the extent to which mature hedgerows and trees are retained as part of the structural landscape framework for the Site.
- 3.5.2 The majority of land within the Site provides a high contribution to the separation of Colchester and adjacent settlements in the west, including Mark's Tey and Eight Ash Green, which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard these parts of the Site from inappropriate development, including land to the south of Great Tey, and land to the east of Coggeshall.
- 3.5.3 In recognition of the Site's high to moderate value and sensitivity in most areas, care is needed through site masterplanning and design to mitigate potential adverse impacts on the adjacent townscape or wider landscape. In particular, care should be taken to avoid loss of the woodlands and hedgerows/field boundaries that form screening elements in views from the edge of the Marks Tey area and the eastern area of the Site, at Eight Ash Green, and smaller settlements within and adjacent to the Site. The existing landscape structure across the site should be retained and strengthened.

## **4.0 WATER QUALITY AND FLOOD RISK**

### **4.1 General**

- 4.1.1 This section identifies the constraints and opportunities for development of the Site in relation to ground/surface water quality and flood risk.

### **4.2 Audit Methodology**

- 4.2.1 The methodology comprises a review of the baseline conditions of surface and groundwater through a desktop study of available data. The potential issues for development of the Site with regards to the water environment are then considered.
- 4.2.2 The Study Area for the audit extends 1km around the Site.

### **4.3 Existing Conditions**

#### **Groundwater**

- 4.3.1 The Site is located on Thames Group bedrock (previously known as London Clay) – this is silty clay/mudstone, sandy silts and sandy clayey silts of marine origin. Much of the bedrock within the Marks Tey area of the Site is overlain by glacial till, with a small area of clay in the east. The superficial deposits for the Eight Ash Green area are predominantly glacial sand and gravel. The clay, silt, sand and gravel has led to the presence of a secondary aquifer beneath the majority of the Study Area.
- 4.3.2 Due to the nature of this Environmental Audit and the lack of borehole information at this stage, the extent and how deep underground the aquifer is located is not known. However due to the variable permeability of the geology, groundwater would tend to be perched in the more permeable bands and lenses and may be encountered close to the surface.
- 4.3.3 The nearest groundwater protection zones are to the east of Kelvedon (to the south west of the Site), and along the River Colne corridor at Fordstreet and West Bergholt (to the north of the Site). There is also one in the centre of Colchester. These groundwater protection zones are delineated by the Environment Agency to protect groundwater sources of public water supply.

## Surface Water

- 4.3.4 As shown of **Figure 3.2**, a number of watercourses run through or close to the Site. Roman River runs west-east through the northern part of the Site, to the north of Marks Tey. To the east of the Site, the river runs south east and then east, before joining the River Colne to the south of Wivenhoe. In the south of the Site, to the west of Easthorpe, is Domsey Brook, which runs south west from the Site, and joins the River Blackwater to the east of Kelvedon.
- 4.3.5 In addition, there are a number of ditches and small streams located across the Site, and several small ponds and reservoirs scattered across the area. The reservoirs are predominantly associated with farms.

## Water Quality

- 4.3.6 The Site lies within the Combined Essex Catchment of the Anglian River Basin District. Since 2009 the implementation of the Water Framework Directive has led to the provision of detailed classification information about the ecological and chemical status of UK rivers. Under the directive, the UK will have to ensure that there is no deterioration in the quality of our water bodies, and that all water bodies improve to reach 'good ecological status' as soon as possible. The current chemical and ecological status (most recent data available from 2014), and comparable status from 2009, where available, is set out in **Table 5.1**.

**Table 5.1: Summary of Water Quality Monitoring Data<sup>14</sup>**

River	Property	Date	Grade <sup>15</sup>
River Blackwater	Chemical (overall)	2009	Fail
	Chemical (overall)	2014 (Cycle 1)	Fail
	Chemical (overall)	2014 (Cycle 2)	Fail
	Ecological (overall)	2009	Poor
	Ecological (overall)	2014 (Cycle 1)	Poor
	Ecological (overall)	2014 (Cycle 2)	Moderate
Domsey Brook	Chemical (overall)	2009	N/A
	Chemical (overall)	2014 (Cycle 1)	N/A
	Chemical (overall)	2014 (Cycle 2)	Good
	Ecological (overall)	2009	Moderate
	Ecological (overall)	2014 (Cycle 1)	Poor
	Ecological (overall)	2014 (Cycle 2)	Moderate
Roman River	Chemical (overall)	2009	N/A
	Chemical (overall)	2014 (Cycle 1)	N/A
	Chemical (overall)	2014 (Cycle 2)	Good
	Ecological (overall)	2009	Moderate

<sup>14</sup> Based on available water quality monitoring data from the Environment Agency between 2009 and 2014

<sup>15</sup> Chemical status: is recorded as good or fail. A status of good means that concentrations of priority substances and priority hazardous substances do not exceed the environmental quality standards in the EQS Directive. Ecological Status: There are five classes of ecological status (high, good, moderate, poor or bad). Ecological status applies to surface water bodies and is based on the following quality elements: biological quality, general chemical and physico-chemical quality, water quality with respect to specific pollutants (synthetic and non-synthetic), and hydromorphological quality.

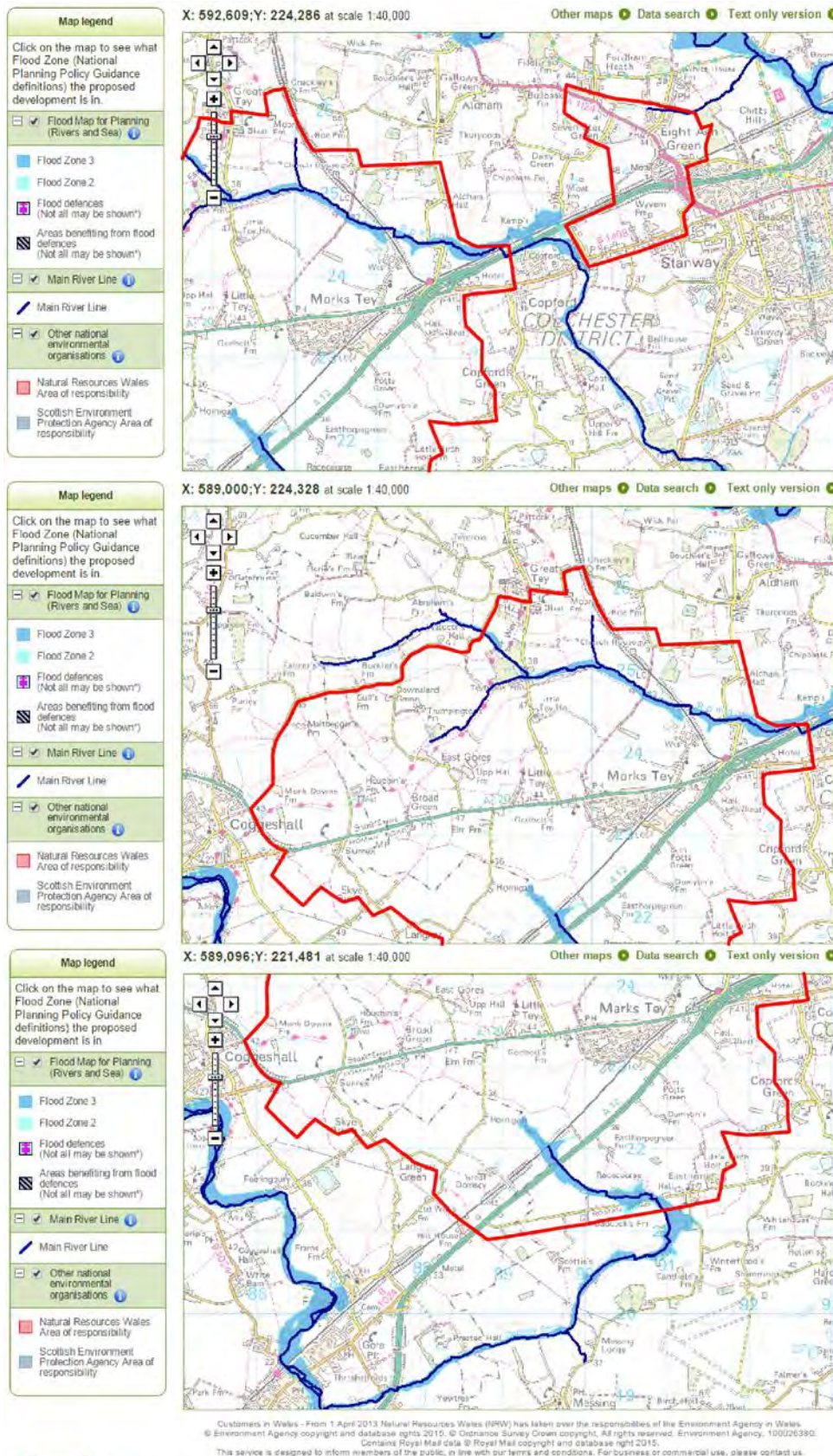
River	Property	Date	Grade <sup>15</sup>
River Colne	Ecological (overall)	2014 (Cycle 1)	Poor
	Ecological (overall)	2014 (Cycle 2)	Moderate
	Chemical (overall)	2013 (Cycle 2)	Good
	Chemical (overall)	2014 (Cycle 1)	Good
	Ecological (overall)	2013 (Cycle 2)	Moderate
	Ecological (overall)	2014 (Cycle 2)	Moderate

- 4.3.7 The results in **Table 5.1** show that the ecological quality of the River Blackwater is yet to reach the required 'Good' standard, scoring 'Poor' for phytobenthos (during the first measurement cycle of 2014). The river also has a 'Poor' score for presence of phosphates. The river fails its chemical assessment and has done so consistently since 2009 due to the presence of Tributyltin compounds.
- 4.3.8 Domsey Brook is yet to reach the required 'Good' ecological standard, due to only a 'Moderate' score for dissolved oxygen, and also gaining a 'Poor' score for phytobenthos during the first cycle of 2014. It does however have 'Good' chemical status.
- 4.3.9 The Roman River is yet to reach the required 'Good' ecological standard, gaining a 'Poor' score for phytobenthos during the first cycle of 2014. The river also has a 'Poor' score for presence of phosphates during the first measurement cycle of 2014. It does however have 'Good' chemical status.
- 4.3.10 The ecological quality of the River Colne is yet to reach the required 'Good' standard, due to only a 'Moderate' score for presence of invertebrates, the cause of which is noted to be 'unknown'. The river also has only a 'Moderate' score for quantities of dissolved inorganic nitrogen, preventing an overall score of 'Good'. It does however have 'Good' chemical status.

### Flood Zones

- 4.3.11 As shown on **Figure 4.1**, the Environment Agency's Flood Zone mapping within the Study Area includes the Roman River and Domsey Brook.
- 4.3.12 Flood Zone 3 shows the area that could be affected by flooding, if there were no flood defences. This area could be flooded: from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year; or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year.

Figure 4.1 - Environment Agency Flood Zones



- 4.3.13 Flood Zone 2 shows the additional extent of an extreme flood. The combination of Zones 2 and 3 show the extent of the natural floodplain if there were no flood defences.
- 4.3.14 Within the Site, small areas of Flood Zones 2 and 3 are associated with both the Roman River and Domsey Brook. There is also a small, unnamed stream just within the site in the north at Eight Ash Green which has some tiny areas of floodplain associated with it, but these are too small to be visible at the available map scale. The floodplain of the Roman River runs along the majority of its length where it crosses the site to the north of Marks Tey, and is over 100m wide in places. The floodplain of Domsey Brook also extends along the full length of the brook within the Site.

## **4.4 Constraints and Opportunities**

### **Pollution Effects on Groundwater Quality**

- 4.4.1 The presence of an underlying secondary aquifer beneath the Site provides the potential for contamination of groundwater through leaching of water through the ground during construction and operational activities.
- 4.4.2 During construction, certain activities such as piling could create a pathway for pollutants at the surface to reach groundwater. This could be an issue where and if ground containing elevated concentrations of contaminants were to be encountered. There would also be a risk during piling of spillage or leakage of oil or fuel or other liquid chemicals, which could reach the hole into which the pile is being sunk with a resultant risk to groundwater.
- 4.4.3 Once any future development is completed, assuming there are no proposed discharges to groundwater from the development, the risk to groundwater would be low. Where piped drainage systems are proposed there would be minimal risk of infiltration of drainage water into the ground. Where filter drains or open channels are used to convey drainage water there would be a risk of infiltration into the ground with a potential low risk of contamination to groundwater.
- 4.4.4 The groundwater protection zones are too far from the Site to be potentially significantly affected by development.

### **Pollution Effects on Surface Water Quality**

- 4.4.5 During the construction and operation of any proposed development there would be potential for debris and liquid pollutants to fall into the ditches that cross the Site that would drain into

the Roman River, Domsey Brook, other small ditches and watercourses, and subsequently into the Rivers Blackwater and Colne. There would also be a risk of release of dust into the atmosphere, some of which could be deposited in the nearby water bodies. This risk could be minimised through effective pollution control measures including the use of Sustainable Urban Drainage Systems (SUDS).

### **Flood Risk**

- 4.4.6 The overwhelming majority of the Site is located outside Flood Zones 2 and 3. The only areas within Flood Zones 2 and 3 are located immediately adjacent to the main watercourses which flow across the Site, which present a constraint to development. Through the use of SUDS and balancing ponds, the rate of discharge to the surrounding watercourses could be controlled minimising the risk of flooding downstream of the Site.

### **Further Work Recommendations**

- 4.4.7 The following further studies/investigations are recommended to inform masterplanning, environmental assessment and mitigation for development on the Site:
- A detailed study to identify the extent and type of aquifer that potentially underlies the site in order to assess potential impacts on groundwater.
  - A detailed study of the impacts on surface runoff including confirmation of the present drainage arrangements and points of discharge.
  - Confirmation of the need for detailed water quality modelling in receiving bodies in consultation with the Environment Agency.
  - Establishment of 100-year flood levels for the Site.

## **4.5 Summary**

- 4.5.1 With implementation of effective mitigation measures, no significant constraints to development of the Site are anticipated in relation to protection of ground or surface water from pollution. The floodplain of the Roman River or Domsey Brook presents a constraint to development in these areas.

## **5.0 RECOMMENDED MITIGATION MEASURES**

### **5.1 General**

- 5.1.1 The Environmental Audit provides information on the potential constraints and opportunities for development within the Site with regards to ecological, landscape/visual and water quality/flood risk considerations. This section identifies recommended mitigation measures and principles that should be considered for future masterplanning of the Site in relation to these environmental topics.
- 5.1.2 There are considerable opportunities to minimise potential adverse effects of development and provide green infrastructure benefits through the Site masterplanning process. The mitigation measures outlined below would support the objectives of the Colchester Borough Green Infrastructure Strategy for conserving and enhancing areas of existing wildlife habitat; responding to landscape character; and the conservation and enhancement of landscape assets. Strengthening the Public Rights of Way corridors through the retention and enhancement of adjacent hedgerows and vegetation belts across the Site would help provide screening for development land parcels, as well as providing habitat corridors to aid the dispersal for protected species.
- 5.1.3 It should be noted that the mitigation measures outlined below are not exhaustive; they are intended to provide broad guidance on the type of measures that are likely to be necessary in order to achieve a sustainable development on the Site.

### **5.2 Ecological Mitigation**

- 5.2.1 It is recommended that masterplanning of the Site should seek to:
- Retain and safeguard important habitats and areas, including those identified in Section 2.3 above.
  - Buffer sensitive habitats, such as woodland and wetland, from any proposed development using strips of undeveloped land between the relevant habitats and proposed development.
  - Retain wide green corridors, for example building upon the existing hedgerow network, especially where this includes mature trees, within and through developed areas, and linking other retained (and created) areas of habitat, both within and outside any development.
  - Retain mature trees (including or especially those in hedgerows), within any proposed development, preferably as part of wider areas of semi-natural habitat or green corridors.

- Enhance retained habitats by appropriate positive management, such as coppicing, grazing etc..
- Create new areas of habitat, such as woodland, scrub, grassland and wetland, including ponds, targeted especially adjacent to or between retained existing habitats in order to expand and link them, thus making them more resilient.
- Retain and enhance (through habitat creation and management) habitat links to the wider landscape, for example to the valleys or corridors of the River Blackwater (e.g. along the Domsey Brook corridor), Roman River (especially to the south east) and River Colne (to the north).

5.2.2 During the design of the development it would be advisable to include the retention of habitats and protected species wherever possible. The habitats of greatest nature conservation importance within the Site are the:

- woodlands, especially Ancient/probable Ancient Woodland (Church House Wood LWS (TN34) and Stonefield Strip LWS (TN27));
- hedgerow network, especially where this is in relatively good condition, well connected and where it includes mature trees;
- more species-rich grassland, such as that at Seven Star Green LWS (TN50);
- wetland habitats, including the Roman River and Domsey Brook and associated marsh/marshy grassland, pond and swamp; and
- traditional orchards, such as those at TN35, TN36 and TN47.

5.2.3 Other habitats, such as the species-poor grassland, ruderal and arable are of less importance, although locally they may have significance for some species, such reptiles and skylark.

5.2.4 Based on the distribution of habitats within the Site the most important areas are considered to be:

- the Domsey Brook corridor, including the associated marsh/marshy grassland pond/swamp, hedgerows and woodland/plantation; and
- the Roman River corridor, including adjoining grassland and hedgerows (e.g. TN37), nearby Church House Wood Ancient Woodland and LWS (TN34) and Stonefield Strip LWS (TN27), other small wooded areas (e.g. TN 26) and traditional orchards (TN35 and TN36) and Marks Tey Pit SSSI and LWS (TN29).

5.2.5 The cluster of habitats in the Seven Star Green area, including Choats Wood (TN49), the grassland of Seven Star Green LWS (TN50) and the (derelict?) traditional orchard with scrub and grassland (TN47) is also of importance.

### **5.3 Landscape and Visual Mitigation**

- 5.3.1 Consideration should be given to retaining key landscape features within the Site through the masterplanning process. These would include the field hedgerows, mature trees and the woodland copses. Ancient woodland should also be protected wherever possible. In addition to providing benefits for ecology and nature conservation, the retention of these landscape features would help screen development from the existing residential properties in settlements surrounding the edge of the Site, as well as maintaining the existing views. Where there are gaps in hedgerows, new planting with native species would help enhance the existing hedgerows and strengthen screening.
- 5.3.2 Where access and other infrastructure is required to cross an existing hedgerow, consideration should be given to using existing gaps and weaknesses in the hedgerows wherever possible. Mature hedgerows and hedgerow trees are not easy to recreate and their removal should be avoided as far as possible. There is also the opportunity to screen key views from the existing public rights of way that cross the Site by enhancing hedgerows along footpaths.
- 5.3.3 In addition, careful consideration should be given to the design and siting of street lighting to reduce the night-time visual impact of development on the surrounding countryside.

### **5.4 Water Quality and Flood Risk Mitigation**

- 5.4.1 There is the opportunity to provide protection for the water quality of surrounding water bodies and the secondary aquifer located beneath the Site through incorporation of Sustainable Urban Drainage Systems (SUDS) into the Site layout, and also through the use of pollution prevention systems to control the risk of contamination to groundwater and surface water.
- 5.4.2 Development should avoid being located within the floodplains of the Roman River and Domsey Brook (Flood Zones 2 and 3). If development is required to be located in the floodplains, flood storage compensation measures would be required to minimise changes to the capacity of the floodplain and therefore minimise the risk of downstream flooding.

## **6.0 SUMMARY AND CONCLUSIONS**

### **6.1 General**

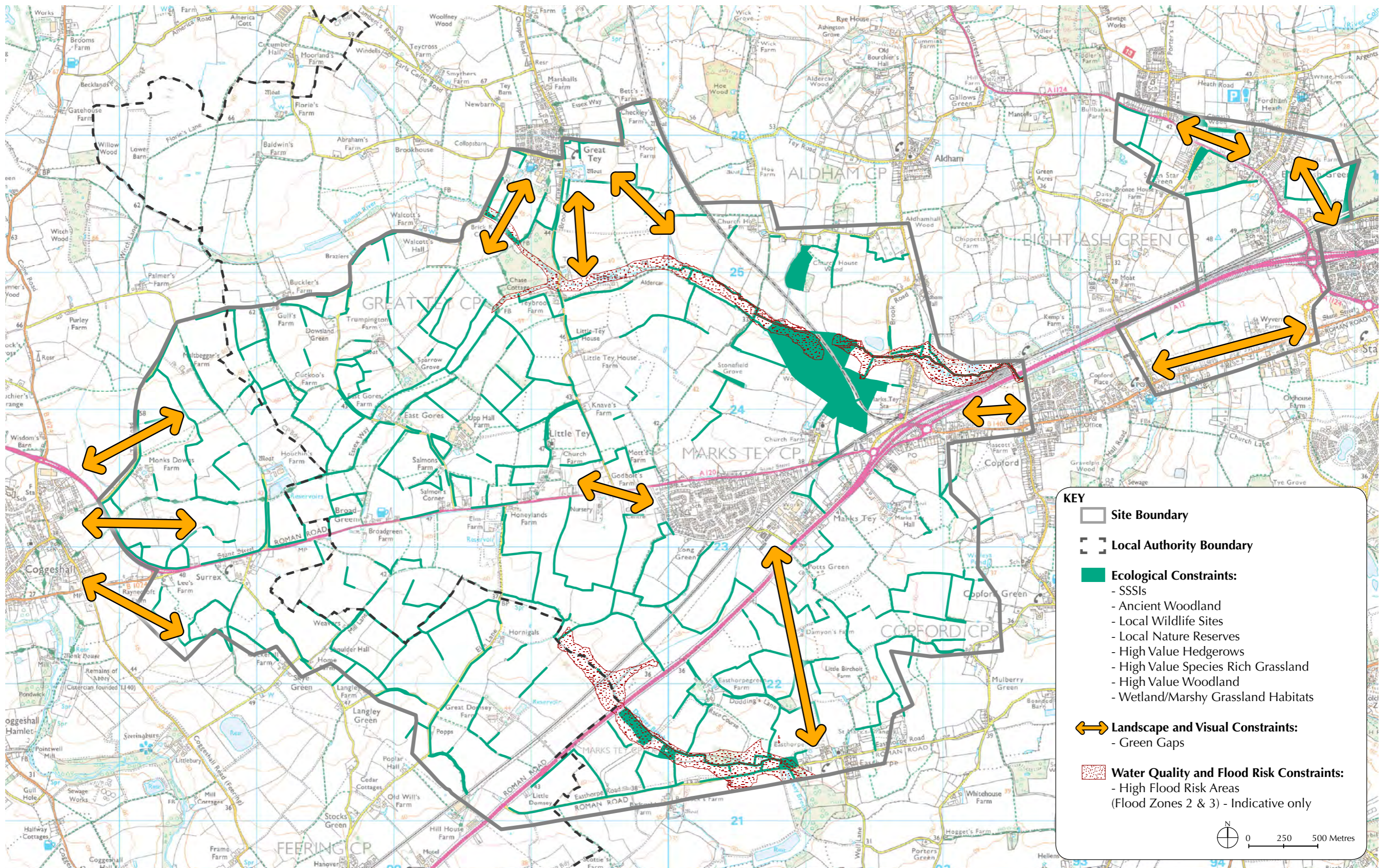
- 6.1.1 The key findings and conclusions of the Environmental Audit are summarised in this section, and the key areas of constraint are set out in **Figure 6.1**.

### **6.2 Ecology and Nature Conservation**

- 6.2.1 Much of the Site consists of arable fields set within a more or less intact hedgerow network, which includes mature and veteran trees. There are concentrations of important habitat along and adjoining the corridors of the Domsey Brook and Roman River, as well as around Seven Star Green, and it is recommended that habitats in these areas in particular are retained and enhanced in relation to any potential or proposed development within the Site. The Site also has the potential to support a number of protected species and other species of conservation importance and more detailed surveys will be required for these, as appropriate, in relation to any proposed development.

### **6.3 Landscape and Visual Amenity**

- 6.3.1 The Environmental Audit has demonstrated that development would change the character of the Site from a rural arable landscape to a residential dominated landscape, and change the nature of views within the Site. The degree of this change would depend on the scale of development and the extent to which mature hedgerows and trees are retained as part of the structural landscape framework for the Site.
- 6.3.2 The majority of land within the Site provides a high contribution to the separation of Colchester and adjacent settlements in the west, including Mark's Tey and Eight Ash Green, which is essential in helping retain the character and identity of these settlements. It is therefore considered desirable to safeguard these parts of the Site from inappropriate development, including land to the south of Great Tey, and land to the east of Coggeshall.
- 6.3.3 In recognition of the Site's high to moderate value and sensitivity in most areas, care is needed through site masterplanning and design to mitigate potential adverse impacts on the adjacent townscape or wider landscape. In particular, care should be taken to avoid loss of the woodlands and hedgerows/field boundaries that form screening elements in views from the edge of the Marks Tey area and the eastern area of the Site, at Eight Ash Green, and smaller



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settlements within and adjacent to the Site. The existing landscape structure across the site should be retained and strengthened.

## **6.4 Water Quality and Drainage**

- 6.4.1 With implementation of effective mitigation measures, no significant constraints to development of the Site are anticipated in relation to protection of ground or surface water from pollution. The floodplain of the Roman River or Domsey Brook presents a constraint to development in these areas.

## **6.5 Overall Conclusions**

- 6.5.1 In accordance with the Council's requirements, this Environmental Audit has provided a preliminary appraisal of the constraints and opportunities for development of the Site in respect of the following environmental considerations:
- Ecology and Nature Conservation.
  - Landscape/Townscape Character and Visual Amenity.
  - Water Quality and Flood Risk.
- 6.5.2 Within the scope of this Environmental Audit, no constraints have been identified that would at this stage preclude further consideration of the Site as a potential growth area (assuming that the recommended mitigation measures are implemented and the further surveys/studies undertaken).
- 6.5.3 Other environmental considerations may present constraints to development on the Site, such as cultural heritage and agricultural land use. These have not been considered in the scope of this Environmental Audit, and may need to be taken into account in determining the suitability of the Site for development.



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