

Cambridge Waste Water Treatment Plant Relocation Project  
Anglian Water Services Limited

# Environmental Statement Appendix 3.4: Stage 3 Site Selection Report - Fine Screening Appendices C, D, E

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# **CWWTPR Project - Stage 3 Fine Screening**

Landscape and Visual Amenity Appraisal

July 2020

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# 1 Introduction

The purpose of this document is to provide a high-level landscape appraisal of the landscape sensitivities associated with the site selection study for the relocation of the Cambridge Wastewater Treatment Plant (WWTP) in order to make the land currently occupied available for housing development. The relocation is currently in the early planning stages and a study area has been identified for investigating potential suitable sites. This study area, defined during the Initial Options Appraisal (Mott MacDonald, 2020), constitutes the combined drainage catchment area of the current Cambridge and Waterbeach WWTPs.

This document includes investigations on:

- Landscape designations;
- Landscape character;
- Topography; and
- Potential visibility from key receptors, including occupiers of residential properties orientated towards the development, walkers whose attention is focused on a landscape of moderate quality and visitors to heritage assets and designated or protected views (a full list of receptors is provided in Section 3).

An overview of the Landscape Context is provided to outline the sensitivities, opportunities and constraints within the landscape, and an overview of the visual amenity to highlight the potential impacts upon local receptors.

The landscape context and visual amenity have been undertaken using a methodology that follows current best practice and guidance from:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA), 3rd Edition: Landscape Institute and Institute of Environmental Management and Assessment (2013).

The final section of the document provides a series of recommendations to further inform the design of the WWTP sites and provide a scheme that reflects the local landscape character and minimises the impact upon local visual receptors.

## 2 Landscape Context

### 2.1 Landscape Character

#### 2.1.1 National Character Assessments

The study area is located across two National Character Area (NCA) 88: Bedford and Cambridgeshire Claylands and NCA 46 The Fens. However, all the sites being assessed are located within NCA 88 Bedford and Cambridgeshire Claylands, with the exception of Site L, which is located within NCA 46 The Fens.

#### **NCA 88: Bedford and Cambridgeshire Claylands**

The Bedford and Cambridgeshire Claylands National Character Area (NCA) is a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach The Fens NCA in the east. Within it, but distinct from it, is the Bedfordshire Greensand Ridge, a contrasting narrow and elevated outcrop of Greensand, with its associated habitats on acidic soils such as grassland, heathland and woodland. Views of the Bedfordshire and Cambridgeshire Claylands NCA and its large-scale arable farmland can be seen in most directions, from the elevated ground of the Yardley Whittlewood Ridge, Bedfordshire Greensand Ridge, East Anglian Chalk and Chilterns NCAs.

The NCA partially hosts several internationally and nationally important sites for nature conservation: the Nene Washes, the Ouse Washes and Woodwalton Fen – three Ramsar sites, two Special Protection Areas (SPA) and five Special Areas of Conservation (SAC) that straddle the boundary with The Fens NCA, providing ecological and functional connectivity between these NCAs.

The key characteristics of the NCA include:

- Gently undulating, lowland plateau divided by shallow river valleys that gradually widen as they approach The Fens NCA in the east.
- Predominantly open, arable landscape of planned and regular fields bounded by open ditches and trimmed, often species-poor hedgerows which contrast with those fields that are irregular and piecemeal.
- Wide variety of semi-natural habitats supporting a range of species - some notably rare and scarce - including sites designated for species associated with ancient woodland, wetland sites important for birds, great crested newt and species of stonewort, and traditional orchards and unimproved grassland supporting a rich diversity of wild flowers.
- Diversity of building materials including brick, render, thatch and stone.
- Settlements cluster around major road and rail corridors, with smaller towns, villages and linear settlements widely dispersed throughout, giving a more rural feel. Small villages are usually nucleated around a church or village green, while fen-edge villages are often in a linear form along roads.
- Major transport routes cross the area, including the M1, M11, A1, A6, A5 and A14 roads, the East Coast and Midlands mainline railways, and the Grand Union Canal.

## NCA 46 The Fens

The Fens National Character Area (NCA) is a distinctive, historic and human-influenced wetland landscape lying to the west of the Wash estuary, which formerly constituted the largest wetland area in England. The area is notable for its large-scale, flat, open landscape with extensive vistas to level horizons. The level, open topography shapes the impression of huge skies which convey a strong sense of place, tranquillity and inspiration.

It is a large, low-lying, flat landscape with many drainage ditches, dykes and rivers that slowly drain towards the Wash, England's largest tidal estuary. The single obvious factor uniting the Fens is the low-lying, level terrain reflecting its geological past. With the exception of the Isle of Ely, which reaches above 20 m, elevations rarely pass the 10 m contour. The level horizons and the huge scale of the landscape create a strong sense of isolation and tranquillity, and a distinctive sense of place. There are, typically, large open panoramas and enormous skies, whose changing weather patterns have a strong influence on the observer.

The key characteristics of the NCA include:

- Overall, woodland cover is sparse, notably a few small woodland blocks, occasional avenues alongside roads, isolated field trees and shelterbelts of poplar, willow and occasionally leylandii hedges around farmsteads, and numerous orchards around Wisbech. Various alders, notably grey alder, are also used in shelterbelts and roadside avenues.
- The predominant land use is arable - wheat, root crops, bulbs, vegetables and market gardening made possible by actively draining reclaimed land areas. Associated horticultural glasshouses are a significant feature. Beef cattle graze narrow enclosures along the banks of rivers and dykes and on parts of the salt marsh and sea banks.
- Open fields, bounded by a network of drains and the distinctive hierarchy of rivers (some embanked), have a strong influence on the geometric/rectilinear landscape pattern. The structures create local enclosure and a slightly raised landform, which is mirrored in the road network that largely follows the edges of the system of large fields. The drains and ditches are also an important ecological network important for invertebrates, fish including spined loach, and macrophytes.
- The area is very rich in geodiversity and archaeology, with sediments containing evidence for past environmental and climate changes and with high potential for well-preserved waterlogged site remains at the fen edge, within some of the infilled palaeo-rivers and beneath the peat.
- Settlements and isolated farmsteads are mostly located on the modestly elevated 'geological islands' and the low, sinuous roddon banks (infilled ancient watercourses within fens). Elsewhere, villages tend to be dispersed ribbon settlements along the main arterial routes through the settled fens, and scattered farms remain as relics of earlier agricultural settlements. Domestic architecture mostly dates from after 1750 and comprises a mix of late Georgian-style brick houses and 20th-century bungalows.

### 2.1.2 Local character assessments

The study area is located across two Landscape Character Areas (LCA), described in the Cambridgeshire Landscape Guidelines (Cambridgeshire County Council, 1991); LCA3 Western Claylands and LCA8 Fenlands. The below description provides an overview of the LCA taken from the Cambridgeshire Landscape Guidelines, with a greater level of detail provided following a desktop appraisal of the study area.

LCA3 Western Claylands extends from the north and east edges of Cambridge northeast to the southern edge of Peterborough, albeit subdivided by LCA4 Ouse Valley which follows the River Great Ouse from St Neots through to Huntingdon and St Ives.

It consists of large-scale arable farmland with open fields, sparse trimmed hedgerows and watercourses often cleared of bankside vegetation. There are scattered woodlands and approximately half of these are ancient semi-natural woodlands of considerable importance in the County context. Increased mechanisation has led to the removal of hedgerows and amalgamation of fields. Many of the remaining hedges are 'gappy' and trimmed almost out of existence by regular cutting. Larger farm units have created a need for large storage buildings, which can be prominent in the landscape. Small villages and hamlets are scattered throughout the area, usually in sheltered places with existing trees. Small grass paddocks typically occur on the edges of the villages. Church spires and towers enliven the skyline.

At a local level the LCA includes the settlements of Cottenham, Histon, Impington, Milton, Landbeach and Waterbeach. Histon, Impington and Milton lie adjacent to the edge of Cambridge, separated by the A14, albeit they feel like extensions of the city.

In contrast to the apparent gradual evolution of Histon, Impington and Cottenham recognisable in the spread and layout of housing, Milton and Waterbeach have expanded more rapidly from the 1980s onwards. The barracks and airfield contribute to the character of this part of the LCA.

Land between the villages comprises flat open agricultural farmland that reflects the edge of fenland location. Fields are medium in size with occasional gappy hedgerows and farms dotted across the landscape.

Overall, due to its fair condition, medium tranquillity and moderate susceptibility to change, this area is of medium sensitivity.

LCA8 Fenland extends south and east from Peterborough to Ely and south from Ely to the eastern edge of Cambridge.

Fenland is a landscape of contrasts and variety. Superimposed upon the regimented and highly organised drainage patterns is a much more haphazard pattern of settlement and tree cover. It is a large open landscape and although appearing monotonous, it is in fact characterised by continuous change as the visual characteristics of one fen merge into the next. The open landscape provides distant views where the scattering of clumps and individual trees merge together to produce a feeling of a more densely tree-covered horizon.

There are many 'islands' which rise above the flat ocean of the fens. These range in size from the dominant Isle of Ely which rises over 20m above the adjacent peat fens, to much smaller features which are elevated an almost imperceptible metre or two. These islands are significant in the landscape: most are occupied by settlements or farmsteads which, with their associated tree cover, gives them special prominence.

In the expansive open landscape isolated agricultural buildings, farmsteads and loose-knit villages are often prominent against a background of a constantly changing sky.

At a local level, located between the A10 and River Cam, the LCA is dominated by medium to large flat open arable fields, separated by dykes and occasional hedgerows. Isolated farms and properties are located off roads crossing the study area.

Overall, due to its fair condition, medium tranquillity and moderate susceptibility to change, this area is of medium sensitivity.

All of the proposal sites are located within LCA3 Western Claylands and, therefore, are located within an area of medium sensitivity. As such, it is not possible to differentiate between the sites based on the sensitivity of the landscape character.

## 2.2 Statutory Designations

### 2.2.1 Conservation Areas

There are eight conservation areas within the study area, as listed below. Their descriptions are informed by the relevant conservation area appraisals that have been completed to date:

#### **Cottenham**

No conservation area appraisal has been completed to date.

#### **Histon**

No conservation area appraisal has been completed to date.

#### **Horningsea**

The conservation area encompasses the majority of the village, with the exception of the Priory Estate. The southern part of the village has cottages and public houses, many at right angles to the road with boundary fences, railings and long walls. The character changes at the northern end of the village where fine gault brick walls surrounding the large farms define the road to the west, with farm buildings and fences lining the road to the east.

The generally linear nature of the village (especially at the south end) means that glimpses out into open countryside can often be gained. This feeling of openness within the village is emphasised by the green on the east side, whilst its trees combine with those around the Vicarage and contribute much to the quality of the street scene.

#### **Landbeach**

No conservation area appraisal has been completed to date.

#### **Oakington**

The Conservation Area retains a nucleus of tight-knit historic buildings grouped mostly around the church and the High Street. The rural character of the village is maintained by a number of features comprising: the large area of paddocks in the centre of the village, views out into the surrounding countryside. Trees are very important to the character of the village and there are some significant groups around the rectory and church, on Mill Road and the High Street.

The conservation area is located to the northwest of Water Lane, up to the High Street, encompassing the northern edge of the High Street.

## **Rampton**

The main focus of the conservation area is its historical interest and townscape character. The village had a very limited growth up to the World War Two, meaning most houses predate it. The historic core includes a Saxon church from C12 and a motte castle which overlies part of an earlier medieval settlement.

The conservation area runs across mid High Street, around the Green, up to the end of Cow Street. Most historical buildings are situated around the Green where the agricultural character of the village survives.

## **St Andrew's Impington**

No conservation area appraisal has been completed to date.

## **Waterbeach**

No conservation area appraisal has been completed to date.

## **Westwick**

The majority of buildings in Westwick were built between 1850 and 1939 with only two buildings constructed since World War Two. Westwick Hall is the dominant building in hierarchical terms. Trees and hedgerows that line the road and the old railway track are intrinsic to the character of the village. They form definite boundaries and act as a foil to the built forms. The parkland and views out across agricultural land are essential to the village and give it an essentially rural feel. The original Medieval settlement, together with the site of one of the original village manors, survive as earthworks within the grassland to the north and south of the road, and are clearly visible, albeit in private ownership.

The conservation area is focused on development either side of Oakington Road, east of the guided bus route.

### **2.2.2 Scheduled Monuments**

The following scheduled monuments are in the study area:

- Multi-phased settlement east of Milton.
- Moated site 140m south west of Histon Manor.
- Giant's Hill: a motte castle with part of an earlier medieval settlement and associated field system.
- Cottenham moated site.
- Length of Car Dyke between Green End and Top Moor.
- Denny Abbey.
- Romano-British Settlement at Chittering, Cambs.
- Waterbeach Abbey (site of).
- Car Dyke.

### 2.2.3 Sites of Special Scientific Interest (SSSI)

There is one SSSI within the study area, listed below, that is partially within the study area. The description is informed by Natural England:

#### Cam Washes

Cam Washes is the only SSSI situated, non-exclusively, within our study area, in the Cambridgeshire fens. It runs along the banks of the River Cam in eastern Cambridgeshire, between the junction with the River Great Ouse in the north and Commissioner's Farm in the south. Cam Washes are a series of low lying pastures which are subject to seasonal flooding. This seasonal flooding, coupled with a range of grassland structure from damp short grassland to wet tussocky fields, with associated pools, ditches and river margins, together with relative freedom from disturbance makes this an important site for numbers and diversity of wintering and breeding wildfowl and waders. Associated areas of scrub and scattered trees further enhance the value of the area for birds. Although some of the grassland has been agriculturally improved much of the area retains a useful floristic diversity and one small relatively dry field is included largely on floristic grounds.

## 2.3 Non-statutory Designations

### 2.3.1 Green Belt

The Cambridge Green Belt was created in 1954. Its purposes, as set out in the Cambridge Local Plan 2006, are to:

- Preserve the unique character of Cambridge as a compact, dynamic city with a thriving historic centre.
- Maintain and enhance the quality of its setting.

Prevent communities in the environs of Cambridge from merging into one another and with the City.

## 2.4 Topography

It is generally low-lying ground, with altitude dropping toward the north-east of the study area. The area of study encompasses the settlements of Milton, Histon, Impington, Waterbeach, Cottenham, Horningsea, Fen Ditton and Chittering.

## 3 Visual Amenity

### 3.1 Key Viewpoints

There is the potential for views across the study area for all site options. However, the number and sensitivity of views varies across the options.

The sensitivity of these visual receptors was evaluated by considering the value attached to specific views and the susceptibility of visual receptor to changes to views and visual amenity. The value attached to a view could derive from a planning designation or an association with a heritage asset. The susceptibility to change depends on the occupation or activity of the receptor and the extent to which their attention is focused on the view and visual amenity.

The evaluation of sensitivity was based on the criteria set out in the table below:

**Table 3.1: Visual receptor sensitivity**

Receptor	Sensitivity
Occupiers of residential properties orientated towards the development. Walkers and visitors to heritage assets whose attention is focused on a landscape of recognised high quality. Designated or protected views. Views from a recognised high quality landscape such as a National Park or an AONB.	High
People travelling along scenic roads through the landscape. Walkers and visitors to heritage assets whose attention is focused on a landscape of moderate quality. People walking along residential streets. Occupiers of residential properties with oblique views of the development.	Medium
People at work and in educational institutions. People engaged in formal sports activities. People walking through urban areas (for example commuters). People on main roads or railways whose attention is not focused on the landscape (such as commuters).	Low

For the purpose of the landscape appraisal, Zone of Theoretical Visibility (ZTV) plans were used to determine which receptors might be affected by the proposals (see Appendix A). The below table provides a description of each receptor, their location, sensitivity and distance from the Proposed Scheme (all site options have been considered). The receptors chosen may be representative of more than one individual location and have been selected from a desktop survey. A field survey should be undertaken to determine the precise impacts upon receptors, However, it is considered that this is not required at this stage of assessment.

**Table 3.2: Residential visual receptors – Site A**

Receptor	Sensitivity	Distance
Viewpoint (VP)1 Residents in properties on Iram Drove, looking south.	High	0.8km
VP2 - Residents in properties on Cow Lane, looking west.	High	0.4km
VP3 - Residents in properties on High Street, Rampton looking north.	High	0.4km



**Table 3.3: Residential visual receptors – Site B**

Receptor	Sensitivity	Distance
VP4 - Residents in properties on Rampton Road looking southwest.	High	0.4km
VP5 - Residents in properties on Stirling Road and Heron Road Lane, looking northeast.	High	0.7km
VP6 - Residents in New Farm looking east.	High	0.8km

**Table 3.4: Residential visual receptors – Site C**

Receptor	Sensitivity	Distance
VP7 - Residents in properties on Rampton Road looking southwest.	High	0.5km
VP8 - Residents in properties on Rampton Road and off Oakington Road, Cottenham looking southwest.	High	0.4km
VP9 - Residents in properties on Histon Road looking west.	High	1km
VP10 - Residents of Cuckoo Hill Farm looking northeast.	High	0.5km

**Table 3.5: Residential visual receptors – Site H**

Receptor	Sensitivity	Distance
VP11 - Residents in properties on Cottenham Road, Histon looking east.	High	0.9km
VP12 - Residents in properties on Histon Road, Cottenham looking southeast.	High	0.8km
VP13 - Residents of Rectory Farm Barns looking west.	High	0.9km
VP14 - Residents of Oldfield Farm Barn looking west.	High	0.6km
VP15 - Residents of Bedlam Farm looking northwest.	High	0.9km
VP16 - Residents of Mill Lane Farm looking north.	High	0.3km

**Table 3.6: Residential visual receptors – Site I**

Receptor	Sensitivity	Distance
VP17 - Residents of Bedlam Farm looking east.	High	0.8km
VP18 - Residents of Oldfield Farm Barn looking southeast.	High	0.9km
VP19 - Residents of Middle Farm looking south.	High	0.8km
VP20 - Residents of Oldfield Farm looking south.	High	0.4km
VP21 - Residents of Rectory Farm looking west.	High	0.4km
VP22 - Residents in properties on Milton Road looking north.	High	0.5km

**Table 3.7: Residential visual receptors – Site J**

Receptor	Sensitivity	Distance
VP23 - Residents of Fieldstead Farm looking east.	High	0.5km
VP24 - Residents of Greengates Farm looking south.	High	0.4km

**Table 3.8: Residential visual receptors – Site L**

Receptor	Sensitivity	Distance
VP25 - Residents of High St, Horningsea looking south.	High	0.8km

Receptor	Sensitivity	Distance
VP26 - Residents of Horningsea Road, Fen Ditton looking northeast.	High	0.5km
VP27 - Residents of High Ditch Road, Fen Ditton looking north.	High	0.8km

**Table 3.9: Commerical visual receptors – Site J**

Receptor	Sensitivity	Distance
VP28 – Workers at Cambridge Science Park looking north	Medium	0.6km

**Table 3.10: PRoW visual receptors – Site A**

Receptor	Sensitivity	Distance
VP29 – Users of Bridleway 262/7 looking southeast towards the site.	Medium	0.4km
VP30 - Users of Byway 262/8 looking southeast towards the site.	Medium	0.2km
VP31 - Users of Byway 262/9 looking south towards the site.	Medium	0.7km
VP32 – Users of Bridleway 189/7 looking southeast towards the site.	Medium	0.9km
VP33 - Users of Footpath 189/6 looking north.	Medium	0km
VP34 - Users of Footpath 189/3 looking north.	Medium	0.7km
VP35 – Users of Byway 189/2 looking northeast towards the site.	Medium	0.5km

**Table 3.11: PRoW visual receptors – Site B**

Receptor	Sensitivity	Distance
VP36 – Users of Bridleway 151/12 looking north towards the site.	Medium	0.3km
VP37 – Users of Bridleway 189/8 looking south towards the site.	Medium	0km
VP38 - Users of Byway 189/2 looking west towards the site.	Medium	0.4km
VP39 - Users of Footpath 189/6 looking west towards the site.	Medium	0.8km
VP40 - Users of Footpath 56/5 looking northwest towards the site.	Medium	0.8km
VP41 - Users of Byway 189/5 looking north west towards the site.	Medium	0.5km
VP42 - Users of Byway 189/4 looking north west towards the site.	Medium	0.5km
VP43 – Users of Bridleway 151/13 looking north towards the site.	Medium	0.6km
VP44 - Users of Byway 151/7 looking north towards the site.	Medium	0.6km

**Table 3.12: PRoW visual receptors – Site C**

Receptor	Sensitivity	Distance
VP45 - Users of Footpath 56/5 looking southeast towards the site.	Medium	0.8km

Receptor	Sensitivity	Distance
VP46 - Users of Footpath 189/6 looking southeast towards the site.	Medium	0.9km
VP47 - Users of Footpath 56/4 looking southeast towards the site.	Medium	0.8km
VP48 – Users of Bridleway 56/14 looking south towards the site.	Medium	0.6km

**Table 3.13: PRoW visual receptors – Site H**

Receptor	Sensitivity	Distance
No PRoWs within ZTV	N/A	N/A

**Table 3.14: PRoW visual receptors – Site I**

Receptor	Sensitivity	Distance
VP49 - Users of Byway 162/3 looking east towards the site.	Medium	0.1km
VP50 - Users of Byway 143/3 looking east towards the site.	Medium	0.08km

**Table 3.15: PRoW visual receptors – Site J**

Receptor	Sensitivity	Distance
VP51 - Users of Bridleway 135/6 looking north towards the site.	Medium	0.7km
VP52 - Users of Bridleway 285/1 looking north towards the site.	Medium	0.7km
VP53 - Users of Byway 162/3 looking west towards the site.	Medium	0km

**Table 3.136: PRoW visual receptors – Site L**

Receptor	Sensitivity	Distance
VP54 - Users of Footpath 85/3 looking east towards the site.	Medium	0.5km
VP55 - Users of Byway 85/5 looking east towards the site.	Medium	0.5km
VP56 - Users of Footpath 85/6 looking east towards the site.	Medium	0.7km
VP57 - Users of Footpath 85/8 looking east towards the site.	Medium	0.5km
VP58 - Users of Footpath 85/9 looking north towards the site.	Medium	0.8km
VP59 - Users of Byway 85/14 looking southwest towards the site.	Medium	0.5km
VP60 - Users of Footpath 130/1 looking east towards the site.	Medium	0.6km

## 4 RAG Assessment

The RAG categories for the landscape appraisal were defined as follows:

	Green	Amber	Red
Potential to impact landscape designations	No landscape designations within 1km of the site	Landscape designations within 500m and 1km of the site	Landscape designations within 0m and 500m
Landscape character sensitivity	Located within a landscape character area of low sensitivity	Located within a landscape character area of medium sensitivity	Located within a landscape character area of high sensitivity
Opportunity to utilise existing features for screening	Vegetation adjacent to the site boundary screening greater than 50% of the site	Vegetation adjacent to the site boundary screening up to 50% of the site	No vegetation providing screening opportunities
Visual sensitivity	Fewer than 10 receptor locations within 1km of the site.	Between 10 and 50 receptor locations within 1km of the site.	Greater than 50 receptor locations within 1km of the site.

The RAG assessment of the shortlisted sites areas is provided in Table 4.1.

**Table 4.1: RAG Assessment – All site options**

Criteria	Site A	Site B	Site C	Site H	Site I	Site J	Site L
Potential to impact statutory landscape designations	2 scheduled monuments within 1km of the site.	No landscape designations within 1km of the site.	1 scheduled monument within 1km of the site.	No landscape designations within 1km of the site.	No landscape designations within 1km of the site.	No landscape designations within 1km of the site.	No landscape designations within 1km of the site.
Landscape character sensitivity	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.	Site within an area of medium sensitivity.
Opportunity to utilise existing features for screening	No significant areas of vegetation adjacent to the site.	No significant areas of vegetation adjacent to the site.	No significant areas of vegetation adjacent to the site.	No significant areas of vegetation adjacent to the site.	No significant areas of vegetation adjacent to the site.	Significant area of vegetation running along the eastern and southern site boundaries, with additional vegetation to the east and south of the site.	No significant areas of vegetation adjacent to the site.
Visual sensitivity	Between 10 and 50 receptor locations within 1km of the site.	Between 10 and 50 receptor locations within 1km of the site.	Between 10 and 50 receptor locations within 1km of the site.	Between 10 and 50 receptor locations within 1km of the site.	Fewer than 10 receptor locations within 1km of the site.	Fewer than 10 receptor locations within 1km of the site.	Between 10 and 50 receptor locations within 1km of the site.
Summary of criteria	Medium number of visual receptors affected by this site option, located within an area of medium landscape sensitivity and within 1km of two scheduled monuments, with no existing vegetation screening the site.	Medium number of visual receptors affected by this site option, located within an area of medium landscape sensitivity, with no existing vegetation screening the site.	Medium number of visual receptors affected by this site option, located within an area of medium landscape sensitivity and within 1km of a scheduled monument, with no existing vegetation screening the site.	Medium number of visual receptors affected by this site option, located within an area of medium landscape sensitivity, with no existing vegetation screening the site.	Few visual receptors affected by this site option, located within an area of medium landscape sensitivity, with no existing vegetation screening the site.	Few visual receptors affected by this site option, located within an area of medium landscape sensitivity, with existing vegetation partially screening the site.	Medium number of visual receptors affected by this site option, located within an area of medium landscape sensitivity, with no existing vegetation screening the site.

## 5 Recommendations

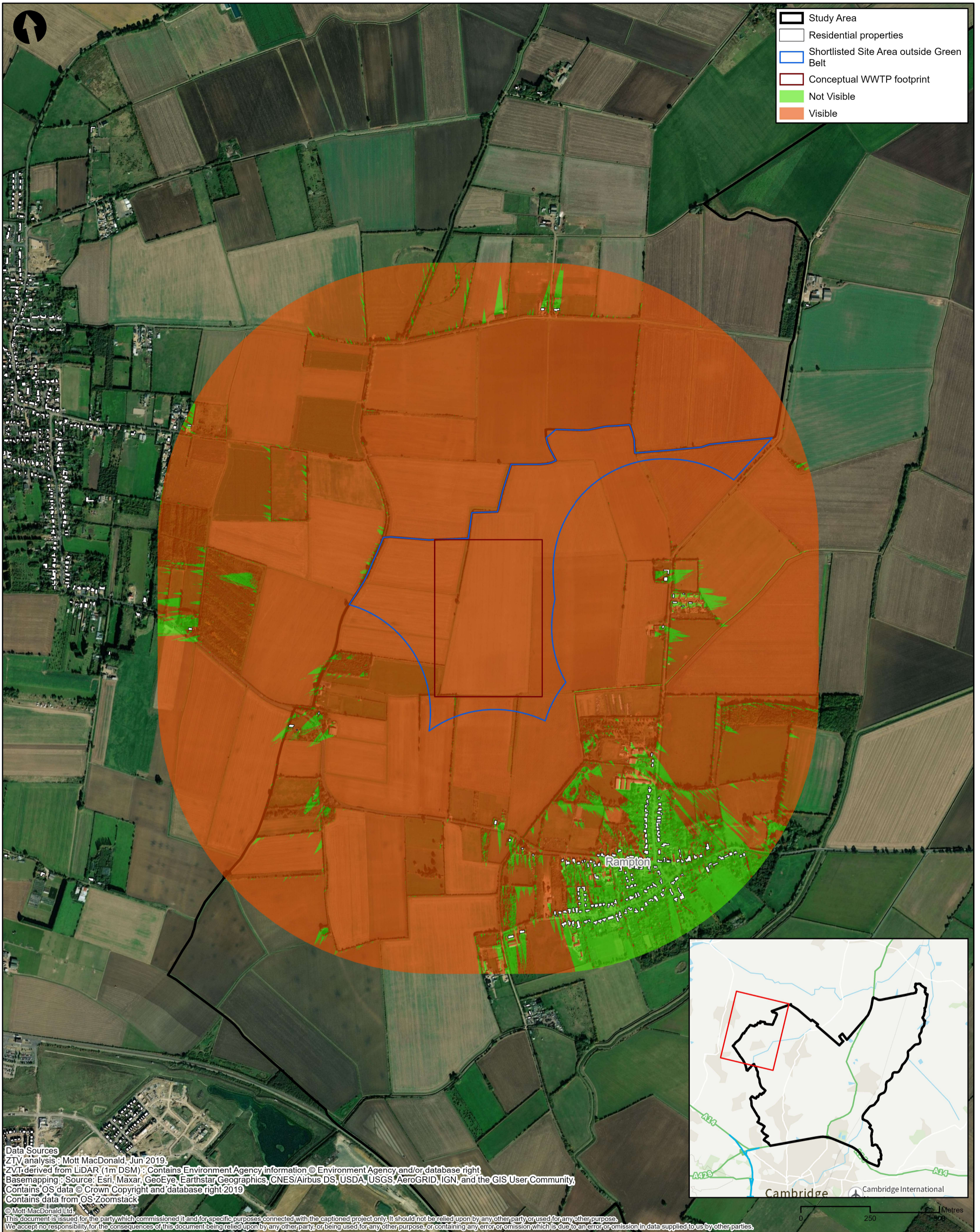
Based on the initial landscape and visual amenity appraisal and assessment of the design guidance highlighted within this report, the following recommendations and additional requirements are set out. It should be noted that these may change following consultation with the Local Planning Authority.

- Once a frozen layout for the WWTP has been identified a full Landscape and Visual Impact Assessment (LVIA) should be undertaken.
- Liaise with the engineering and environmental team to develop a WWTP that considers the environmental constraints e.g. important landscape and heritage features, drainage constraints, protected species etc. and responds accordingly.
- Focus design development on minimising visual impact on properties in the wider landscape.
- Develop a landscape design that respects the local landscape character, whilst minimising visual impact of the proposals.
- Prepare an outline Landscape Management Plan to achieve landscape objectives and approach to delivery, maintenance, management and monitoring.



# Appendices

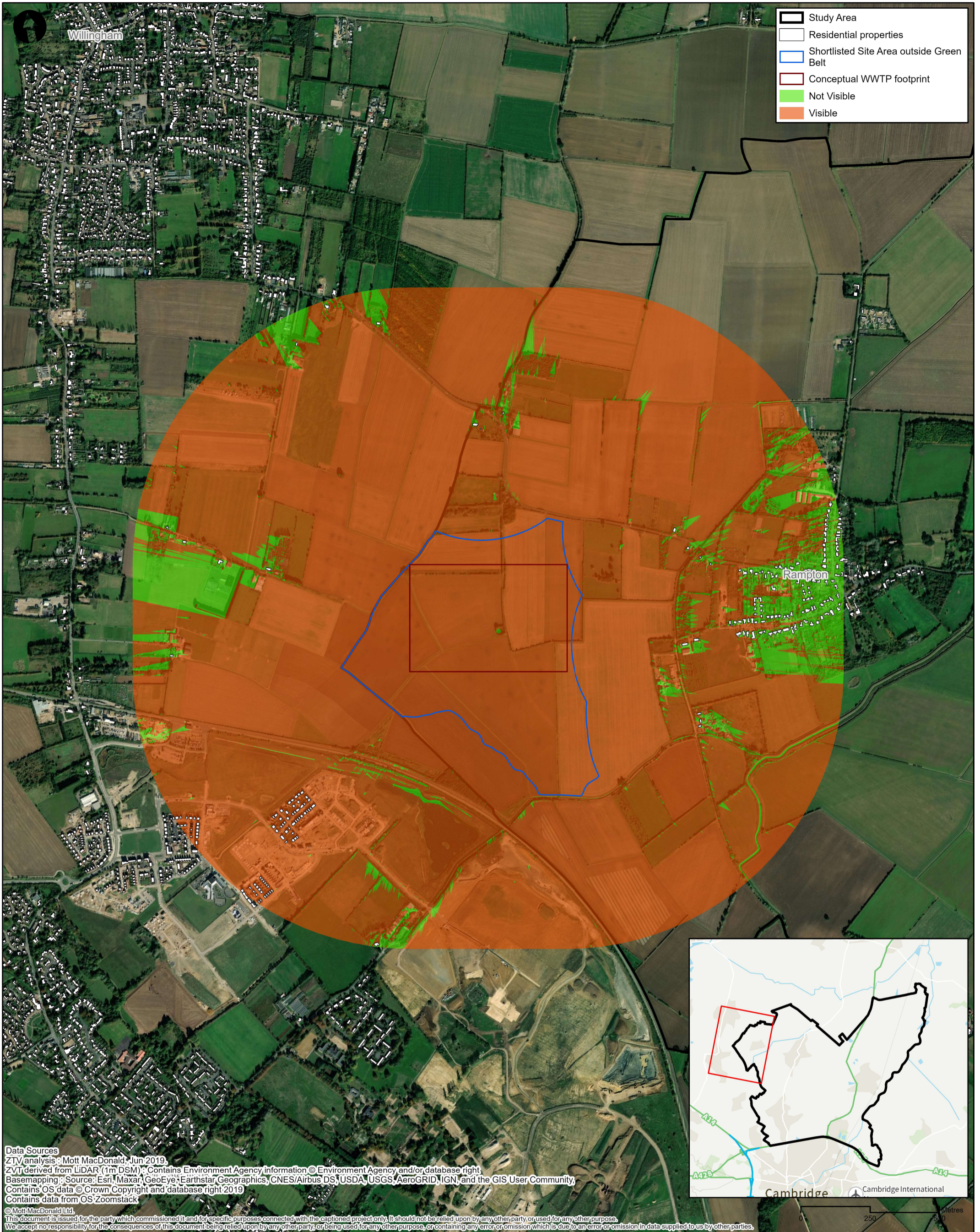
## **A. Zone of Theoretical Visibility (ZTV) Plans**





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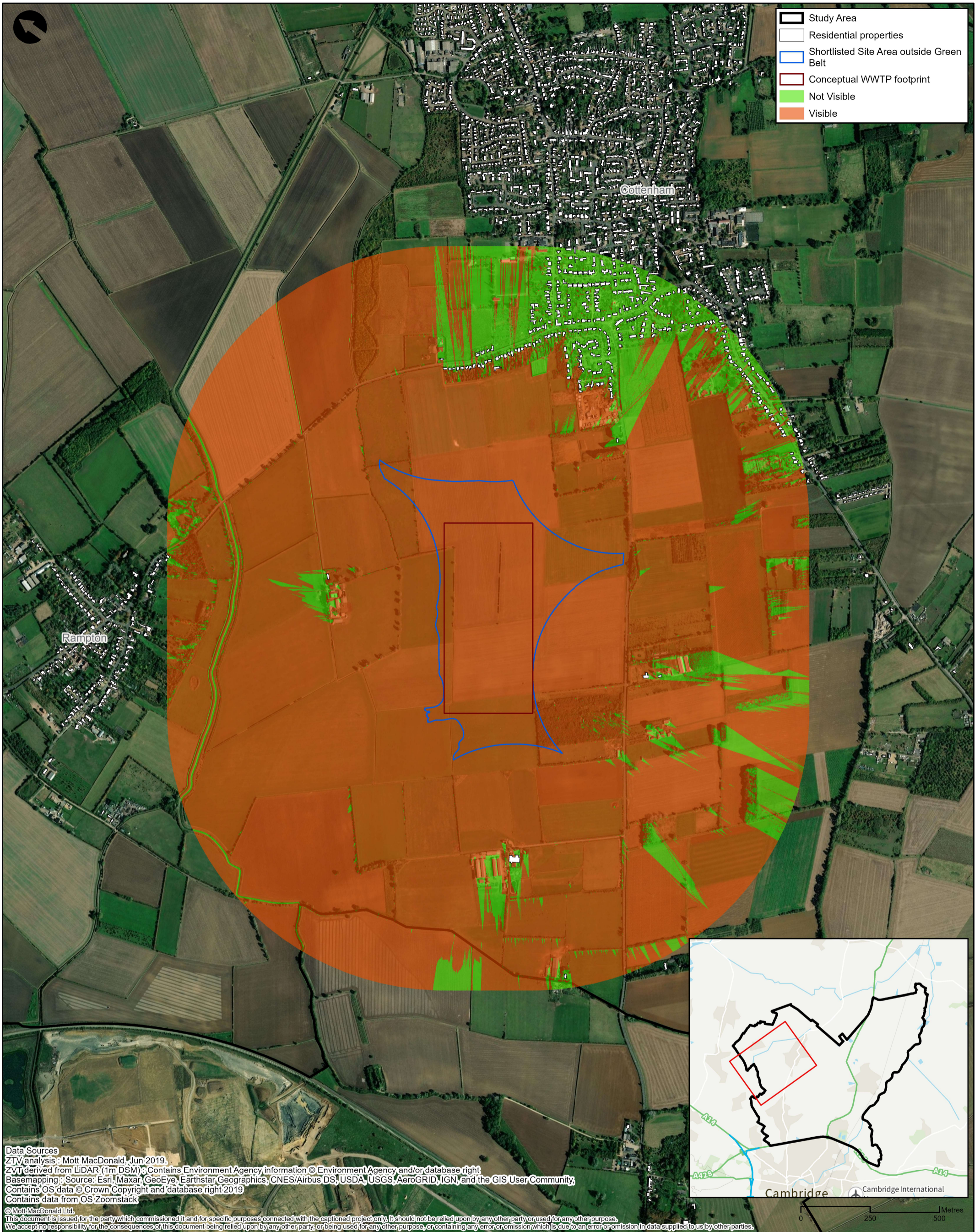
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Approved J Newton			Drawing Number 409071-MMD-00-XX-GIS-Y-0131			Scale at A3 1:12,500														
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	Study Area
	Residential properties
	Shortlisted Site Area outside Green Belt
	Conceptual WWTP footprint
	Not Visible
	Visible

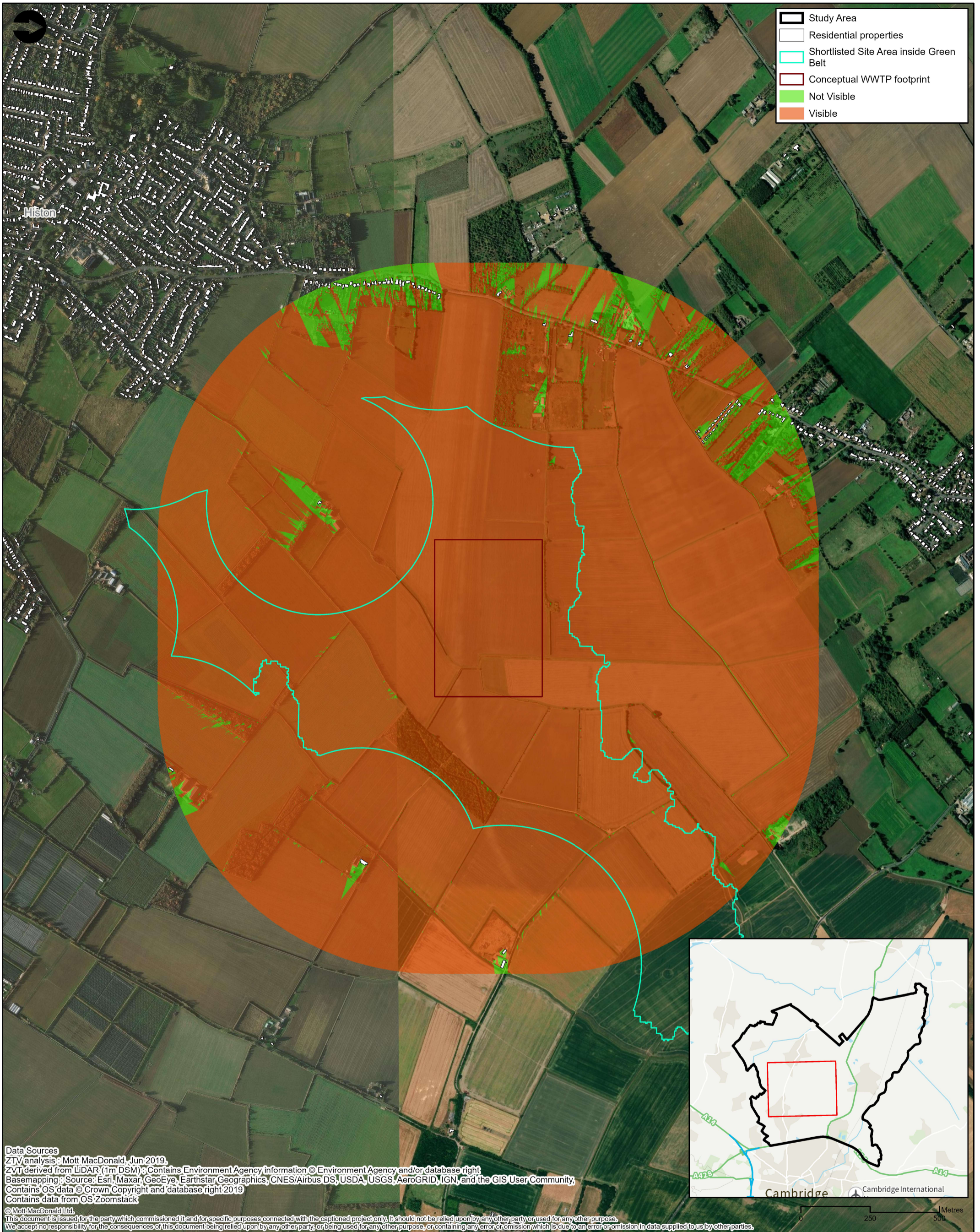
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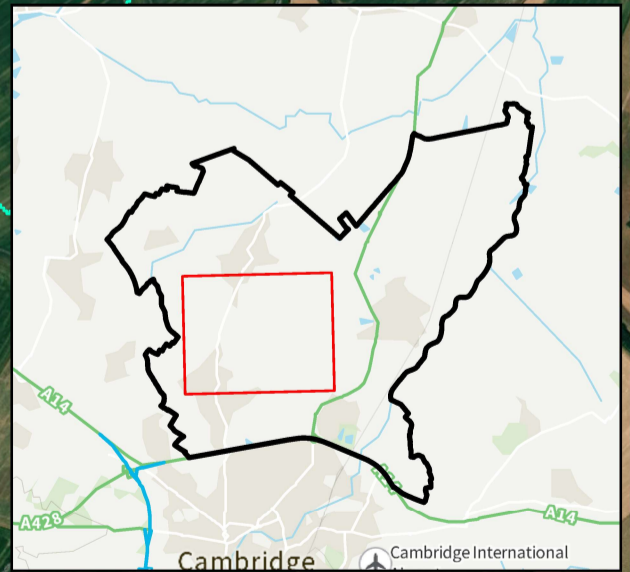
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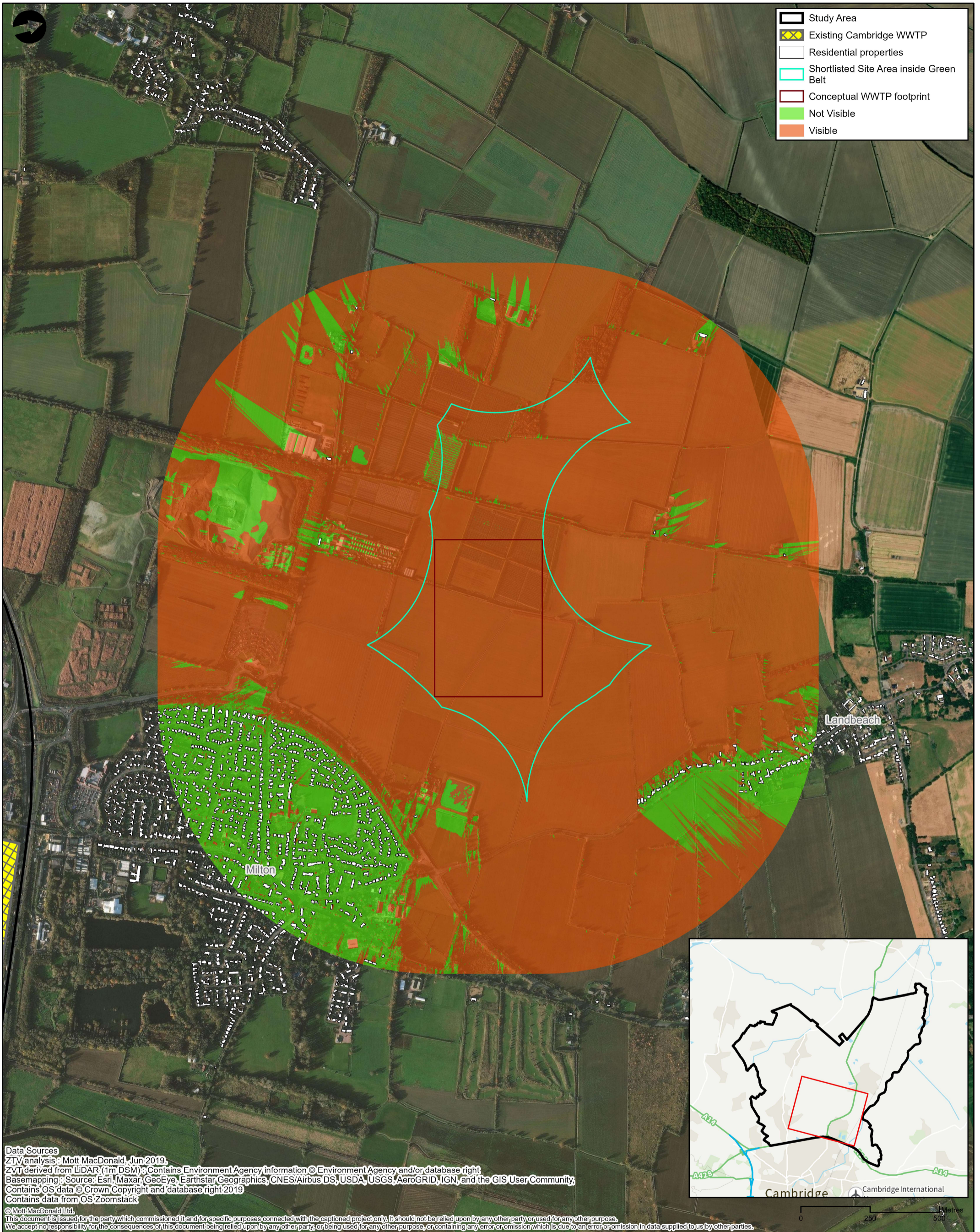


- Study Area
- Residential properties
- Shortlisted Site Area inside Green Belt
- Conceptual WWTP footprint
- Not Visible
- Visible

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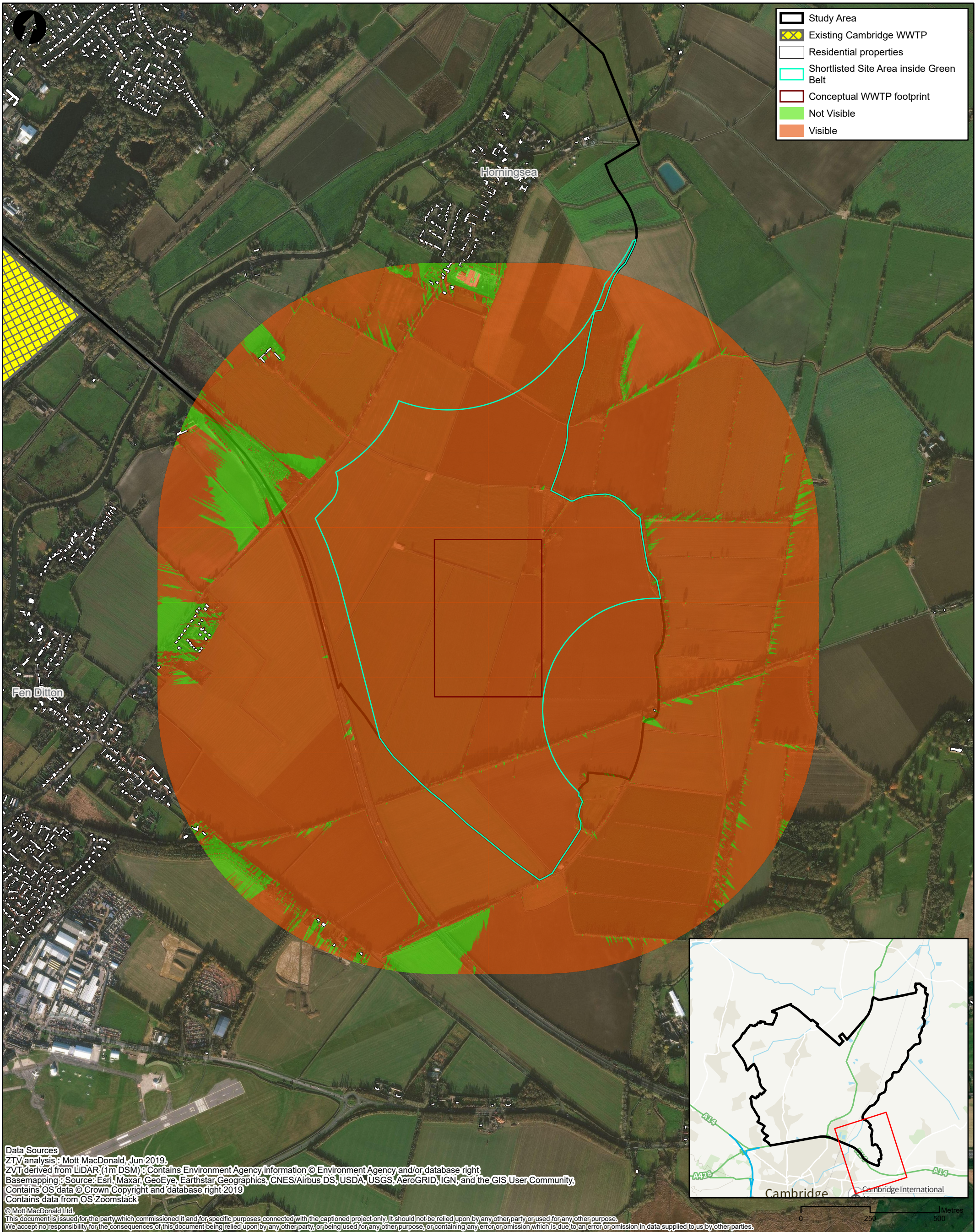
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# **CWWTPR Project - Stage 3 Fine Screening**

Nature Conservation and Biodiversity Appraisal

July 2020

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# **CWWTPR Project - Stage 3 Fine Screening**

Nature Conservation and Biodiversity Appraisal

July 2020

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# 1 Methodology

The Stage 3 Fine Screening considered the impacts of the WWTP development on nature conservation and biodiversity within and around each of the proposed site areas.

The assessment comprised the following tasks:

- Identification of legally protected and notable species within a 5 km Ecological Zone of Influence (EZoI) around each of the proposed site areas. Data provided by Anglian Water were used to identify species (flora and fauna) with one or more of the following designations:
  - Species of Principal Importance (SPI) in England for the Conservation of Biodiversity listed under Section 41 of the Natural Environment & Rural Communities (NERC) Act 2006;
  - Species listed on the schedules of the Wildlife and Countryside Act 1981;
  - Red List species that are designated as “Nationally rare” (i.e. occurring in 15 or fewer hectads in Great Britain) or “Nationally scarce” (i.e. occurring in 16-100 hectads in Great Britain), excluding rare species qualifying under main IUCN criteria.
- Review of historical European Protected Species (EPS) licence applications within a 5 km EZoI around each of the proposed sites. This assessment was conducted using the MAGIC website (<https://magic.defra.gov.uk/home.htm>).
- Use of Ordnance Survey maps, aerial imagery and the MAGIC website to assess broad habitat types and to identify the presence of Habitats of Principal Importance (HPI; listed under Section 41 of the Natural Environment & Rural Communities (NERC) Act 2006) within each of the indicative WWTP boundaries. Additional high-level assessment of the suitability of identified habitat types to support protected species.
- Assessment of the likelihood of great crested newts (GCN) being present within a 0.5 km EZoI around each site area. Ordnance Survey maps and aerial imagery were used to assess the extent of potential GCN habitats with 0.25 km of the indicative WWTP boundaries. The protected species data provided by Anglian Water were also searched to identify all records of GCN within 0.5 km of each of the proposed site areas.
- Use of ordinance survey maps and aerial imagery to identify potential pathways for impact during the construction of pipeline routes and access roads on all statutory and non-statutory designated sites within a 1.0 km EZoI. Pathways identified were generally natural routes for wildlife migration, such as hedgerows, woodland or watercourses. However, where the designated site is within 0.5 km of the proposed route, it was considered that increased levels of noise, vibration, light and vehicular movement during construction could lead to habitat disruption and species displacement (i.e. potential for impact due to proximity despite lack of physical pathway).

The RAG scoring criteria, shown in Table 1.1, were defined to assess the potential ecological constraints at each of the seven shortlisted sites (A, B, C, H, I, J and L). Using the methodology described above, the following constraints have been assessed:

- Protected and notable species recorded within the indicative WWTP boundaries and within a 5 km EZoI (Appendix A);
- Habitat types within the indicative WWTP boundaries and their potential to support protected and/or notable species (Table 2.1);

- Potential for GCN within the indicative WWTP boundaries and within the EZoI (Table 2.2);  
and
- Potential ecological impact pathways to statutory and non-statutory designated sites during the construction of treated effluent discharge pipelines and WWTP access roads (Table 2.3).

Finally, the RAG scores for the individual components of the Stage 3 Fine Screening were combined with the Stage 2 Course Screening RAG scores<sup>1</sup> to provide an overall assessment of the potential ecological constraints at each of the proposed site areas. The overall RAG rating presented in Table 2.4 corresponds to the highest level of risk across the components of the Stage 3 Fine Screening (as described above) and the Stage 2 Coarse Screening.

---

<sup>1</sup> The Stage 2 Coarse Screening identified potential pathways for impact between the proposed WwTP sites and any designated areas of nature conservation or biodiversity importance (both statutory and non-statutory designations) within a 5.0 km EZoI.



**Table 1.1: Stage 3 Fine Screening RAG assessment criteria**

Potential ecological constraint	Green	Amber	Red
Protected and notable species recorded within 5.0 km EZoI	Confirmed records of notable species without specific legal protection (e.g. nationally rare or nationally scarce) recorded within indicative WWTP boundary or within a 0.5km EZoI of the indicative WWTP boundary; and/or Confirmed records of EPS species within 1.0km – 5.0km of the indicative WWTP boundary.	Confirmed records of protected species (e.g. SPI and species listed on the Wildlife and Countryside Act 1981) within a 5.0km EZoI of the indicative WWTP boundary; and/or Confirmed records of EPS species within 0.5km – 1.0 km of the indicative WWTP boundary.	Confirmed records of protected species (e.g. SPI and species listed on the Wildlife and Countryside Act 1981) within the indicative WWTP boundary; and/or Confirmed records of EPS species within the boundary of the proposed WWTP site or within a 0.5km EZoI of the indicative WWTP boundary.
Habitat types within the indicative WWTP boundaries	No Habitats of Principal Importance (HPI) within the indicative WWTP boundary; and Habitats present considered unlikely to support protected species.	HPI within the indicative WWTP boundary; Ancient woodland within 0.5km of the indicative WWTP boundary; and/or Potentially suitable habitat for protected species found within the indicative WWTP boundary.	Ancient woodland within the indicative WWTP boundary.
Potential for proposed site to support GCN	No GCN recorded within the indicative WWTP boundary or within a 0.5km EZoI of the indicative WWTP boundary; and Lack of suitable GCN habitat within the indicative WWTP boundary or within 0.5km of the indicative WWTP boundary.	No GCN recorded within the indicative WWTP boundary or within a 0.5km EZoI of the indicative WWTP boundary and Identification of habitat within the indicative WWTP boundary or within a 0.5km EZoI of the indicative WWTP boundary that has the potential to support GCN (e.g. ponds, ditches, drainage network).	GCN recorded within the indicative WWTP boundary or within a 0.5km EZoI of the indicative WWTP boundary.
Impact pathways between pipeline routes / access roads and statutory / non-statutory designated sites	No national, regional or local designations likely to be adversely affected, or effect likely to be positive. i.e. no pathways from indicative WWTP boundary.	Designation of regional or local importance likely to be adversely affected, i.e. a pathway from the indicative WWTP boundary was identified e.g. County Wildlife Sites, Country Parks	Designation of national and/or international importance and/or Ancient Woodland likely to be adversely affected, i.e. pathway from indicative WWTP boundary. e.g. Sites of Special Scientific Interest (SSSIs), Ancient Woodland (AW) a Local Nature Reserves (LNRs)
Potential future work	Further surveys required. Implementation of simple mitigation or precautionary mitigation measures likely but low risk.	Further surveys required. Consultation with County Ecologist may be required. Implementation of mitigation or precautionary mitigation measures likely.	Further surveys required. Consultation with Natural England may be required for proposed works impacting designated sites. Natural England mitigation licensing may be required. Mitigation measure may be intensive; including capture and relocation of potentially impacted species.

## 2 Stage 3 Assessment Tables

**Table 2.1: Habitat types within proposed site areas and their potential to support protected species**

Site area	Habitat type	Approximate area (km <sup>2</sup> )	Approximate % land cover	NERC Act (2006) Section 41 habitat of principal importance	Potential to support protected species	RAG rating
A	Arable land	0.53	99.0	N	Breeding birds	Amber
	Hedgerow	< 0.01	< 1.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Drain	< 0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	
B	Arable land	0.53	93.0	N	Breeding birds	Amber
	Hedgerows	0.01	2.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Deciduous woodland	< 0.01	< 1.0	Y	Bats, badgers, barn owls, reptiles	
	Pond	< 0.01	< 1.0	Y	Great crested newts, water voles	
	Drain	< 0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	
C	Arable land	0.40	97.0	N	Breeding birds	Amber
	Deciduous woodland	0.01	2.5	Y	Bats, badgers, barn owls, reptiles	
	Hedgerow	< 0.01	< 1.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Drain	< 0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	
H	Arable land	1.57	94.5	N	Breeding birds	Amber
	Deciduous woodland	0.06	3.6	Y	Bats, badgers, barn owls, reptiles	
	Hedgerow	0.02	1.2	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Drain	0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	
I	Arable land	0.64	94.0	N	Breeding birds	Amber
	Hedgerow	0.02	3.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Deciduous woodland	0.01	1.5	Y	Bats, badgers, barn owls, reptiles	
	Drain	0.01	1.5	N	Water voles, otters, great crested newts, spined loach	

Site area	Habitat type	Approximate area (km <sup>2</sup> )	Approximate % land cover	NERC Act (2006) Section 41 habitat of principal importance	Potential to support protected species	RAG rating
J	Arable land	0.49	92.0	N	Breeding birds	Amber
	Deciduous woodland	0.03	6.0	Y	Bats, badgers, barn owls, reptiles	
	Hedgerow	0.01	2.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Drain	< 0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	
L	Arable land	1.27	99.0	N	Breeding birds	Amber
	Hedgerow	< 0.01	< 1.0	Y	Badgers, bats, reptiles, barn owls, breeding birds	
	Drain	< 0.01	< 1.0	N	Water voles, otters, great crested newts, spined loach	

**Table 2.2: Great crested newt assessment**

Site area	GCN recorded within 0.5 km of site area	Waterbodies within 0.25 km of site area	Approximate distance from site area (km)	Location	Approximate area or length	RAG rating
A	No	Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	3.6 km	Amber
		Pond	0.23	In EZol, south of proposed site area, north of Rampton (TL424683)	< 0.01 km <sup>2</sup>	
B	No	Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	3.7 km	Amber
		Reynolds Ditch (County Wildlife Site)	< 0.01 – 0.25	In Zol, adjacent to southern perimeter of proposed site area in EZol	0.5 km	
C	No	Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	2.3 km	Amber
H	No	Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	8.0 km	Amber
		Beach Ditch & Engine Drain (County Wildlife Site)	0.13	In EZol, adjacent to northern perimeter of proposed site area	0.7 km	
I	No	Pond	0.17	In EZol, south east of proposed site area, north of Milton (TL475635)	0.01 km <sup>2</sup>	Amber
		Pond	0.19	In EZol, south east of proposed site area, north of Milton (TL476635)	< 0.01 km <sup>2</sup>	
		Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	2.8 km	
J	No	Pond	0.22	In EZol, north of proposed site area, south of Green Gates Farm (TL459634)	< 0.01 km <sup>2</sup>	Amber
		Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	2.73 km	

Site area	GCN recorded within 0.5 km of site area	Waterbodies within 0.25 km of site area	Approximate distance from site area (km)	Location	Approximate area or length	RAG rating
L	No	Pond	0.14	In EZol, east of proposed site area, north of Biggin Pin Plantation	< 0.01 km <sup>2</sup>	Amber
		Pond	0.22	In EZol, north east of proposed site area, east of Gayton Farm (TL499627)	< 0.01 km <sup>2</sup>	
		Drainage network	0 – 0.25	Within proposed site area and throughout 250 m EZol	< 0.01 km <sup>2</sup>	

**Table 2.3: Statutory and non-statutory sites RAG assessment for pipelines and site access roads**

Site area	Route	Designated areas within 1 km	Approximate distance (km)	Designation	Potential impact pathway	RAG rating
A	Access road	Ashley Farm Orchard	0.5	County Wildlife Site	Potential for impact due to proximity.	Amber
	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
		Beach Ditch & Engine Drain	0.0	Local Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity with drainage system.	
		Ashley Farm Orchard	0.5	County Wildlife Site	Potential for impact due to proximity.	
		Worts Meadow	0.6	Local Nature Reserve	No impact expected.	
		Milton	1.0	Country Park	No impact expected.	
B	Access road	None			Green	
B	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
		Beach Ditch & Engine Drain	0.0	Local Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity with drainage system.	
		Worts Meadow	0.6	Local Nature Reserve	No impact expected.	
		Ashley Farm Orchard	1.0	County Wildlife Site	No impact expected.	
		Milton	1.0	Country Park	No impact expected.	

Site area	Route	Designated areas within 1 km	Approximate distance (km)	Designation	Potential impact pathway	RAG rating
C	Access road	None				Green
	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
		Beach Ditch & Engine Drain	0.0	Local Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity with drainage system.	
		Worts Meadow	0.6	Local Nature Reserve	No impact expected.	
		Milton	1.0	Country Park	No impact expected.	
H	Access road	None				Green
	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
		Worts Meadow	0.6	Local Nature Reserve	No impact expected.	
		Beach Ditch & Engine Drain	0.8	Local Wildlife Site	No impact expected.	
		Milton	1.0	Country Park	No impact expected.	

Site area	Route	Designated areas within 1 km	Approximate distance (km)	Designation	Potential impact pathway	RAG rating
I	Access road	None				Green
	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
Milton	1.0	Country Park	No impact expected.			
J	Access road	None				Green
	Pipeline to new outfall north-east of Milton	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Amber
		River Great Ouse		County Wildlife Site	Potential for impact due to hydrological connectivity between the pipeline and the River Great Ouse via the River Cam and via the drainage network.	
Milton	1.0	Country Park	No impact expected.			
L	Access Road	Low Fen Drove Way Grasslands and Hedges	0.0	County Wildlife Site	Potential for impact due to proximity	Amber
	Pipeline new outfall – North of A14	River Cam	0.0	County Wildlife Site	Potential for impact due to proximity and due to hydrological connectivity between the pipeline and the River Cam.	Red
		Stow-cum-Quy Fen	0.8	SSSI	Potential for impact due to hydrological connectivity between the pipeline route and field drains	
Allicky Farm Pond	0.9	County Wildlife Site	No impact expected			



**Table 2.4: Overall RAG Assessment**

Site area	Stage 2 Coarse Screening	Protected species	Habitats	GCN	Access Roads and pipelines	Overall	Comment(s)
A	Amber	Amber	Amber	Amber	Amber	Amber	
B	Green	Red	Amber	Amber	Amber	Red	Categorised as Red due to reports of protected species within the indicative WWTP boundary (see Table A.2).
C	Green	Amber	Amber	Amber	Amber	Amber	
H	Red	Amber	Amber	Amber	Amber	Red	Categorised as Red due to the identification of potential impact pathways between the site area and either statutory or non-statutory designated sites during the Stage 2 Coarse Screening.
I	Red	Red	Amber	Amber	Amber	Red	Categorised as Red due to the identification of potential impact pathways between the site area and both statutory or non-statutory designated sites during the Stage 2 Coarse Screening and due to reports of protected species within the indicative WWTP boundary (see Table A.2)
J	Green	Red	Amber	Amber	Amber	Red	Categorised as Red due to reports of protected species within the indicative WWTP boundary (see Table A.2).
L	Red	Red	Amber	Amber	Red	Red	Categorised as Red due to the identification of potential impact pathways between the site area and both statutory or non-statutory designated sites during the Stage 2 Coarse Screening and due to reports of protected species within the indicative WWTP boundary (see Table A.2).

### 3 Assumptions and Exclusions

- RAG Assessment criteria is based on the methodology described above and the designated sites and protected species information available.
- All measurements are approximate.
- Absence of species records should not preclude the presence of species, as species are generally under recorded.
- Protected species data are of inconsistent resolution. Some species have been assumed to occur within 1.0 km of the site in the absence of more detailed records.
- Protected species data is of varying ages and some may no longer be relevant.
- In the absence of habitat suitability index scores, all waterbodies within 0.25 km of the indicative WWTP boundaries are considered to have potential to host great crested newts.
- The majority of the NERC Act Section 41 moth species listed in Appendix A.1 are "research only". These are common or widespread species, which have been highlighted as they are subject to pressures causing their decline. However, they do not qualify as nationally scarce and there are no actions defined for their conservation.

# Appendices

## A. Protected Species Records

**Table A.1: Protected species within 5km EZol**

Taxon group	Common name	Latin name	Designation(s)	Site area							
				A	B	C	H	I	J	L	
Amphibian	Great crested newt	<i>Triturus cristatus</i>	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
	Common toad	<i>Bufo bufo</i>	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Bird	Avocet	<i>Recurvirostra avosetta</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y		Y	Y	Y			Y
	Barn owl	<i>Tyto alba</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Bearded tit	<i>Panurus biarmicus</i>	Wildlife and Countryside Act 1981 (Schedule 1)		Y						Y
	Bewick's swan	<i>Cygnus columbianus</i> subsp. <i>Bewickii</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
	Bittern	<i>Botaurus stellaris</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England		Y	Y	Y	Y	Y	Y	Y
	Black redstart	<i>Phoenicurus ochruros</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Black-necked Grebe	<i>Podiceps nigricollis</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y	Y	Y	Y
	Black-tailed Godwit	<i>Limosa limosa</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Brambling	<i>Fringilla montifringilla</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Cetti's warbler	<i>Cettia cetti</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Common crossbill	<i>Loxia curvirostra</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Common scoter	<i>Melanitta nigra</i>	Wildlife and Countryside Act 1981 (Schedule 1)								Y
	Dartford warbler	<i>Sylvia undata</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y	Y	Y	Y
	Dotterel	<i>Charadrius morinellus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y				Y	Y	Y
	Fieldfare	<i>Turdus pilaris</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
	Firecrest	<i>Regulus ignicapilla</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y			Y
	Garganey	<i>Anas querquedula</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y		Y	Y	Y	Y	Y	Y
	Greylag goose	<i>Anser anser</i>	Wildlife and Countryside Act 1981 (Schedule 1)								Y
	Golden oriole	<i>Oriolus oriolus</i>	Wildlife and Countryside Act 1981 (Schedule 1)					Y	Y	Y	Y
	Goshawk	<i>Accipiter gentilis</i>	Wildlife and Countryside Act 1981 (Schedule 1)					Y	Y	Y	Y
Green sandpiper	<i>Tringa ochropus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y	

Greenshank	<i>Tringa nebularia</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Hen harrier	<i>Circus cyaneus</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
Hobby	<i>Falco subbuteo</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Honey-buzzard	<i>Pernis apivorus</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y	Y	Y
Kingfisher	<i>Alcedo atthis</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Leach's petrel	<i>Oceanodroma leucorhoa</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y		
Little gull	<i>Hydrocoloeus minutus</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y	Y	Y	Y
Little ringed plover	<i>Charadrius dubius</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Marsh harrier	<i>Circus aeruginosus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Mediterranean gull	<i>Larus melanocephalus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Merlin	<i>Falco columbarius</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Montagu's harrier	<i>Circus pygargus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y		
Osprey	<i>Pandion haliaetus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Pallid harrier	<i>Circus macrourus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y				
Peregrine	<i>Falco peregrinus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Purple heron	<i>Ardea purpurea</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y					
Quail	<i>Coturnix coturnix</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Red kite	<i>Milvus milvus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Red-backed Shrike	<i>Lanius collurio</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y		Y	Y	Y		
Redwing	<i>Turdus iliacus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Ruff	<i>Calidris pugnax</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y		Y
Scaup	<i>Aythya marila</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England			Y	Y			Y
Shore lark	<i>Eremophila alpestris</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y						
Slavonian grebe	<i>Podiceps auritus</i>	Wildlife and Countryside Act 1981 (Schedule 1)			Y	Y			Y
Snow bunting	<i>Plectrophenax nivalis</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y
Spoonbill	<i>Platalea leucorodia</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y						
Spotted crane	<i>Porzana porzana</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y			
Stone-curlew	<i>Burhinus oediconemus</i>	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
Whimbrel	<i>Numenius phaeopus</i>	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y

Whooper swan	Cygnus cygnus	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
Wood sandpiper	Tringa glareola	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
Wryneck	Jynx torquilla	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Goldeneye	Bucephala clangula	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
Greylag goose	Anser anser	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
Pintail	Anas acuta	Wildlife and Countryside Act 1981 (Schedule 1)	Y	Y	Y	Y	Y	Y	Y	Y
Arctic skua	Stercorarius parasiticus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Brent goose	Branta bernicla	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Bullfinch	Pyrrhula pyrrhula	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Corn bunting	Emberiza calandra	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Cuckoo	Cuculus canorus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Curlew	Numenius arquata	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Duncock	Prunella modularis	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Grasshopper warbler	Locustella naevia	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Grey partridge	Perdix perdix	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Hawfinch	Coccothraustes coccothraustes	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
House sparrow	Passer domesticus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Lapwing	Vanellus vanellus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Lesser redpoll	Acanthis cabaret	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Lesser spotted woodpecker	Dendrocopos minor	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Linnet	Linaria cannabina	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Marsh tit	Poecile palustris	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Reed bunting	Emberiza schoeniclus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Ring ouzel	Turdus torquatus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y
Skylark	Alauda arvensis	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y	Y

	Song thrush	Turdus philomelos	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Spotted flycatcher	Muscicapa striata	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Starling	Sturnus vulgaris	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Tree pipit	Anthus trivialis	NERC ACT 2006. Section 41: Species of Principal Importance in England					Y	Y	Y
	Tree sparrow	Passer montanus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Turtle dove	Streptopelia turtur	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	White-fronted Goose	Anser albifrons	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y		Y	Y	Y	Y	Y
	Wood warbler	Phylloscopus sibilatrix	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y		Y
	Yellow wagtail	Motacilla flava	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Yellow wagtail	Motacilla flava subsp. Flavissima	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y						Y
	Yellowhammer	Emberiza citrinella	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
Bony fish (Actinopterygii)	Brown Trout	Salmo trutta subsp. fario	NERC ACT 2006. Section 41: Species of Principal Importance in England							Y
Fern	Maidenhair Fern	Adiantum capillus-veneris	Nationally scarce						Y	Y
Flowering plant	Annual Beard-grass	Polypogon monspeliensis	Nationally scarce				Y	Y	Y	Y
	Basil thyme	Clinopodium acinos	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y				
	Bermuda-grass	Cynodon dactylon	Nationally rare						Y	Y
	Bur medick	Medicago minima	Nationally scarce						Y	Y
	Chives	Allium schoenoprasum	Nationally scarce						Y	Y
	Corn buttercup	Ranunculus arvensis	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y					
	Corn cleavers	Galium tricornutum	Nationally rare						Y	Y
	Cornflower	Centaurea cyanus	NERC ACT 2006. Section 41: Species of Principal Importance in England						Y	Y
	Dittander	Lepidium latifolium	Nationally scarce	Y	Y				Y	Y
	Dwarf Mouse-ear	Cerastium pumilum	Nationally scarce						Y	Y
Early Meadow-grass	Poa infirma	Nationally scarce							Y	
Fang-toothed Hawkweed	Hieracium diaphanum	Nationally rare						Y	Y	



Fen pondweed	Potamogeton coloratus	Nationally scarce		Y	Y
Few-flowered Fumitory	Fumaria vaillantii	Nationally scarce		Y	
Fine-leaved Fumitory	Fumaria parviflora	Nationally scarce		Y	
Fly orchid	Ophrys insectifera	UK BAP			Y
Fringed Water-lily	Nymphoides peltata	Nationally scarce	Y	Y	Y
Fritillary	Fritillaria meleagris	Nationally scarce			Y
Galingale	Cyperus longus	Nationally scarce	Y	Y	Y
Gold-of-pleasure	Camelina sativa	Nationally scarce			Y
Hoary mullein	Verbascum pulverulentum	Nationally scarce		Y	Y
Jersey cudweed	Gnaphalium luteoalbum	Wildlife and Countryside Act 1981 (Schedule 8)		Y	Y
Marsh-mallow	Althaea officinalis	Nationally scarce	Y	Y	Y
Mezereon	Daphne mezereum	Nationally scarce		Y	Y
Perennial Flax	Linum perenne	Nationally scarce			Y
Purple fescue	Vulpia ciliata subsp. Ambigua	Nationally scarce		Y	Y
Sea-buckthorn	Hippophae rhamnoides	Nationally scarce	Y	Y	Y
Shepherd's-needle	Scandix pecten-veneris	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y		
Sickle medick	Medicago sativa subsp. Falcata	Nationally scarce			Y
Slender tare	Vicia parviflora	Nationally scarce	Y	Y	Y
Spreading Hedge-parsley	Torilis arvensis	Nationally scarce	Y	Y	
Stinking hellebore	Helleborus foetidus	Nationally scarce			Y
Tasteless Water-pepper	Persicaria mitis	Nationally scarce	Y		Y
Toothed medick	Medicago polymorpha	Nationally scarce		Y	Y
Tubular Water-dropwort	Oenanthe fistulosa	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y		
Wall bedstraw	Galium parisiense	Nationally scarce		Y	Y
Welsh poppy	Meconopsis cambrica	Nationally scarce		Y	Y
White Helleborine	Cephalanthera damasonium	NERC ACT 2006. Section 41: Species of Principal Importance in England			Y

	White mullein	Verbascum lychnitis	Nationally scarce	Y	Y	Y	Y
	Yellow vetchling	Lathyrus aphaca	Nationally scarce				Y
Insect - beetle (Coleoptera)	Abdera biflexuosa	Abdera biflexuosa	Nationally scarce				Y
	Adonis' ladybird	Hippodamia (Adonia) variegata	Nationally scarce	Y	Y	Y	Y
	Agrilus (Anambus) laticornis	Agrilus (Anambus) laticornis	Nationally scarce				Y
	Alder flea weevil	Orchestes (Orchestes) testaceus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y		
	Amidobia talpa	Amidobia talpa	Nationally scarce	Y	Y		
	Ampedus quercicola	Ampedus quercicola	Nationally scarce	Y	Y		
	Anaglyptus mysticus	Anaglyptus mysticus	Nationally scarce	Y	Y	Y	Y
	Anobium inexpectatu m	Anobium inexpectatum	Nationally scarce				Y
	Anthribus nebulosus	Anthribus nebulosus	Nationally scarce		Y	Y	
	Aphodius (Limarus) zenkeri	Aphodius (Limarus) zenkeri	Nationally scarce				Y
	Athous (Orthathous) campyloides	Athous (Orthathous) campyloides	Nationally scarce				Y
	Aulonium trisulcus	Aulonium trisulcus	Nationally scarce	Y	Y	Y	Y
	Badister (Badister) unipustulatus	Badister (Badister) unipustulatus	Nationally scarce			Y	Y
	Bagous (Hydronomus) alismaticis	Bagous (Hydronomus) alismaticis	Nationally scarce	Y			
	Barley flea beetle	Phyllotreta vittula	Nationally scarce			Y	Y
Belladonna flea beetle	Epitrix atropae	Nationally scarce	Y			Y	
Berosus (Berosus) luridus	Berosus (Berosus) luridus	Nationally scarce	Y				
Bloody cranesbill weevil	Zacladus exiguus	Nationally scarce			Y	Y	
Brush- thighed Seed-eater	Harpalus (Harpalus) froelichii	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y				

Carpelimus obesus	Carpelimus obesus	Nationally scarce	Y	Y	Y	Y
Cassida prasina	Cassida prasina	Nationally scarce			Y	Y
Cercyon (Cercyon) bifenestratus	Cercyon (Cercyon) bifenestratus	Nationally scarce	Y	Y	Y	Y
Chrysolina oricalcia	Chrysolina oricalcia	Nationally scarce				Y Y
Cobweb beetle	Ctesias serra	Nationally scarce				Y Y
Cossonus linearis	Cossonus linearis	Nationally scarce				Y
Crudosilis ruficollis	Crudosilis ruficollis	Nationally scarce				Y Y Y
Demetrias (Risophilus) imperialis	Demetrias (Risophilus) imperialis	Nationally scarce				Y Y Y
Diplapion stolidum	Diplapion stolidum	Nationally scarce			Y	Y Y
Diplocoelus fagi	Diplocoelus fagi	Nationally scarce		Y	Y Y	Y
Donacia clavipes	Donacia clavipes	Nationally scarce				Y
Donacia dentata	Donacia dentata	Nationally scarce	Y			
Donacia thalassina	Donacia thalassina	Nationally scarce				Y Y
Dorytomus ictor	Dorytomus ictor	Nationally scarce				Y
Drupenatus nasturtii	Drupenatus nasturtii	Nationally scarce				Y Y
Dryops (Dryops) similaris	Dryops (Dryops) similaris	Nationally scarce	Y			
Eledona agricola	Eledona agricola	Nationally scarce				Y
Enochrus bicolor	Enochrus bicolor	Nationally scarce	Y	Y	Y	Y
Enochrus quadripunctat us	Enochrus quadripunctatus	Nationally scarce	Y	Y	Y	Y
Eubrychius velutus	Eubrychius velutus	Nationally scarce				Y Y
Euglenes oculatus	Euglenes oculatus	Nationally scarce				Y
Flax flea beetle	Longitarsus parvulus	Nationally scarce	Y	Y	Y	Y
Gymnetron melanarium	Gymnetron melanarium	Nationally scarce			Y	Y Y
Hallomenus binotatus	Hallomenus binotatus	Nationally scarce				Y Y

Hawthorn jewel beetle	Agrilus (Anambus) sinuatus	Nationally scarce					Y	Y
Hydaticus seminiger	Hydaticus seminiger	Nationally scarce					Y	Y
Hydaticus transversalis	Hydaticus transversalis	Nationally scarce			Y	Y		
Hygrotus (Coelambus) nigrolineatus	Hygrotus (Coelambus) nigrolineatus	Nationally scarce			Y	Y	Y	
Ischnomera cyanea	Ischnomera cyanea	Nationally scarce					Y	Y
Ischnodes sanguinicollis	Ischnodes sanguinicollis	Nationally scarce						Y
Kissophagus hederæ	Kissophagus hederæ	Nationally scarce						Y
Longitarsus ballotæ	Longitarsus ballotæ	Nationally scarce						Y
Lissodema denticolle	Lissodema denticolle	Nationally scarce			Y	Y	Y	Y
Longitarsus ballotæ	Longitarsus ballotæ	Nationally scarce					Y	Y
Mallow flea beetle	Podagrica fuscicornis	Nationally scarce					Y	Y
Malthinus balteatus	Malthinus balteatus	Nationally scarce			Y	Y	Y	Y
Medon apicalis	Medon apicalis	Nationally scarce						Y
Mogulones geographicus	Mogulones geographicus	Nationally scarce					Y	Y
Musk beetle	Aromia moschata	Nationally scarce					Y	Y
Notaris scirpi	Notaris scirpi	Nationally scarce						Y
Ophonus (Metophonus) schaubergerianus	Ophonus (Metophonus) schaubergerianus	Nationally scarce					Y	Y
Ophonus (Ophonus) ardosiacus	Ophonus (Ophonus) ardosiacus	Nationally scarce			Y	Y	Y	Y
Ophonus (Ophonus) azureus	Ophonus (Ophonus) azureus	Nationally scarce						Y
Opilo mollis	Opilo mollis	Nationally scarce			Y	Y		Y
Orchesia micans	Orchesia micans	Nationally scarce						Y
Oulimnius major	Oulimnius major	Nationally scarce			Y	Y	Y	Y
Philonthus fumarius	Philonthus fumarius	Nationally scarce						Y
Phytoecia cylindrica	Phytoecia cylindrica	Nationally scarce					Y	Y
Platyderus depressus	Platyderus depressus	Nationally scarce			Y		Y	Y

	Platynaspis luteorubra	Platynaspis luteorubra	Nationally scarce	Y	Y				
	Platystethus (Craetopycrus) nodifrons	Platystethus (Craetopycrus) nodifrons	Nationally scarce					Y	
	Polydrusus (Chrysophis) formosus	Polydrusus (Chrysophis) formosus	Nationally scarce	Y	Y	Y			
	Prionychus ater	Prionychus ater	Nationally scarce						Y
	Pseudocistela ceramboidea	Pseudocistela ceramboidea	Nationally scarce	Y	Y				
	Ptinus sexpunctatus	Ptinus sexpunctatus	Nationally scarce	Y	Y				Y
	Rhagonycha lutea	Rhagonycha lutea	Nationally scarce					Y	
	Scaphisoma boleti	Scaphisoma boleti	Nationally scarce					Y	Y
	Sepedophilus testaceus	Sepedophilus testaceus	Nationally scarce					Y	
	Smaller noterus	Noterus crassicornis	Nationally scarce	Y	Y			Y	Y
	Sphindus dubius	Sphindus dubius	Nationally scarce						Y
	Squamapion cineraceum	Squamapion cineraceum	Nationally scarce	Y	Y				
	Stenus (Stenus) pusillus	Stenus (Stenus) pusillus	Nationally scarce					Y	
	Sunius melanocephalus	Sunius melanocephalus	Nationally scarce					Y	
	Trichosirocalus barnevillei	Trichosirocalus barnevillei	Nationally scarce	Y	Y			Y	Y
	Two-Spot Wood-Borer	Agrilus (Anambus) biguttatus	Nationally scarce						Y
	Wheat mud beetle	Helophorus (Empleurus) nubilus	Nationally scarce					Y	Y
Insect - butterfly	Grizzled skipper	Pyrgus malvae	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Small heath	Coenonympha pamphilus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Swallowtail	Papilio machaon	Wildlife and Countryside Act 1981 (Schedule 5)					Y	Y
	Wall	Lasiommata megera	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	White admiral	Limenitis camilla	NERC ACT 2006. Section 41: Species of Principal Importance in England						
	White-letter Hairstreak	Satyrion w-album	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y





	Oak Hook-tip	Watsonalla binaria	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Pale shining brown	Polia bombycina	NERC ACT 2006. Section 41: Species of Principal Importance in England		Y	Y	Y		
	Powdered quaker	Orthosia gracilis	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Rosy minor	Litoligia literosa	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Rosy rustic	Hydraecia micacea	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Rustic	Hoplodrina blanda	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Sallow	Cirrhia icteritia	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Shaded Broad-bar	Scotopteryx chenopodiata	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Shoulder-striped Wainscot	Leucania comma	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Small emerald	Hemistola chrysoprasaria	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Small phoenix	Ecliptopera silaceata	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Small Square-spot	Diarsia rubi	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Spinach	Eulithis mellinata	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	Spindle Knot-horn	Nephoterix angustella	Nationally scarce						Y
	Sulphur pearl	Sitochroa palealis	Nationally scarce		Y	Y			Y
	V-moth	Macaria wauaria	NERC ACT 2006. Section 41: Species of Principal Importance in England		Y	Y	Y		
	White ermine	Spilosoma lubricipeda	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	White-line Dart	Euxoa tritici	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
	White-spotted Pinion	Cosmia diffinis	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y
Insect - true bug (Hemiptera)	Agnocoris reclairei	Agnocoris reclairei	Nationally scarce		Y	Y	Y		
	Anoscopus albifrons	Anoscopus albifrons	Nationally scarce		Y	Y	Y	Y	
	Tall fescue planthopper	Ribautodelphax imitans	NERC ACT 2006. Section 41: Species of Principal Importance in England						Y
Insect - true fly (Diptera)	Acanthiophilus helianthi	Acanthiophilus helianthi	Nationally scarce						Y
	Agathomyia wankowiczii	Agathomyia wankowiczii	Nationally scarce						Y
	Atypophthalmus inustus	Atypophthalmus inustus	Nationally scarce						Y



Aulacigaster leucopeza	Aulacigaster leucopeza	Nationally scarce				Y
Beris clavipes	Beris clavipes	Nationally scarce				Y
Blaesoxipha plumicornis	Blaesoxipha plumicornis	Nationally scarce				Y
Brachyopa insensilis	Brachyopa insensilis	Nationally scarce				Y
Brachyopa pilosa	Brachyopa pilosa	Nationally scarce				Y
Cheilosia soror	Cheilosia soror	Nationally scarce				Y Y
Cheilosia velutina	Cheilosia velutina	Nationally scarce				Y
Chorisops nagatomii	Chorisops nagatomii	Nationally scarce		Y	Y Y	
Coenosia atra	Coenosia atra	Nationally scarce				Y Y
Colobaea bifasciella	Colobaea bifasciella	Nationally scarce				Y
Didea fasciata	Didea fasciata	Nationally scarce				Y
Dioxyna bidentis	Dioxyna bidentis	Nationally scarce				Y
Drino lota	Drino lota	Nationally scarce				Y
Epistrophe diaphana	Epistrophe diaphana	Nationally scarce				Y
Eupachygaster tarsalis	Eupachygaster tarsalis	Nationally scarce				Y
Fannia clara	Fannia clara	Nationally scarce				Y
Fannia nigra	Fannia nigra	Nationally scarce				Y
Gnophomyia viridipennis	Gnophomyia viridipennis	Nationally scarce				Y
Golden Hoverfly	Callicera spinolae	Nationally scarce				Y
Helina abdominalis	Helina abdominalis	Nationally scarce				Y
Helius pallirostris	Helius pallirostris	Nationally scarce				Y Y
Hercostomus nigrilamellatus	Hercostomus nigrilamellatus	Nationally scarce				Y
Hilara lugubris	Hilara lugubris	Nationally scarce				Y
Hydrotaea pilipes	Hydrotaea pilipes	Nationally scarce				Y
Lejogaster tarsata	Lejogaster tarsata	Nationally scarce				Y Y
Lispocephala falculata	Lispocephala falculata	Nationally scarce				Y
Lophosia fasciata	Lophosia fasciata	Nationally scarce				Y

Macronychia striginervis	Macronychia striginervis	Nationally scarce					Y
Mallota cimbiciformis	Mallota cimbiciformis	Nationally scarce					Y
Merzomyia westermanni	Merzomyia westermanni	Nationally scarce			Y	Y	
Mintho rufiventris	Mintho rufiventris	Nationally scarce					Y
Myolepta dubia	Myolepta dubia	Nationally scarce					Y
Neopachygaster meromelas	Neopachygaster meromelas	Nationally scarce					Y
Norellia spinipes	Norellia spinipes	Nationally scarce					Y
Odinia mejirei	Odinia mejirei	Nationally scarce					Y
Odontomyia tigrina	Odontomyia tigrina	Nationally scarce					Y Y
Orellia falcata	Orellia falcata	Nationally scarce					Y
Periscelis annulata	Periscelis annulata	Nationally scarce					Y
Pherbellia annulipes	Pherbellia annulipes	Nationally scarce					Y
Pherbellia dorsata	Pherbellia dorsata	Nationally scarce					Y Y
Pherbellia nana	Pherbellia nana	Nationally scarce					Y Y
Phoenix fly	Dorycera graminum	NERC ACT 2006. Section 41: Species of Principal Importance in England					Y
Pipizella virens	Pipizella virens	Nationally scarce			Y	Y	Y Y
Pipunculus zugmayeriae	Pipunculus zugmayeriae	Nationally scarce					Y
Platypalpus articulatoides	Platypalpus articulatoides	Nationally scarce					Y Y
Platypalpus articulatus	Platypalpus articulatus	Nationally scarce					Y
Platypalpus infectus	Platypalpus infectus	Nationally scarce					Y Y
Platypalpus stigma	Platypalpus stigma	Nationally scarce					Y Y
Sapromyza opaca	Sapromyza opaca	Nationally scarce					Y Y
Scenopinus niger	Scenopinus niger	Nationally scarce					Y
Stratiomys potamida	Stratiomys potamida	Nationally scarce					Y Y Y
Stratiomys singularior	Stratiomys singularior	Nationally scarce					Y
Systemus leucurus	Systemus leucurus	Nationally scarce					Y

	Tachypeza fuscipennis	Tachypeza fuscipennis	Nationally scarce						Y
	Thecophora fulvipes	Thecophora fulvipes	Nationally scarce						Y
	Trachysiphonella scutellata	Trachysiphonella scutellata	Nationally scarce			Y	Y		
	Triglyphus primus	Triglyphus primus	Nationally scarce						Y
	Typhamyza bifasciata	Typhamyza bifasciata	Nationally scarce					Y	Y
	Vanoyia tenuicornis	Vanoyia tenuicornis	Nationally scarce					Y	Y Y
	Volucella inanis	Volucella inanis	Nationally scarce			Y			Y Y
	Volucella inflata	Volucella inflata	Nationally scarce						Y
	Volucella zonaria	Volucella zonaria	Nationally scarce			Y	Y Y Y	Y Y Y	
	Xanthandrus comtus	Xanthandrus comtus	Nationally scarce						Y
	Zophomyia temula	Zophomyia temula	Nationally scarce						Y
Lichen	Aspicilia contorta subsp. Hoffmanniana	Aspicilia contorta subsp. Hoffmanniana	Nationally rare			Y	Y Y		Y
	Bacidia egenula	Bacidia egenula	Nationally scarce						Y
	Buellia badia	Buellia badia	Nationally scarce			Y	Y Y		
	Caloplaca crenulatella	Caloplaca crenulatella	Nationally scarce			Y	Y Y		
	Catillaria atomarioides	Catillaria atomarioides	Nationally scarce					Y Y	
	Chaenotheca brachypoda	Chaenotheca brachypoda	Nationally scarce						Y
	Lecania cyrtella	Lecania cyrtella	Nationally rare			Y	Y Y Y Y	Y Y Y	
	Lecania hutchinsiae	Lecania hutchinsiae	Nationally scarce						Y
	Lecania inundata	Lecania inundata	Nationally scarce			Y	Y Y Y		
	Lecania rabenhorstii	Lecania rabenhorstii	Nationally scarce			Y	Y Y		
	Lecanora persimilis	Lecanora persimilis	Nationally scarce			Y	Y Y		
	Lecanora semipallida	Lecanora semipallida	Nationally scarce					Y	Y
	Placynthiella dasaea	Placynthiella dasaea	Nationally scarce					Y Y	Y
	Punctelia jeckeri	Punctelia jeckeri	Nationally scarce			Y	Y Y Y Y		Y

	Xanthoria ucrainica	Xanthoria ucrainica	Nationally scarce	Y	Y	Y	Y	Y	Y	Y
Liverwort	Micheli's Balloonwort	Sphaerocarpos michelii	Nationally scarce							Y
Reptile	Common lizard	Zootoca vivipara	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Grass snake	Natrix natrix	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Slow-worm	Anguis fragilis	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England						Y	Y
Stonewort	Clustered stonewort	Tolypella glomerata	Nationally scarce	Y					Y	Y
	Tassel stonewort	Tolypella intricata	NERC ACT 2006. Section 41: Species of Principal Importance in England						Y	Y
Terrestrial mammal	Brown Long-eared Bat	Plecotus auritus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Common pipistrelle	Pipistrellus pipistrellus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y
	Daubenton's bat	Myotis daubentonii	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y
	European otter	Lutra lutra	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Long-eared Bat species	Plecotus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y
	Natterer's bat	Myotis nattereri	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)		Y	Y	Y	Y		Y
	Noctule bat	Nyctalus noctula	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
	Nyctalus Bat species	Nyctalus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England							Y
	Parti-coloured Bat	Vespertilio murinus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)						Y	Y
	Pipistrelle Bat species	Pipistrellus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y
	Serotine	Eptesicus serotinus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y
	Soprano pipistrelle	Pipistrellus pygmaeus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y	Y	Y	Y	Y	Y
Unidentified bat	Myotis	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5)	Y	Y	Y	Y	Y	Y	Y	

Western barbastelle	Barbastella barbastellus	Habitats and Species Directive (Annex II) Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	Y
Polecat	Mustela putorius	Habitats and Species Directive (Annex V) NERC ACT 2006. Section 41: Species of Principal Importance in England		Y Y
Eurasian badger	Meles meles	Protection of Badgers Act 1992	Y Y Y Y Y Y Y	
Bats	Chiroptera	Wildlife and Countryside Act 1981 (Schedule 5)	Y Y Y Y Y Y	
European water vole	Arvicola amphibius	Wildlife and Countryside Act 1981 (Schedule 5) NERC ACT 2006. Section 41: Species of Principal Importance in England	Y Y Y Y Y Y Y	
Brown hare	Lepus europaeus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y Y Y Y Y Y Y	
Harvest mouse	Micromys minutus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y	
West European hedgehog	Erinaceus europaeus	NERC ACT 2006. Section 41: Species of Principal Importance in England	Y Y Y Y Y Y Y	

**Table A.2: Protected and notable species within the Indicative WWTP boundaries**

Site area	Reported species	Designation	Location	Year reported
A	None			
B	Lapwing ( <i>Vanellus vanellus</i> )	NERC ACT 2006. Section 41: Species of Principal Importance in England	South west of Rampton (TL415677)	2003
	Hen harrier ( <i>Circus cyaneus</i> )	Wildlife and Countryside Act 1981 (Schedule 1)	West of Rampton (TL410680)	2007
C	None			
H	None			
I	Stone-curlew ( <i>Burhinus oedicnemus</i> )	Wildlife and Countryside Act 1981 (Schedule 1) NERC ACT 2006. Section 41: Species of Principal Importance in England	Landbeach (TL4764)	2012
	Spotted flycatcher ( <i>Muscicapa striata</i> )	NERC ACT 2006. Section 41: Species of Principal Importance in England	Landbeach (TL4764)	2007
J	Mediterranean gull ( <i>Larus melanocephalus</i> )	Wildlife and Countryside Act 1981 (Schedule 1)	Milton landfill site (TL4663)	2019
	Bullfinch ( <i>Pyrrhula pyrrhula</i> )	NERC ACT 2006. Section 41: Species of Principal Importance in England	Mere Way, Milton (TL4663)	2019
	Lesser redpoll ( <i>Acanthis cabaret</i> )	NERC ACT 2006. Section 41: Species of Principal Importance in England	Milton (TL4663)	2019
	Turtle dove ( <i>Streptopelia turtur</i> )	NERC ACT 2006. Section 41: Species of Principal Importance in England	Milton (TL4663)	2019
	Yellow wagtail	NERC ACT 2006. Section 41: Species of Principal Importance in England	Milton (TL4663)	2019
	Grey partridge	NERC ACT 2006. Section 41: Species of Principal Importance in England	Milton (TL4663)	2019
	Curlew	NERC ACT 2006. Section 41: Species of Principal Importance in England	Milton (TL4663)	2019

Site area	Reported species	Designation	Location	Year reported
L	Barn owl ( <i>Tyto alba</i> )	Wildlife and Countryside Act 1981 (Schedule 1)	Low Fen Drove Way Grasslands and Hedges CWS	2011

**Table A.3: Historical EPS licence applications within 5km of the proposed site areas**

Site area	Case reference	Species	Location	Approximate distance (km)	Details	Start date	End date
A	EPSM2013-6619	Bat	TL407704	1.5	Allowed destruction of a resting place	13/11/2013	01/10/2016
	2016-24336-EPS-MIT	Bat	TL396674	2.6	Allowed destruction of a resting place	06/12/2016	06/12/2016
		Common pip (C-PIP)				01/07/2016	01/07/2021
	2017-29294-EPS-MIT-2	Great crested newt	TL401666	2.7	Allowed damage and destruction of a resting place	29/09/2017	30/09/2018
	EPSM2011-3249	Bat C-PIP, Soprano pip (S-PIP)	TL405662	2.7	Allowed destruction of a resting place	25/08/2011	30/11/2012
EPSM2013-6399	Bat C-PIP, BLE	TL474718	4.8	Allowed destruction of a resting place	03/10/2013	30/06/2015	
B	EPSM2013-6619	Bat	TL407704	1.8	Allowed destruction of a resting place	13/11/2013	01/10/2016
	2016-24336-EPS-MIT	Bat	TL396674	1.3	Allowed destruction of a resting place	06/12/2016	06/12/2016
		C-PIP				01/07/2016	01/07/2021
	2017-29294-EPS-MIT-2	Great crested newt	TL401666	1.2	Allowed damage and destruction of a resting place	29/09/2017	30/09/2018
	EPSM2011-3249	Bat C-PIP, S-PIP	TL405662	1.2	Allowed destruction of a resting place	25/08/2011	30/11/2012
2015-8487-EPS-MIT	Great crested newt	TL358684	5.0	Allowed damage and destruction of a resting place	12/06/2015	31/05/2016	
C	EPSM2013-6619	Bat	TL407704	4.1	Allowed destruction of a resting place	13/11/2013	01/10/2016

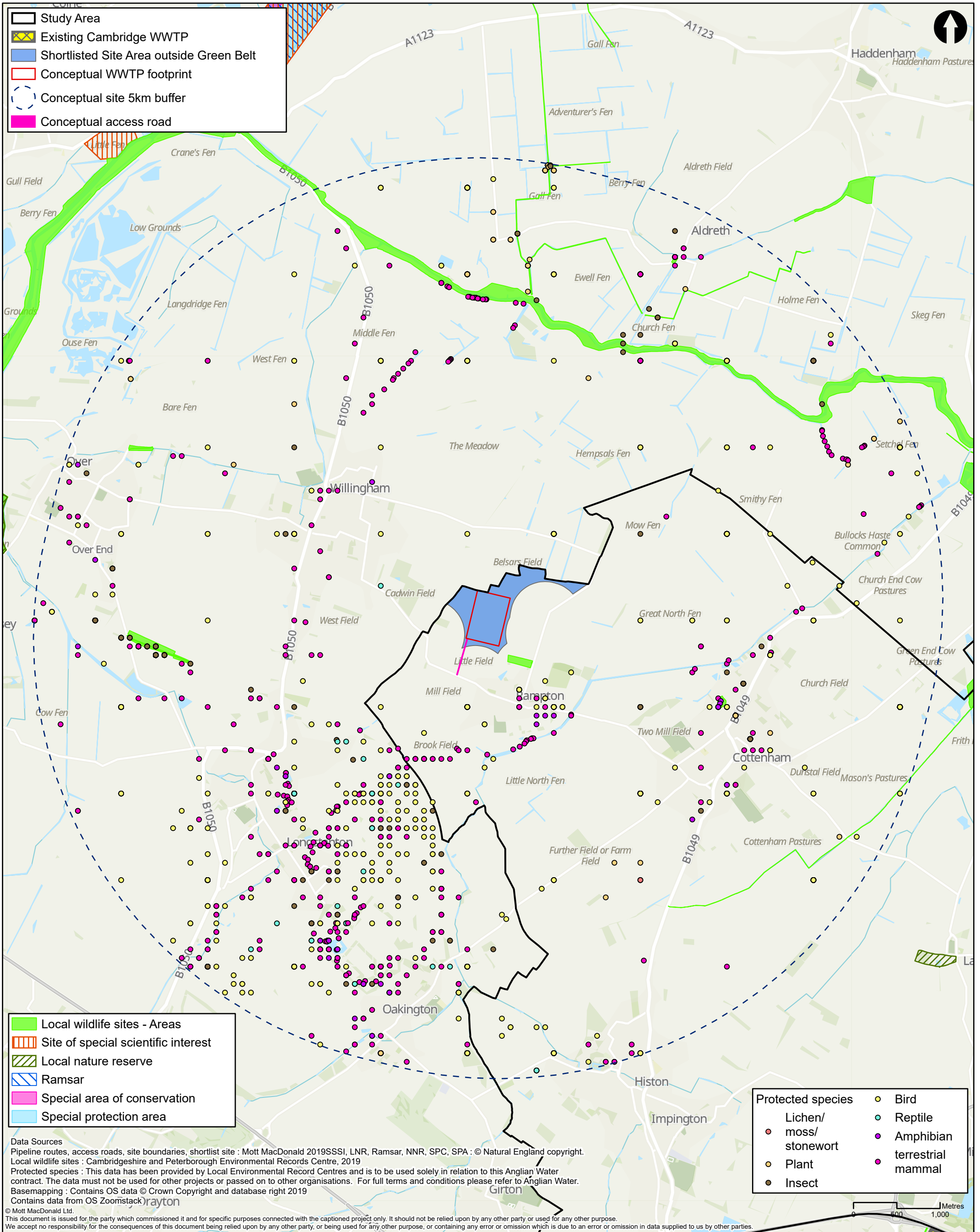
Site area	Case reference	Species	Location	Approximate distance (km)	Details	Start date	End date
	2016-24336-EPS-MIT	Bat C-PIP	TL396674	3.3	Allowed destruction of a resting place	06/12/2016 01/07/2016	06/12/2016 01/07/2021
	2017-29294-EPS-MIT-2	Great crested newt	TL401666	2.6	Allowed damage and destruction of a resting place	29/09/2017	30/09/2018
	EPSM2011-3249	Bat C-PIP, S-PIP	TL405662	2.2	Allowed destruction of a resting place	25/08/2011	30/11/2012
H	2017-29294-EPS-MIT-2	Great crested newt	TL401666	4.4	Allowed damage and destruction of a resting place	29/09/2017	30/09/2018
	EPSM2011-3249	Bat C-PIP, S-PIP	TL405662	3.9	Allowed destruction of a resting place	25/08/2011	30/11/2012
	2014-926-EPS-MIT	Great crested newt	TL426600	4.7	Allowed damage and destruction of a resting place	18/09/2014	31/08/2031
	EPSM2010-2444	Bat C-PIP, Whiskered bat (WHISK), Brandt's bat (BRAN)	TL431604	4.1	Allowed destruction of a resting place	26/10/2010	25/10/2012
	EPSM2010-2402	Bat C-PIP, S-PIP	TL483615	3.7	Allowed destruction of a resting place	18/10/2010	30/09/2011
	2014-775-EPS-MIT	Bat Brown long-eared (BLE), C-PIP, Noctule, S-PIP	TL480629	2.9	Allowed destruction of a resting place	01/01/2001	01/01/2001
I	EPSM2010-2444	Bat C-PIP, WHISK, BRAN	TL431604	4.1	Allowed destruction of a resting place	26/10/2010	25/10/2012
	EPSM2011-3699	Bat S-PIP	TL445588	5.0	Allowed impact and destruction of breeding site Allowed destruction of a breeding site	01/02/2012	30/09/2013
	EPSM2010-2402	Bat C-PIP, S-PIP	TL483615	3.7	Allowed destruction of a resting place	18/10/2010	30/09/2011
	2014-775-EPS-MIT	Bat	TL480629	2.9	Allowed destruction of a resting place	01/01/2001	01/01/2001



Site area	Case reference	Species	Location	Approximate distance (km)	Details	Start date	End date
		BLE, C-PIP, Noctule, S-PIP					
J	EPSM2010-2444	Bat C-PIP, WHISK, BRAN	TL431604	2.8	Allowed destruction of a resting place	26/10/2010	25/10/2012
	EPSM2011-3699	Bat S-PIP	TL445588	3.5	Allowed impact and destruction of breeding site Allowed destruction of a breeding site	01/02/2012	30/09/2013
	EPSM2010-2402	Bat C-PIP, S-PIP	TL483615	2.0	Allowed destruction of a resting place	18/10/2010	30/09/2011
	2014-775-EPS-MIT	Bat BLE, C-PIP, Noctule, S-PIP	TL482629	1.8	Allowed destruction of a resting place	01/01/2001	01/01/2001
	2016-24626-EPS-MIT	Bat BLE, C-PIP, S-PIP	TL440576	4.7	Allowed destruction and damage of a resting place and breeding site	01/09/2016	31/08/2021
	2014-926-EPS-MIT	Great crested Newt	TL425600	3.5	Allowed destruction and damage of a resting place	18/09/2014	31/08/2031
	EPSM2012-3992	Bat C-PIP	TL472576	4.6	Allowed destruction of a resting place	12/03/2012	30/09/2014
L	2014-775-EPS-MIT	Bat BLE, C-PIP, S-PIP	TL482629	1.6	Allowed destruction of a resting place	01/01/2001	01/01/2001
	EPSM2012-4691	Bat BLE, C-PIP, Noctule, S-PIP,	TL482629	1.6	Allowed destruction of a resting place	16/05/2013	31/03/2015
	EPSM2010-2402	Bat C-PIP, S-PIP	TL482614	0.8	Allowed destruction of a resting place	18/10/2010	30/09/2011
	2017-28568-EPS-MIT	Bat BLE, C-PIP, Natterer's bat (NATT)	TL531630	3.3	Allowed destruction and damage of a resting place	25/04/2017	30/04/2027
	EPSM2012-3992	Bat	TL473576	3.8	Allowed destruction of a resting place	12/03/2012	30/09/2014

Site area	Case reference	Species	Location	Approximate distance (km)	Details	Start date	End date
		C-PIP					
	2017-31279-EPS-MIT	Bat C-PIP	TL481564	4.3	Allowed destruction of a resting place	19/10/2017	31/10/2018
	EPSM2011-3699	Bat S-PIP	TL445587	5.0	Allowed impact and destruction of breeding site	01/02/2012	30/09/2013

## B. Drawings

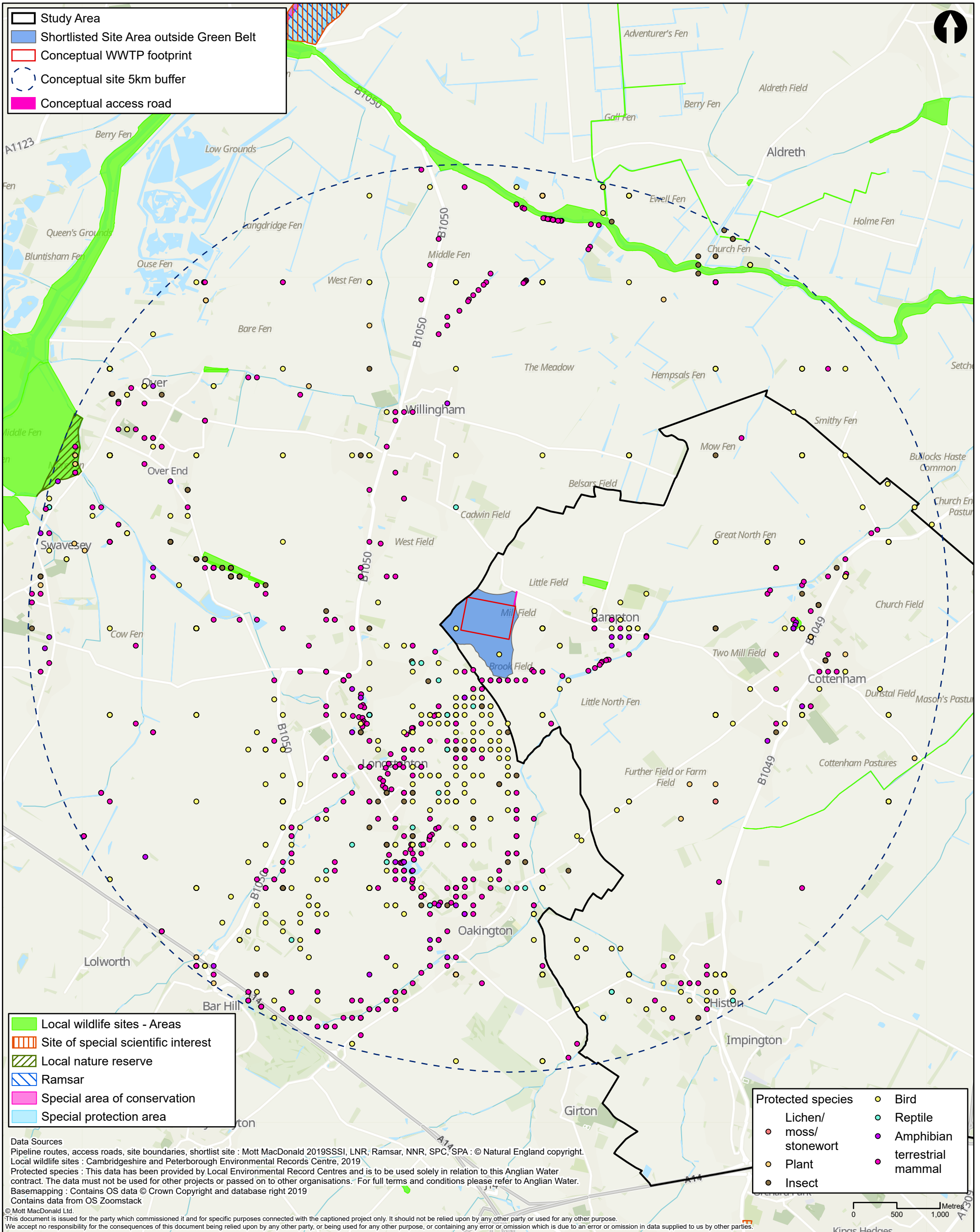


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Protected species	
● Bird	● Reptile
● Lichen/moss/stonewort	● Amphibian
● Plant	● terrestrial mammal
● Insect	

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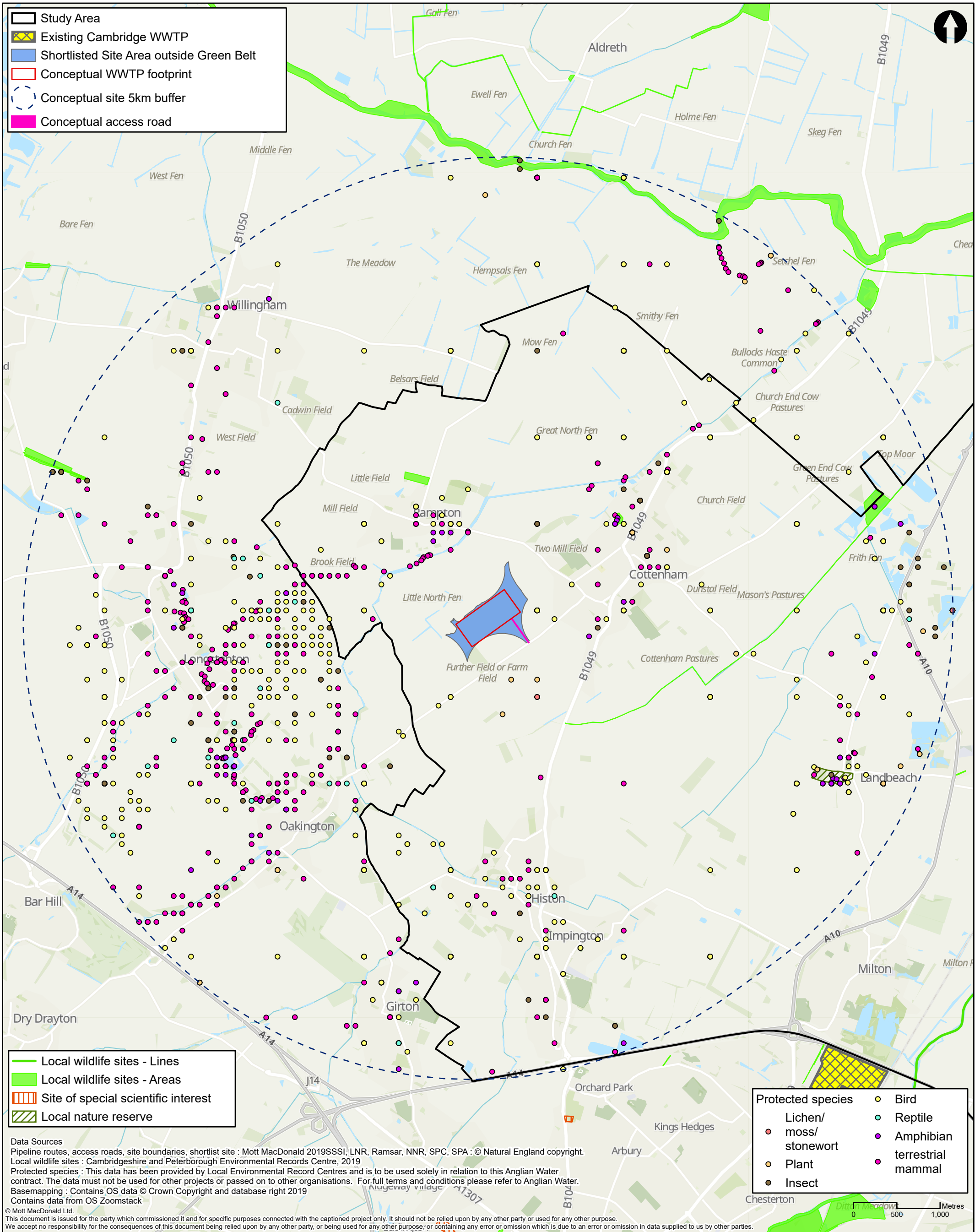
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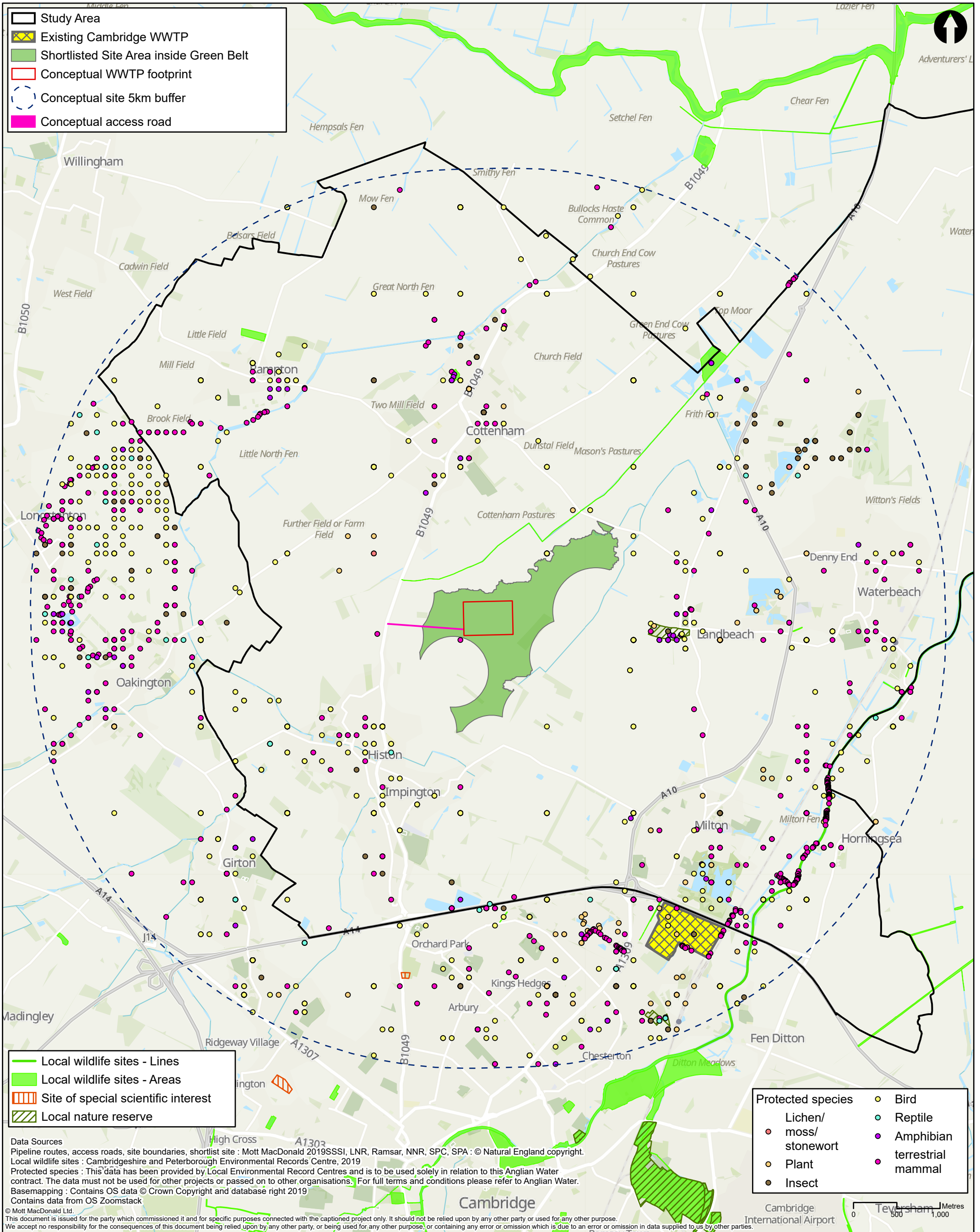
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									Checked M Rickard											
									Approved J Newton											
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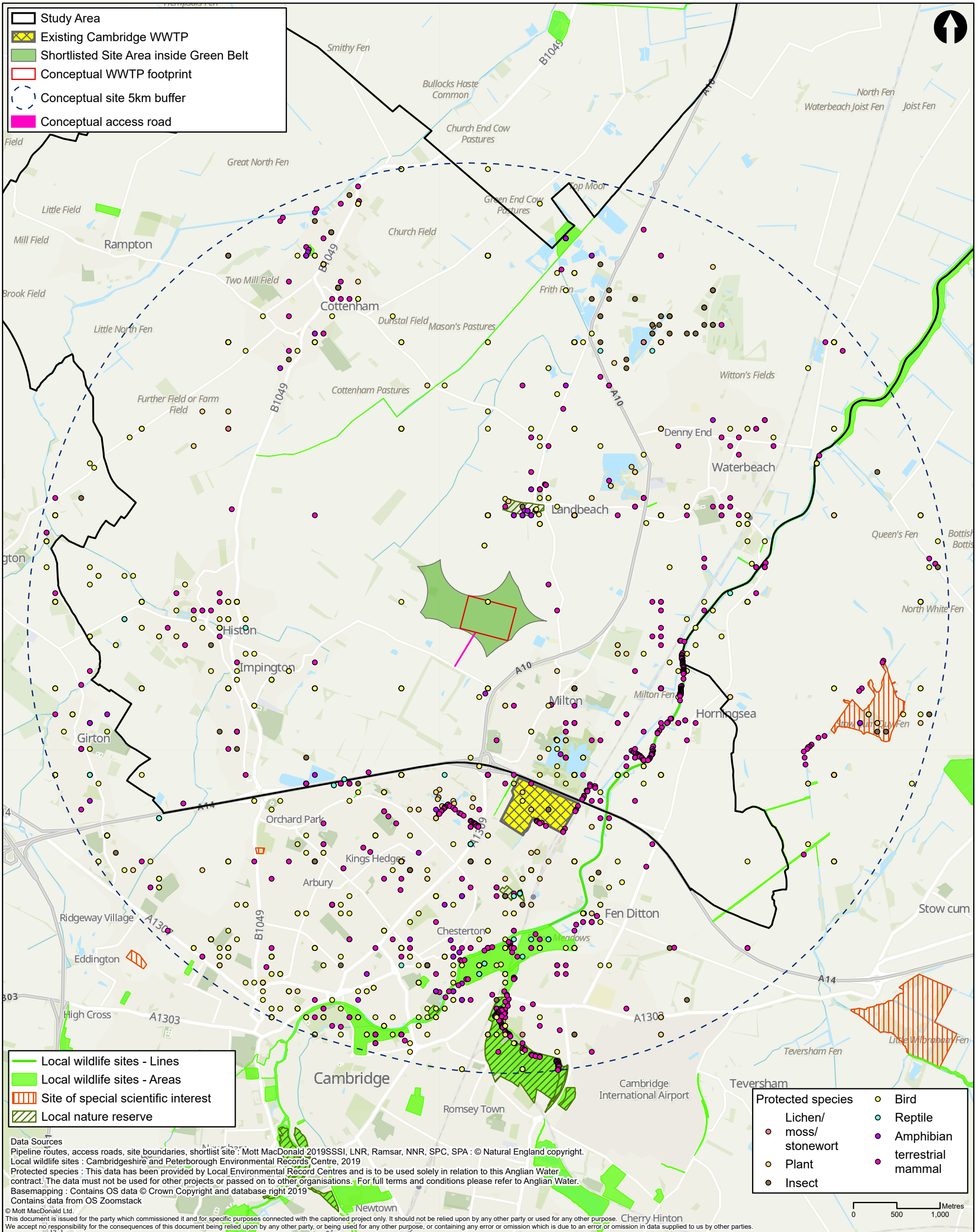
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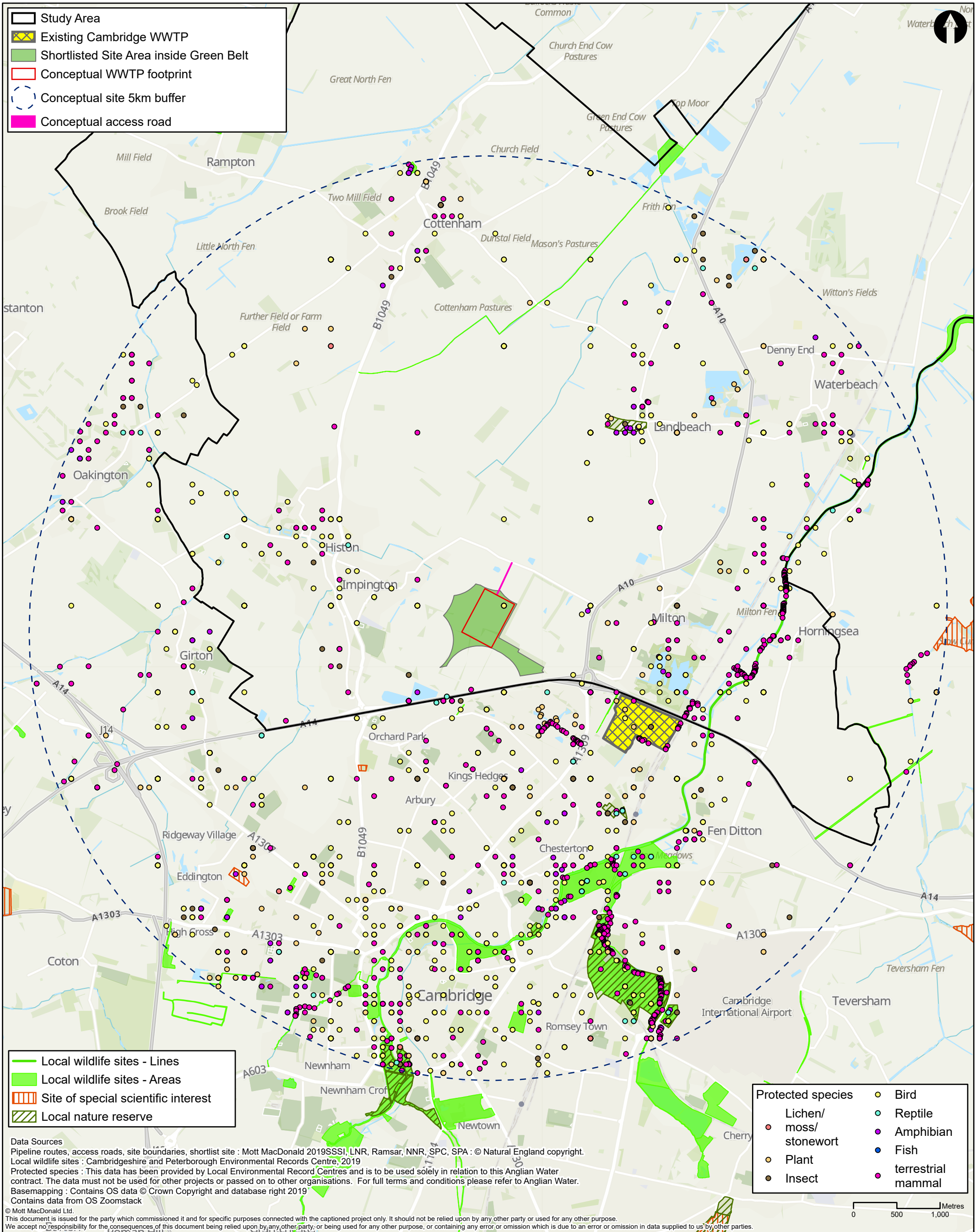


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									Checked M Rickard												
									Approved J Newton												
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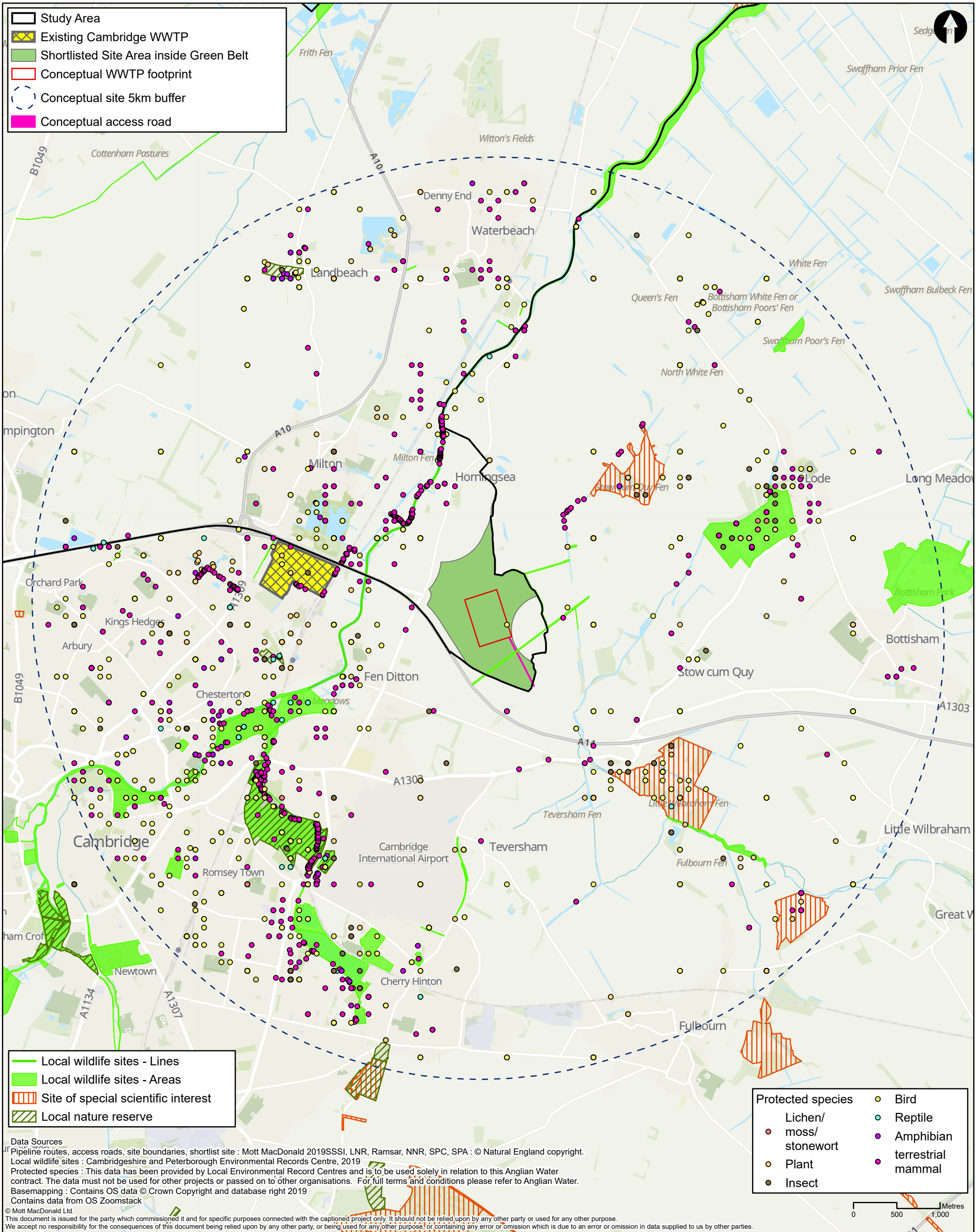




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# **CWWTPR Project - Stage 3 Fine Screening**

Historic Environment Appraisal

1 July 2020



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# **CWWTPR Project - Stage 3 Fine Screening**

## **Historic Environment Appraisal**

1 July 2020



**Document reference:** 409071 | 06HEA | C

**Information class:** Standard

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# Executive summary

This high-level Historic Environment appraisal forms part of Stage 3: Fine Screening for site selection for Cambridge WWTP, conducted by Mott Macdonald for Anglia Water. This heritage appraisal identifies the potential heritage risks and constraints for the shortlisted site areas and their treated effluent discharge pipeline options. A historic environment baseline for each was comprised from available information. This was used to inform the assessment of the archaeological potential of each site area and the potential risks and constraints for the shortlisted site areas. RAG values were assigned based on the outcome of these impact assessments.

Site areas A, B and H were given a green RAG rating. The development of site area B would especially represent lower potential risk of impacting the historic environment. Sites I, J, L and C were assigned an amber RAG rating, due to their high archaeological potential. Sites I, J and L represent especially high potential impact on the historic environment due to the very high archaeological potential.

The treated effluent discharge pipeline routes for site areas H and I have been assigned a green RAG rating, as there is only risk to heritage assets of low value. The route for site areas A, B and C have been assigned an amber RAG rating, due to an asset of potentially moderate value within the route. The route for site area J is assigned amber due to high archaeological potential on the former Roman Road it crosses. The route for site area L was assigned an amber RAG rating due to high archaeological potential and minor, temporary impact on the setting of designated heritage assets.

The proposed treated effluent discharge pipeline from site areas A, B, C, H, I and J poses no potential impact to designated heritage assets or their settings. The proposed treated effluent discharge pipeline route for site area L could result in minor, temporary change within the setting of designated heritage assets, which may negatively impact their significance during the construction period. The treated effluent discharge pipeline from site areas A, B and C crosses remains identified in the HER with potential moderate value. The treated effluent discharge pipelines for all site areas except I and H cross known assets identified in the HER, with anticipated low value. The route for site areas A, B, C, and H crosses Akeman Street former Roman Road at a point of low archaeological potential due to previous development. The treated effluent discharge pipeline from site areas J and L crosses areas of high archaeological potential.

It is recommended that consultation is undertaken with the Cambridgeshire Historic Environment Team, (archaeological advisors for South Cambridgeshire District Council) and Historic England, following the selection of the chosen option but before detailed design. As well as a detailed assessment of the final scheme, non-intrusive archaeological surveys (geophysical survey and remote sensing assessment) and intrusive archaeological evaluation is likely to be required by the stakeholders prior to the planning submission for the scheme. Time in the pre-submission programme, for these works, should be allowed for.

# 1 Introduction

## 1.1 Context

This high-level Historic Environment appraisal forms part of Stage 3: Fine Screening for site selection for Cambridge WWTP, conducted by Mott Macdonald for Anglia Water. This heritage appraisal identifies the potential heritage risks and constraints for the shortlisted site areas and their treated effluent discharge pipeline options. A proposed footprint for the scheme has been provided within each shortlisted site area, following Stage 2 and hereafter these footprints are considered as the potential scheme boundary for each site area. The discussions of the treated effluent discharge pipeline for each site area consider a 50m buffer zone either side, creating a study area of a 100m corridor.

## 1.2 Scheme options

Following coarse screening of site areas (Stage 2) for the Cambridge WWTP Relocation Project the following site areas have been identified for the project:

- Site area A - located north of Rampton Road, between the points 52.2980N,0.0862E; 52.2989N,0.0808E; 52.3038N,0.0829E and 52.3029N,0.0884E.
- Site area B - located between west of Rampton, between the points 52.2918N,0.0668E; 52.2951N,0.0680E; 52.2941N,0.0761E; 52.2907N,0.07495E.
- Site area C - located north of Oakington Road, between the points 52.2787N,0.0983E; 52.2811N,0.0957E; 52.2845N,0.1040E and 52.2821N,0.1067E.
- Site area H - located east of Cottenham Road, between the points 52.2680N,0.1240E; 52.2679N,0.1322E; 52.2644N,0.1323E and 52.2645N,0.1239E.
- Site area I - located north-east of Milton, between the points 52.2504N,0.1553E; 52.2519N,0.1473E; 52.2552N,0.1489E and 52.253801N,0.1569E.
- Site area J - located east of Impington, between the points 52.2462N,0.1389E; 52.2415N,0.1348E; 52.2423N,0.1298E and 52.2476N,0.1339E.
- Site area L- located southeast of Milton between the points 52.2295N, 0.1877E; 52.2305N, 0.1931; 52.2246N, 0.1899E; and 52.2256N, 0.1954E.

All have a footprint of c.390m by 570m, with the exception of site area C which has a footprint of 688m by 320m. Further details of these site area locations are available within the principle Phase 3: Fine Screening document.

## 1.3 Methodology

Information on the historic environment has been collected for each shortlisted site area and within a 500m buffer of the site boundaries. This buffer was chosen to encompass heritage assets which may experience direct impact or significant setting alteration to be examined in greater depth than during previous site selection stages. The potential for impact on the setting of designated heritage assets within a wider study area was considered during Stage 2: Coarse Screening.

Information has also been collected for the routes of the proposed treated effluent pipelines so that the potential on the historic environment of constructing the pipelines could be assessed.

The information collected comprised:

- Designated Heritage Assets - Those offered specific legal protection due to their heritage significance, which includes: World Heritage Sites, Listed Buildings, Scheduled Monuments, Registered Parks and Gardens, Registered Historic Battlefields, Conservation Areas and Ancient Woodlands.
- Non-Designated Heritage Assets - Those whose importance is acknowledged and are identified as having a degree of significance meriting consideration in planning decisions, but which are not formally designated assets, including: Locally Listed Buildings, Historic Buildings, Historic Parks and Gardens, Historic Battlefields, Monuments, Sites, Places, Areas and Landscapes.
- Data relating to these assets was obtained from the following sources;
- The National Heritage List for England (NHLE) as held by Historic England<sup>1</sup>;
- The Cambridgeshire Historic Environment Record (CHER);
- Geological Mapping information from The British Geological Society (BGS)<sup>2</sup>;
- Available online heritage and archaeology reports, including those held by the Archaeological Data Service<sup>3</sup>, and;
- Available online historic maps.

From this baseline an assessment of the archaeological potential of these site areas was undertaken. A subsequent high-level assessment of the potential risks and constraints relating to the historic environment, based on the available information for each shortlisted site area, was undertaken. RAG values were assigned based on the outcome of these impact assessments. Recommendations based on these outcomes can be found at the end of this document.

Where the value of heritage assets is discussed, the following criteria have been used:

- High Value - a designated heritage asset of potentially national importance, including scheduled monuments and grade I and II\* listed assets.
- Moderate Value - a heritage asset of regional importance, including non-designated assets and grade II listed buildings.
- Low value - non designated assets of local importance or no notable significance.

## 1.4 Assumptions and limitations

This appraisal excludes the review of relevant material held by the Cambridgeshire Archives and the University of Cambridge Library. It also has not included historic walkover surveys or consultation with historic environment stakeholders.

An assessment of the relevant planning policy has not been undertaken at this stage.

An assessment of impact was not undertaken in the production of this document. A discussion of potential risks to and constraints posed by the historic environment can be found in section 4, it does not include a full review of the potential impact of the scheme on heritage assets.

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<sup>1</sup> Historic England (2020) The National Heritage List for England [online]. Available at: <https://historicengland.org.uk/listing/the-list/> (Accessed February 2020)

<sup>2</sup> British geological Society (2020) Geological map of Britain [online] Available at: [www.mapapps.bgs.ac.uk](http://www.mapapps.bgs.ac.uk) (Accessed February 2020)

<sup>3</sup> The archaeological Data Service (2020) Available at: <https://archaeologydataservice.ac.uk/> (Accessed February 2020)

Archaeological information about the site area is reliant on the opportunity for research. Information contained in the Cambridgeshire Historic Environment Record (HER) can be limited. Records of events, finds and monuments are often based upon random opportunities for research and reported findings. Therefore, CHER data is not comprehensive and a lack of data in an area does not equate to a lack of archaeology. Although, some further research has been undertaken for the production of this appraisal the data contained within it should not be considered entirely comprehensive.

Historic maps cannot be considered accurate by the standards of modern cartography, their interpretation has been approached with caution in this appraisal, but the information extracted is still somewhat subjective.

## 2 Baselines

### 2.1 Site area A

#### 2.1.1 Geography and topography

The bedrock geology of Site area A is Ampthill Clay Formation – Mudstone. A sedimentary bedrock formed 157 to 164 years ago. The overlying drift is predominantly unrecorded, with some areas of River Terrace Deposits, 3 – Sand and Gravel, formed up to 3 million years ago.

The topography of Site area A is very flat and low, ranging from approximately 6-9 metres above ordnance datum (AOD). The site area is crossed by several small waterways, largely manmade for drainage. The area is currently farmland. This is characteristic of the lowland area lying to the edge of the Fenlands coastal plain.

#### 2.1.2 Designated heritage assets

There are no designated heritage assets within the site area or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage assets are Belsar's Hill Ringwork (NHLE: 1010368), 220m north of the study area, and Giant's Hill Motte Castle (NHLE: 1011778), 215m south-west.

The 100m corridor study area for the treated effluent discharge pipeline route for this site area includes no designated assets. The treated effluent discharge pipeline will avoid the nearby Giant's Hill Motte (NHLE: 1011778) by over 1km.

#### 2.1.3 Non-designated heritage assets

There are no non-designated assets identified in the CHER within site area A.

There are four non-designated assets identified within the 500m buffer zone for site area A, namely:

- An undated circular cropmark (CHER: 09555) 220m north-west of the scheme.
- Unstratified, undated find spot (CHER: MCB16662) 480m south-east.
- Unstratified, Roman and Victorian pottery findspot (MCB20163) 495m south-east.
- A cropmark, representing possibly medieval field boundaries (CHER: MCB25756) 365m south-east.

There are four non-designated assets within the 100m corridor for the proposed treated effluent discharge pipeline route for Site area A:

- A Roman pottery findspot (CHER 05285) This findspot is also discussed for site area B, as it falls within the 500m buffer for this site area.
- Cropmarks representing an Iron Age enclosure site (CHER: MCB21414).
- The site of Westwick Hall Park and Gardens (CHER: MCB14424) This asset is also discussed for site area C, as it falls within the 500m buffer for this site area.
- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

These assets are located on the access to both the new and existing proposed treated effluent discharge pipeline routes.

There are no non-designated assets identified in the CHER on the route identified for the proposed access road for site area A.

### 2.1.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site area and the 500m buffer zone, its results are summarised below.

**Table 1: Cartographic Regression of Site area A**

Title	Date	Description
A Map of the Great Level of the Fens	1684 (1720)	The study area for Site area A is shown to the very edge of the fens marked on this map. There are several channels crossing the area from the waterways, which are plotted in their approximate modern location.
OS county series: Cambridgeshire and Isle of Ely	1888	The map depicts the area as fields, marked Belsar's Field primarily one large field across Site area A. A road marked Haven Drove runs north-south west of the scheme area to Belsar's Ring Scheduled Monument, it meets Sneesby's Road, which leaves Willingham to the west on the approximate route of modern Schole Road. Fields in the south are marked Little Field. The buildings of Topfield Farm, to the east of the scheme area, and Long Swarth Barn (which is labelled) to the north are depicted.
OS county series: Cambridgeshire and Isle of Ely	1890-1891	This map depicts the same as the above, with no significant change between the two in the study area.
OS county series: Cambridgeshire and Isle of Ely	1902	This map still depicts the area as fields with the same features as the two above. Topfield Farm is shown with more buildings and is labelled. Orchards have been planted in the north-west of the study area, south of Belsar's Hill Scheduled Monument.
OS county series: Cambridgeshire and Isle of Ely	1903	This map depicts the area very similar to the above, with a slight expansion of the orchard in the north-east of the study area.
OS county series: Cambridgeshire and Isle of Ely	1952	Further buildings are shown on the near side of Cow Lane, appearing to represent another house or farmstead south of Topfield Farm. The orchards in the north-east of the study area have significantly expanded southwards. Smaller fields in the south of the area, towards Rampton Road, have also been populated by trees and show further divisions. The rest of the study area, which contains the scheme area, is still displayed as single large field. Haven Drove is shown surrounded by trees and is less obviously marked on this map. Some small buildings are shown at the intersection of Rampton Road and Haven Drove, likely one is the Fox.
OS county series: Cambridgeshire and Isle of Ely	1958	This map depicts the area the same as that above, with no significant changes.
OS Plan	1974-1976	Slightly fewer orchards are present in the east of the study area, especially near Belsar's Hill Scheduled Monument. Drains are shown within the large field that comprises much of the scheme area. Haven Drove is now represented by a dashed line and labelled (track). There are more buildings at the intersection of Rampton Road and Haven Drove. The land here has been further divided, apparently to provide gardens for these houses. Long Swarth Barn is no longer labelled. Sneesby's Road is now labelled Schole Road.
OS Plan	1979-1981	The buildings south of Topfield Farm are now labelled New Farm. There are fewer trees still in Belsar's Field, but some of the orchard remains. Orchards to the south, in Little Field, are largely removed. A new building is shown in this area, immediately north of Rampton Road, with a track leading north into the large field. Rampton, to the south-east has expanded with some new houses and gardens and Ashley Farm on Cow Lane. The northern section of Haven Drove is

Title	Date	Description
now also labelled (track) as is Schole Road, although this is represented by solid (not dashed) lines.		

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for Site area A:

- The B1049, crossed by the proposed treated effluent discharge pipeline at 52.2735° N, 0.1157° E, is shown in its current location on historic maps.
- The route of Mere Way/Akeman street Roman road is shown to cross the proposed treated effluent discharge pipeline route at 52.2592° N, 0.1510° E. This is shown on the 1886 OS country series map and subsequent maps, Akeman Street is first represented as a road, as opposed to a track, on the treated effluent discharge pipeline route in the 1969 OS Plan.
- Westwick Hall Park and Gardens is notably not present by the drawing of the 1888 OS County series map, this area is represented as fields.

The remainder of the area for the proposed treated effluent discharge pipeline route is depicted as farmland with tracks, with the only substantial change over time being in the field boundaries.

### 2.1.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of Site area A and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

There was likely some prehistoric settlement within the wider landscape of Site area A, but no specific prehistoric activity is identified within the option area. There is a precedent for prehistoric activity on the fen edge and on the changing islands within the fens<sup>4</sup>. The areas of the Fenlands which were raised, and therefore suitable for occupation, changed over time as the flow of rivers and sea levels changed. There are numerous lithic scatters and some settlement site areas, dating largely from the Mesolithic to the Romano-British period, identified throughout the landscape. Site area A lies on the edge of the fens and the land is slightly raised, it therefore may have seen activity in all periods, however there are no specific sites recorded within Site area A by the Fenlands project and the lower topography of the site area makes it a less suitable candidate for settlement. Undated cropmarks over 200m from the scheme area, in several directions, could represent prehistoric settlement (CHER: 09555, MCB1662, MCB25756) and Belsar's Hill ringwork (NHLE: 1010368) also signifies activity of this period 500m north of Site area A.

The early medieval period typically returns limited archaeological evidence, however there is some evidence for the use of the land at Site area A during this period. The Giant's Hill scheduled monument (NHLE: 1011778) to the south-east was occupied in this period. Furthermore, an archaeological evaluation of land off Cow Lane<sup>5</sup>, c.500m south-east of Site area A, found evidence of early medieval activity, primarily in the form of pottery sherds. As well as evidence of subsequent farming in the later medieval and post medieval periods.

There is no specific evidence for the use of Site area A during the medieval period, however it is reasonable to make the assumption that, like much of the surrounding area, it was used for farming. Continued use of this site area for post medieval agriculture is supported by its

<sup>4</sup> East Anglian Archaeology (1996) *The Fenland Project, Number 10: Cambridgeshire survey, Isle of Ely and Wisbech*.

<sup>5</sup> Archaeological Solutions Ltd. (2017) *38 Cow Lane, Rampton, Cambridgeshire: An archaeological evaluation*.



representation in historic maps. Haven Drove was an established route in this period and used to cross the proposed scheme area during this period.

Today Site area A has an agricultural land use.

## 2.2 Site area B

### 2.2.1 Geography and topography

The bedrock geology of site area A is Ampthill Clay Formation – Mudstone. A sedimentary bedrock formed 157 to 164 years ago. The overlying drift has not been recorded.

The topography of site area B is very flat and low, ranging from approximately 5-7.5m AOD. There is one area of slightly higher ground, 10m AOD, in the centre-south of site area B. The site is crossed by several small waterways, largely manmade for drainage. The area is currently farmland. This is characteristic of the lowland area lying to the edge of the Fenlands coastal plain.

### 2.2.2 Designated heritage assets

There are no designated heritage assets within the site or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage assets are the listed buildings within Rampton. The nearest of these is 31, High Street (NHLE: 1127278), c270m east.

The 100m corridor study area for the treated effluent discharge pipeline route for this site includes no designated assets.

### 2.2.3 Non-designated heritage assets

There are two non-designated assets identified in the CHER within site area B, these are:

- Ridge and furrow cropmarks (CHER: MCB20966)
- Post medieval field boundaries (CHER: MCB25758)

There are thirteen non-designated assets identified within the 500m buffer zone for site area B, namely:

- A possible windmill mound (CHER: MCB25757) 100m south of the scheme.
- A Roman pottery findspot (CHER: 05285) 190m south-east.
- Ridge and furrow earthworks, probably medieval (CHER: MCB23770) 450m east.
- The possible site of Rampton early medieval village (CHER:08163) 350m east.
- A post medieval pottery findspot (CHER: MCB23757) 430m east.
- A possible rabbit warren (CHER: MCB17325) 180m north.
- Ridge and furrow cropmarks (CHER: MCB20965) 400m north.
- A ditch of unknown date (CHER: MCB20964) 490m north-west.
- Cropmarks of undated rectilinear enclosures (CHER: MCB24973) 200m north-west.
- Cropmarks of an undated ring ditch (CHER: MCB24972) 400m west.
- Ridge and furrow cropmarks (CHER: MCB22760) 420m west.
- An undated pit and ditch (MCB17967) 285m south-west.

- The dismantled Cambridge and St Ives railway branch (CHER: MCB119611), following the route of the current railway in the south-west.

There are four non-designated assets within the 100m corridor for the proposed treated effluent discharge pipeline route for site area B:

- A Roman pottery findspot (CHER 05285) This is also discussed above for site area B, as it falls within the 500m buffer for this site itself.
- Cropmarks representing an Iron Age enclosure site (CHER: MCB21414).
- The site of Westwick Hall Park and Gardens (CHER: MCB14424) This asset is also discussed for site area C, as it falls within the 500m buffer for this site.
- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

These assets are located on the access to both the new and existing proposed treated effluent discharge pipeline routes.

There are no non-designated assets identified in the CHER on the route identified for the proposed access road for site area B.

#### 2.2.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site and the 500m buffer zone, its results are summarised below.

**Table 2: Cartographic Regression of site area B**

Title	Date	Description
OS county series: Cambridgeshire and Isle of Ely	1887- 1888	This map depicts the study area as mostly large open fields. Where Rampton Road turns south by The Fox & Hounds (sometimes only labelled the fox) there is a trackway continuing south into Mill Field, which contains the scheme area. West of this trackway are several smaller fields, one of which contains an orchard. East is a farm building, not named. Pauley's Drove runs roughly north-south at the eastern border of Mill Field, connecting Rampton Road to Reynold's Drove. At the turning to Pauley's Drove a house there is a building with a private garden. A road branches west from Pauley's Drove to join King Street. There are several small field boundaries within Mill Field, some of which feature trees, breaking it into a few large areas. A pond is present in the middle. Mere way is shown running south-east to north-west towards the western boundary of the study area and is displayed as a track. The Cambridge St Ives Branch of the rail line is south of the site (outside the study area) and labelled, Reynold's Drove appears to cross or pass under the line.
OS county series: Cambridgeshire and Isle of Ely	1890- 1891	The track heading south from Rampton Road is more clearly delineated and a brook is shown in the south, otherwise no significant change is depicted from the above map.
OS county series: Cambridgeshire and Isle of Ely	1902	Fields in the east of the study area have been further divided and three now contain orchards. Allotments are labelled where Pauley's Drove meets King Street. One orchard has also been planted in the west. Mere way is much less apparent and represented by the same dashed line as other route, labelled 'track'.
OS county series: Cambridgeshire and Isle of Ely	1903	This map depicts the area with no significant change from that above, except that south of King Street Pauley's Drove is now labelled Cuckoo Lane.
OS county series: Cambridgeshire and Isle of Ely (partial)	1938	A new well is depicted within Mill Field, which has been divided into a number of smaller fields. Further buildings are also seen at the turning to Pauley's Drove, towards Rampton. No orchards are now shown in the south of the site. Changes in the west of the site are not observable in this partial map.

Title	Date	Description
OS county series: Cambridgeshire and Isle of Ely	1952	The majority of enclosures at Mill Field are now shown as orchards. The well in the centre of the site is more clearly labelled. Mere Way, especially towards the site, is shown less clearly. Within site area B, approximately in line with where Mere Way would cross the site if continued, is a labelled findspot 'Roman Pottery found AD 1915'. The well is not labelled.
OS Plan	1958	Mere way is now labelled Stanton Mere Way. There are no other significant changes depicted from the above map.
OS Plan	1974	Pauley's Drove is now labelled 'Track'. There is a new house with garden within one of the orchards in the north of the study area. The well is no longer labelled in the centre of the site. There are slightly fewer trees in the south and brook is now labelled Brook Field here.
OS Plan	1981-1983	Cuckoo Lane is now labelled 'track'. The majority of trees and orchards in the south of the study are now gone. There are several smaller tracks in the west and it is clearly marked where Stanton Mere Way becomes a track rather than a road.

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for site area B:

- The B1049, crossed by the proposed treated effluent discharge pipelines at 52.2735° N, 0.1157° E, is shown in its current location on historic maps.
- The route of Mere Way/Akeman street Roman road is shown to cross the proposed treated effluent discharge pipeline route at 52.2592° N, 0.1510° E. This is shown on the 1886 OS country series map and subsequent maps, Akeman Street is first represented as a road, as opposed to a track, on the treated effluent discharge pipeline route in the 1969 OS Plan.
- Westwick Hall Park and Gardens is notably not present by the mapping of the 1888 OS County series map, this area is represented as fields.

The remainder of the area for the proposed treated effluent discharge pipeline route is depicted as farmland with tracks, with the only substantial change over time being in the field boundaries.

### 2.2.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of site area B and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

The use of the site during prehistory is undetermined. There are no dated CHER assets relating to this period within site area B, however the wider landscape shows evidence of activity for this period and the slightly raised topography of site area B, makes it more suitable for prehistoric occupation, therefore activity of this period cannot be ruled out. Four undated cropmarks (CHER: MCB20964, MCB24973, MCB24972, MCB17967) within the study area could relate to the prehistoric, but this is speculative, and they may date up to the medieval period. There has been significant archaeological investigation at Northstowe, to the south-west of site area B, finding primarily Late Iron Age to Romano-British and medieval to post medieval remains<sup>6</sup>. However, the ability of this to inform on the history of site area B is limited, as it is 600m from the Northstowe development, and the land is higher than in, the proposed scheme area. The only specific evidence of Roman Britain within the study area is an isolated pottery findspot (CHER: 05285).

<sup>6</sup> Cambridge Archaeology unit (2012) *A written scheme of investigation for Archaeological Mitigation on Phase 1, Northstowe, Cambridgeshire*

There is no specific evidence for the use of site area B during the early medieval period, it is further from the Giant's Hill scheduled monument (NHLE: 1011778) than site area A and local archaeological reports do not mention activity of this period for this area.

The area encompassed by site area B may have been used for agriculture, by the residents of the medieval village at Rampton (CHER: 08163) due to its proximity. Medieval and post medieval farming is evidenced in the CHER data for the scheme area and the surrounding buffer zone, particularly by the presence of ridge and furrow and field boundaries (CHER: MCB20966, MCB25758, MCB23770, MCB20965, MCB22760). This soundly establishes the use of the site for agriculture, as supported by its representation on historic maps. The only significant change to the modern period is the lesser use of Pauley's Drove and the planting of orchards during the early 20th century, since removed.

## 2.3 Site C

### 2.3.1 Geography and topography

The bedrock geology is primarily Kimmeridge Clay Formation – Mudstone, a sedimentary bedrock formed 152 to 157 years ago. In the east of the site is Woburn Sands Formation – Sandstone, also a sedimentary bedrock formed approximately 101 to 126 million years ago. The superficial geology is not recorded by the BGS.

The topography of site area C is quite level, with a height of between approximately 10 and 14m AOD. The land rises towards Cottenham in the north-east and falls swiftly north and west of the site into land characteristic of the lowland area lying to the edge of the Fenlands coastal plain. The area is currently farmland.

### 2.3.2 Designated heritage assets

There are no designated heritage assets within the site or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated asset is Tower Mill in Cottenham (NHLE: 1164084), c.230m north-east.

The 100m corridor study area for the treated effluent discharge pipeline route for this site includes no designated assets.

### 2.3.3 Non-designated heritage assets

There are no non-designated assets identified in the CHER within site area C.

There are twenty-two non-designated assets identified within the 500m buffer zone for site area C, namely:

- Field boundary and ridge and furrow cropmarks (CHER: MCB25738) 385m south-west of the scheme.
- Cropmarks representing Iron Age or Roman enclosures at Cuckoo Hill Farm (CHER: MCB24990) 395m west.
- The former site of Westwick Hall Park and Gardens (CHER: 12301) 440m west.
- The site of a 19th century Farmhouse (CHER: MCB23976) 400m north-west.
- Early Iron Age to Roman enclosures (CHER: 01787) 250m north-west.
- A post medieval sand and gravel extraction site (CHER: MCB25742) 390m north-west.

- Undated rectangular enclosures (CHER: 07800) 290m north-west.
- Early Iron Age to Roman curvilinear enclosures (CHER MCB21164) 440m north-west.
- A post medieval sand and gravel extraction site (CHER: MCB25742) 470m north-west.
- Undated enclosure cropmark, Cottenham (CHER: 11053) 470m north-west
- Medieval to 17th century ridge and furrow (CHER: MCB20804) 400m north-east.
- A possible bank cropmark of unknown date (CHER: 05190) 60m north.
- Iron Age to Roman enclosures (CHER: 09547) 70m north-east.
- A possible post medieval sand and gravel extraction site (CHER: MCB25747) 315m north-east.
- Roman ditch, enclosure, well and pit (CHER: MCB20913) 320m north-east.
- Late Iron Age ditch and ring ditch (CHER: MCB20801) 320m north-east.
- Late Iron Age to modern features (CHER: MCB20530) 340m north-east.
- Early Saxon features (CHER: MCB20802) 360m north-east
- Late Iron Age ring ditch (CHER: MCB20803) 445m north-east
- Iron Age and Roman settlement features (CHER: MCB23977) 270m north-east
- Roman ditches and medieval plough marks (CHER: MCB20471) 400m north-east
- Ridge and furrow cropmarks (CHER: MCB21417) 60m south-east

There are two non-designated assets identified in the CHER within the 100m corridor proposed treated effluent discharge pipeline route for site area C:

- Cropmarks representing an Iron Age enclosure site (CHER: MCB21414)
- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

There are no non-designated assets identified in the CHER on the route identified for the proposed access road for site area C.

### 2.3.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site and the 500m buffer zone, its results are summarised below.

**Table 3: Cartographic Regression of site area C**

Title	Date	Description
OS County Series: Cambridgeshire and Ely	1888	Rampton Road runs north of the site, its route is approximately the same as the modern road. The Engine House is present to the north of this and a house and orchards are shown in the location of modern-day Orchard Close, Cottenham. Oakington Road and the watercourse to the north-west of the scheme area also follow their modern routes. Cuckoo Drive and Cuckoo Lane are shown to the west; however the drive is shown as a track which extends to more than twice the length shown on modern maps. Cuckoo Lane extends to Oakington Road, becoming the winding Rampton Drive. At the intersection of Cuckoo Lane and Rampton Road Cuckoo Farm is shown and Cuckoo Bridge leads to a track heading west. North Fen Farm is also shown in approximately its modern location, as is Catch Water Drain bordering the land to its south. An orchard is shown towards Oakington Road, encompassing the south of proposed site area C. Otherwise, the study area is shown as fields, with some of the boundaries tree-lined, labelled as The Holme in the south-west and Two Mill Field in the north-east.
OS County Series: Cambridgeshire and Ely	1889- 1891	A pump is shown towards the end of Cuckoo Drive, at the entrance of which two small orchards or woodland areas are now shown. A track, running north-west to south-east, across the study area is shown parallel to cuckoo drive, to

Title	Date	Description
		its east along existing field boundaries. The boundaries surrounding the land at North Fen Farm are well defined and tree-lined, including Catch Water Drain.
OS County Series: Cambridgeshire and Ely	1902	More orchards and new Allotments are marked towards Oakington Road and surrounding Cuckoo Drive (now shown as a road for its full length) and Rampton Drive. The former track parallel to Cuckoo Drive is not shown. At least two houses are shown in the location of the modern-day Orchard Close in Cottenham.
OS County Series: Cambridgeshire and Ely	1903	There is no significant change shown from the previous map.
OS County Series: Cambridgeshire and Ely	1938	At the edge of Cottenham several houses have been built south of Rampton Road. Cuckoo Drive is renamed Cuckoo Drift, Rampton Drive is still shown as a trackway but now labelled Rampton Drift. A trackway leads north-west between these to a collection of buildings, not labelled. Fields and orchards in the south and south-east have been somewhat divided.
OS County Series: Cambridgeshire and Ely	1938- 1952	The Orchards here have been mostly replaced by Orchard Close, with new houses and gardens. In the south and south-west of the study area the fields have been further divided, leading to numerous new trackways, smaller fields and small orchards. Cuckoo Farm is no longer shown. A small building is shown north of Cuckoo Drive.
OS County Series: Cambridgeshire and Ely	1958	There is no significant change shown from the previous map.
OS Plan	1975	There are many fewer orchards in the south of the site and several fields have been reopened. New houses have been built adjoining Orchard Close and north of Oakington Road. There are more houses south of Rampton Road, with tracks leading south-west into the study area. Buildings and the northern half of the track between Rampton Drift and Cuckoo Drift (now also labelled 'track') are no longer shown. Buildings are shown at the terminus of the modern Rampton Drift, although the route at this time still continues north to meet Cuckoo Lane. Drains are labelled at the field boundaries in the west of the study area.
OS Plan	1981	Cuckoo Drift is shown as a track in the north. Several small tracks led into the fields from Rampington Road, only one of which still contains an orchard.

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for site area C:

- The B1049, crossed by the proposed treated effluent discharge pipeline at 52.2735° N, 0.1157° E, is shown in its current location on historic maps.
- The route of Mere Way/Akeman street Roman road is shown to cross the proposed treated effluent discharge pipeline route at 52.2592° N, 0.1510° E. This is shown on the 1886 OS country series map and subsequent maps, Akeman Street is first represented as a road, as opposed to a track, on the treated effluent discharge pipeline route in the 1969 OS Plan.

The remainder of the area for the proposed treated effluent discharge pipeline route is represented as farmland with tracks, with the only substantial change over time being in the field boundaries.

### 2.3.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of site area C and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

Prehistoric activity is not specifically evidenced for site area C within the HER, NHLE or archaeological reports for the area. However, there are several CHER data points relating to

Iron Age to Romano-British settlement activity in the buffer zone for site area C (CHER: 01787, MCB21164, 09547, MCB20913, MCB20801, MCB20803, MCB23977), primarily to the north, east and west. There is also a precedent for settlement of this period in the landscape and within the study area. An archaeological investigation of land off Rampton Road, 230m north-east of the site, found Romano-British settlement activity (CHER: 09547). On investigation this was occupied from the Late Iron Age to the 4th century AD<sup>7</sup>. Further early Roman activity was identified in trial trenching of land off Oakington Road, 210m to the east of site area C<sup>8</sup>. The presence of Roman and Iron Age sites in this area is established by the Fenland Project<sup>9</sup>, although nothing is specifically recorded in this within site area C.

An area of very early medieval activity is present to the north-east of the scheme area, (CHER: MCB20802), there are several features here, possibly indicating a small settlement.

Ridge and furrow marks and field boundaries (CHER: MCB25738, MCB20804, MCB21417) suggest use of the area for agriculture from the medieval period. Trial trenching of the land off Oakington Road, previously discussed, also found substantial evidence of post medieval agriculture. Magnetometry survey of Cuckoo Hill Farm<sup>10</sup>, 410m south-west of the site, found linear agricultural striations which further supports long-standing agriculture in the area. Three sand and gravel extraction sites, dating to the post medieval period are also recognised in the study area in the CHER (CHER: MCB25742, MCB25742, MCB25747). Historic maps show the study area as various farms in the post medieval and modern periods. Farms outside of the scheme area (Cuckoo farm, CHER: MCB23976) fell out of use in the period covered by historic maps. Otherwise there is no significant change in the use of the study area, which continues to be used for farming, into the modern period.

## 2.4 Site H

### 2.4.1 Geography and topography

The bedrock geology of site area H is Gault Formation – Mudstone, sedimentary bedrock formed approximately 101 to 113 million years ago. The superficial geology is primarily unrecorded, with River Terrace Deposits, 3 – Sand and Gravel, formed up to three million years ago, in the south.

The topography of site area H is lower in the north, approximately 6m AOD across the width of the scheme area. This area is crossed by small waterways, including manmade channels, this is characteristic of the lowland area lying to the edge of the Fenlands coastal plain. site area H rises towards the south, from 10-14m AOD. The area is currently farmland.

### 2.4.2 Designated heritage assets

There are no designated heritage assets within the site or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage asset is 59 and 61 Cottenham Road (NHLE: 1331270), over 1.5km south-west.

The 100m corridor study area for the treated effluent discharge pipeline route for this site includes no designated assets.

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<sup>7</sup> CgMs consulting (2016) *Archaeological statement: Land of Rampton Road, Cottenham, Cambridgeshire.*

<sup>8</sup> Pre-construct Archaeology (2015) *Land at Oakington Road, Cottenham, Cambridgeshire: An archaeological trial trench evaluation.*

<sup>9</sup> East Anglian Archaeology (1996) *The Fenland Project, Number 10: Cambridgeshire survey, Isle of Ely and Wisbech.*

<sup>10</sup> Oxford Archaeotechnics (2011) *Cuckoo Hill Farm, Cottenham, Cambridgeshire: Magnetometry (Gradiometer) survey.*

### 2.4.3 Non-designated heritage assets

There are two non-designated assets identified in the CHER within site area H, these are:

- Iron Age artefact scatter (CHER: MCB22693)
- Undated cropmarks (CHER: MCB25692)

There eight non-designated assets identified within the 500m buffer zone for site area H, namely:

- Iron Age, Roman and post medieval features (CHER: MCB16778) 10m south of the scheme.
- A Roman artefact scatter (CHER: MCB22692) 20m south.
- Cropmarks relating to a possible Iron Age or Roman enclosure (CHER: MCB25691) 40m south.
- Cropmark enclosures of unknown date (CHER: 08321) 450m south.
- Mill Lane 19th century farm building (CHER: MCB22579) 420m south.
- Roman artefact scatter, ring ditch and possible barrow (CHER: MCB22694) 250m south.
- Possible medieval or post medieval field system (CHER: MCB25693) 430m south-east and 285m west.
- Roman pottery scatter (CHER: MCB17785)

There is one non-designated asset identified within the 100m corridor for the proposed treated effluent discharge pipeline route for site area H:

- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

There are two non-designated assets identified on the proposed access road for site area H:

- Possible medieval or post medieval field system (CHER: MCB25693), also discussed above.
- Roman pottery scatter (CHER: MCB17785).

### 2.4.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site and the 500m buffer zone, its results are summarised below.

**Table 4: Cartographic Regression of site area H**

Title	Date	Description
OS County Series: Cambridgeshire and Ely	1886-1888	Bedlam Farm is shown in its modern-day location, south of the study area. A track leads north and then west from it, following the field boundaries. Field Barn is shown at the location of Manor Farm, with a track leading north into the study area. These tracks join each other and follow field boundaries north, becoming Hay Lane. Mill lane farm is shown in its modern location, surrounded by tree-lined fields. A road cuts east-west across the site, to almost meet Hay Lane, with Rectory Farm labelled to its south in the location of the modern Rectory Farm, Barns. South of this Oldfield Farm is shown a track running parallel to the above, both in their modern location but the track extending slightly further west. Small fields and orchards are to the west of the study area. The remainder of the study area, and the majority of the proposed scheme area, is comprised of large fields. Mere Way is shown south from the study area and labelled Roman Road.
OS County Series: Cambridgeshire and Ely	1889-1891	There is no significant change shown from the previous map.



Title	Date	Description
OS County Series: Cambridgeshire and Ely	1902	The track with ran along the field boundaries north to meet Hay Lane is now shown as a footpath, it no longer has a branch leading to Mill Lane Farm. The east-west track is shortened by the length of one field. Some marsh is shown in the north of the study area. There are more orchards surrounding Bedlam Farm. Mere Way Roman Road is now shown as Akeman Street Roman Road.
OS County Series: Cambridgeshire and Ely	1903	There is no significant change shown from the previous map.
OS County Series: Cambridgeshire and Ely	1927	More orchards have been planted surrounding Bedlam Farm and to its west. The rest of the study area is not displayed by this map.
OS County Series: Cambridgeshire and Ely	1938	There are further orchards north and north-west of the study area and a pumping station in these to the north-west (outside the study area). Small buildings are shown at the terminus of the track leading east-west through these fields towards the study area. The remainder of the study area is not shown on this map.
OS County Series: Cambridgeshire and Ely	1938-1952	Allotments have been laid out between Mill Lane Farm and Cottenham Road. No other significant change is shown from the previous maps.
OS Plan	1958-1959	Marshland is shown near Rectory Farm.
OS Plan	1969-1976	To the north-west of the study area further buildings are shown on the track leading through the orchards here. In the south, towards Bedlam Farm, are fewer orchards. More buildings are shown west of Akeman Street Roman Road. Small buildings are shown in the area of modern-day Rectory Farm, but the modern-day barns retain the name still. A track running south-east from Hay Lane features buildings to the north and several enclosures.
OS Plan	1973-1980	Akeman Street Roman Road and the access for Rectory Farm are both now shown as tracks.
OS Plan	1980-1992	There is no significant change shown from the previous map.

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for site area H:

- The route of Mere Way/Akeman street Roman road is shown to cross the proposed treated effluent discharge pipeline route at 52.2592° N, 0.1510° E. This is shown on the 1886 OS country series map and subsequent maps, Akeman Street is first represented as a road, as opposed to a track, on the treated effluent discharge pipeline route in the 1969 OS Plan.

The remainder of the area for the proposed treated effluent discharge pipeline route is represented as farmland with tracks, with the only substantial change over time being in the field boundaries.

#### 2.4.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of site area H and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

There is no specific evidence activity at site area H in the early prehistoric period. There is, however, evidence of Iron Age and Romano-British activity within the scheme area. A series of field-walking surveys in Buxhall Farm in the 1990s<sup>11</sup> recovered Roman and Iron Age artefacts

<sup>11</sup> Cambridge Archaeology Field Group (1999) *Fieldwalking survey, Buxhall Farm, Histon 1995-1999*.

and tentatively identified some related features, this survey extended into approximately 30% of the south-west corner of site area H. A watching brief for the Histon – Waterbeach electricity cable<sup>12</sup>, which crossed site H at the south-east corner, found evidence of Iron Age and Romano-British archaeology. The CHER point for an Iron Age artefact scatter (CHER: MCB22693) within the proposed scheme area for site area H further demonstrates the presence of archaeological activity of this period within the study area. There are further Iron Age and Romano-British CHER assets, relating to monuments and findspots, present within the buffer zone (CHER: MCB16778, MCB22692, MCB25691, MCB22694, MCB17785).

There is no specific evidence for the use of site area H until the post medieval period. During the post medieval period the area appears to have been used for agriculture. This is evidenced by its appearance on historic maps and two CHER data points relating to fields systems (CHER: MCB25693) and an extant farm building (CHER: MCB22579). There is no significant change in the use of this area into the modern period, with the exception of tracks towards Hay Lane, dating from the post medieval period, falling out of use.

## 2.5 Site area I

### 2.5.1 Geography and topography

The bedrock geology is Gault Formation – Mudstone, sedimentary bedrock formed approximately 101 to 113 million years ago. The overlying drift is largely unrecorded, with some inclusions of River Terrace Deposits, 4 - Sand and Gravel, formed up to 3 million years ago.

The topography of site area I is mostly level and low, at 9-10m AOD. The land rises slightly in the south towards Butt Lane. Mere Way, a former Roman road and modern trackway, bisects site area I, which is largely farmland.

### 2.5.2 Designated heritage assets

There are no designated heritage assets within the site or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage asset is Baptist Chapel (NHLE: 1179106), over 700m north-east.

The 100m corridor study area for the treated effluent discharge pipeline route for this site includes no designated assets.

### 2.5.3 Non-designated heritage assets

There is one non-designated asset identified in the CHER within site area I, which is:

- A Bronze Age findspot (CHER: 08778)

There are eight non-designated assets identified within the 500m buffer zone for site area I, namely:

- A cropmark of a possible rectilinear feature (CHER: 08315) 450m south-east of the scheme.
- A roman pottery findspot (CHER: 05538) 180m south-east.
- A Mesolithic artefact scatter (CHER: 05237) 150m south-east
- A medieval pottery scatter (CHER: 05273B) 150m south-east

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<sup>12</sup> Cambridgeshire Archaeological Unit (2003) *Histon to Waterbeach Cable, Cambridgeshire: An Archaeological watching Brief and Evaluation*.

- A Romano-British pottery scatter (CHER: 05237A) 150m south-east.
- A post medieval pottery findspot (CHER: 05273C) 120m south-west.
- An undated metal disc findspot (CHER: 08779) 100m west.
- A Roman and medieval findspot (CHER: MCB16263) 100m west.
- Late Iron Age coins findspot (CHER: MCB16262) 130m west.

There is one non-designated asset identified in the CHER within the 100m corridor for the proposed treated effluent discharge pipeline route for site area I:

- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

There are no non-designated assets identified in the CHER on the route identified for the proposed access road for site area I.

#### 2.5.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site and the 500m buffer zone, its results are summarised below.

**Table 5: Cartographic regression of site area I**

Title	Date	Description
OS County Series: Cambridgeshire and Ely	1886-1887	Milton Road/Butt Lane is shown following its modern-day route to the south of the study area, bisecting it at a 90° angle and running north-south through site area I is Mere Way Roman Road. An orchard exists within the study area towards Bedlam farm in the west. A track leads from Rectory Farm, Milton in the east (a different Rectory Farm than that discussed for site area H) westwards into the study area. This meets another track running north-south parallel to Mere Way and further east than this Roman road. To the north of the study area a track runs north-west from Mere Way to Oldfield Farm (now Oldfield Farm Barns). Below this a footpath follows field boundaries west from Mere Way towards Bedlam Farm, crossing the scheme area east to west. The remainder of the study area is divided into large fields.
OS County Series: Cambridgeshire and Ely	1889-1890	There is no significant change shown from the previous map.
OS County Series: Cambridgeshire and Ely	1902-1903	Mere Way is now shown as Akeman Street Roman Road and is represented as a track through the scheme area, becoming the road to the north at the entrance to Oldfield Farm. West of this, the area around Bedlam Farm is now heavily covered with orchards, extending into the western edge of the scheme area. Plotted on this map is an oval feature west of the Roman Road, it is shown as either raised or sunk. This is possibly archaeological, for example possibly relating to a barrow, or may be a small pond. A cemetery is labelled east beyond the study area towards Landbeach Road.
OS County Series: Cambridgeshire and Ely	1903	There is no significant change shown from the previous map.
OS County Series: Cambridgeshire and Ely	1927	The oval area which was formerly marked as raised is now shown as a plain oval underneath field boundaries. Most of the fields west of Mere Way/Akeman Street Roman Road are now orchards. New houses, including The Almonds, are shown on Milton Road in the south.
OS County Series: Cambridgeshire and Ely	1938-1952	The possibly still raised oval area is marked adjacent to field boundaries. Akeman Street Roman Road is now labelled Mere Way Roman Road (remains of) but is still shown as a clear track. New close farm is shown to the south, on Milton Road.
OS Plan	1958-1959	The Roman road is no longer labelled here, but a track is still shown, and the road is labelled south of Butt Lane. There are fewer orchards in the west of the study area.

Title	Date	Description
OS Plan	1969-1970	The oval feature is now labelled pond. Mere Way Roman Road is again labelled. Oldfield Farm is now at the junction to the track, with the buildings remaining at the former site unlabelled. Punch Farm is now seen adjacent to this. Buildings relating to New Close Farm and Sun Close Farm are shown.
OS Plan	1973-1980	There is no significant change shown from the previous map.
OS Plan	1980-1992	There is no significant change shown from the previous maps.
OS Plan	1982	There is no significant change shown from the previous maps. <sup>13</sup>

There are no notable features shown on available historic maps within the 100m corridor for the proposed treated effluent discharge pipeline route for site area I. The area for the proposed treated effluent discharge pipeline route is represented as farmland with tracks, with the only substantial change over time being in the field boundaries.

### 2.5.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of site area I and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

Prehistoric activity for site area I is primarily from the Bronze Age and Iron Age. There is one Bronze Age findspot within site area I (CHER: 08778A) and a findspot for Late Iron Age coins in the study area (CHER: MCB16262). An aerial photography survey covering a large area at Limes Farm, Landbeach, 250m north-east of site area I, found numerous cropmarks<sup>14</sup>. Some of these were later investigated revealing an Iron Age ditched enclosure system<sup>15</sup>. This is evidence of Iron Age activity in the broader landscape, in sites with similar topography and geology, but not of activity directly within the study area for site area I.

There is further evidence of prehistoric and Romano-British activity within the surroundings of site I. The significant investigation of the Milton Landfill site<sup>16</sup>, 430m south, has relevance to both site areas I and J. Evidence of settlement starting in the Neolithic, but primarily focused in the late prehistoric, was recovered. Romano-British remains were also found. This is further discussed in the section 2.6.5. Mere Way/Akeman Street Roman road is shown bisecting the proposed scheme area, this asset is shown as surviving on historic maps and is a modern trackway. Romano-British assets are also identified on the CHER (CHER: 05538, MCB16263).

Subsequent evidence for the use of site area I commences in the medieval period, with an isolated findspot (CHER: MCB16263). It is reasonable to assume the area was used for farming, as this is the use displayed on the earliest post medieval maps and is consistent with the surrounding area in this period. The use of the study area during the post medieval period remains consistent into the modern era, as demonstrated by historic maps. The area is currently used as farmland, with Mere way remaining as a track.

<sup>13</sup>

<sup>14</sup> Air Photo Services, Cambridge (1999) *AP assessment, Limes Farm, Landbeach*.

<sup>15</sup> Palmer, R. and Connor, A. (2000) An Iron Age ditched enclosure system at Limes farm, Landbeach, Cambridgeshire. *Antiquity* 74; 284 (p281-282).

<sup>16</sup> Cambridgeshire County Council Archaeological Field Unit (1995) *Evaluation at Milton Landfill Site*.

## 2.6 Site area J

### 2.6.1 Geography and topography

The bedrock geology is Gault Formation – Mudstone, sedimentary bedrock formed approximately 101 to 113 million years ago. The superficial geology is primarily River Terrace Deposits, 3 – Sand and Gravel, formed up to 3 million years ago.

The topography of site area J is mostly level, at 11-14m AOD. The land rises slightly in the south towards a number of hedgerows which divide the farmland in the area. There are two small roads and on small channel crossing the site east to west. Mere Way, a former Roman road and modern trackway lies to the east of the scheme area in site area J, running north-north-east to south-south-west, well within the 500m buffer zone.

### 2.6.2 Designated heritage assets

There are no designated heritage assets within the site or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage asset is the grade I listed Church of St Andrew (NHLE: 1178832), 875m west.

The 100m corridor study area for the treated effluent discharge pipeline route for this site includes no designated assets.

### 2.6.3 Non-designated heritage assets

There is one non-designated asset identified in the CHER within site area J, this is:

- The former site of Impington Hall park and gardens (CHER: 12129) and covers the whole scheme area.

There are nineteen non-designated assets identified within the 500m buffer zone for site area J, namely:

- Medieval and post medieval boundary banks (CHER: MCB25715) 10m west and 390m north-west.
- Undated tile finds (CHER: 11209) 220m south
- Medieval ridge and furrow (CHER: MCB20022) 190m south-east.
- Bronze Age, Iron Age and Roman remains (CHER: CB15707) 150m east.
- Early Neolithic to modern features (CHER: MCB19563) 120m east.
- An Iron Age pit cluster (CHER: CB15711) 205m east.
- A post medieval findspot (CHER: 10211D) 255m east.
- Roman Pottery findspot (CHER: 10211B) 250m east.
- Milton Landfill Prehistoric findspot (CHER: 10211) 250m east.
- Butt Lane Medieval pottery findspot (CHER:10211C) 250m east.
- Iron Age and Roman features (CHER: MCB19987) 145m east.
- Iron Age remains (CHER: CB15708) 110m east.
- Iron Age and Roman features (CHER: MCB19987) 200m east.
- Prehistoric pottery findspot (CHER: 10211A) 180m east.
- Iron Age to Roman findspot (CHER: 10211E)180m east.
- WWII Trinity Vehicle depot (CHER: MCB17527) 100m east.
- Iron Age remains (CHER: CB15709) 450m north-east.

- Neolithic and Bronze Age remains (CHER: CB15698) 460m north-east.
- Section through Akeman Street Roman Road (CHER: 07610) 250m north.

There are two non-designated assets identified in the CHER within the 100m corridor for the proposed treated effluent discharge pipeline route for site area J:

- A Late Iron Age coin findspot (CHER: MCB16262) This asset is also discussed for site area I as it falls within the 500m buffer of the proposed site boundary.
- Great Eastern Railway, Cambridge Line. 19th and 20th century. (CHER: MCB21582)

There are no non-designated assets identified in the CHER on the route identified for the proposed access road for site area I.

## 2.6.4 Historic cartographic sources

**Table 6: Cartographic regression of site area J**

Title	Date	Description
OS County Series: Cambridgeshire and Ely	1887	Mere Way Roman Road is shown as a tree-lined track which cuts the study area north-north-east to south-south-west, with the proposed scheme area being to its west. In the north of the study area are orchards, with tracks running between some of which are tree-lined. Several tracks run out of Impington, in the west, towards the study area, following field boundaries. South of this and to the west of the study area is Impington Park, belonging to Impington Hall, featuring several ponds and avenues. The remainder of the area is shown as large fields. Towards the rail line south of the study area is shown King Hedges site of camp, adjacent to Mere Way (today this is under housing development).
OS County Series: Cambridgeshire and Ely	1889-1890	There is no significant change shown from the previous map.
OS County Series: Cambridgeshire and Ely	1902-1903	Substantial hedgerows are represented on the field boundaries in the west of the study area, some of which also feature drains. Mere Way is here labelled Akeman Street Roman Road In the south of the study area two buildings are shown on this road, to the west, each with a land parcel.
OS County Series: Cambridgeshire and Ely	1903-1904	Sparse trees are displayed in the fields west of Akeman Street/Mere Way.
OS County Series: Cambridgeshire and Ely	1927	Histon Piggeries is labelled over the orchard in the north-west of the study area, with a tramway shown encircling this site. The Elms is present south of Butt Lane, past the north of the study area. The Roman road is again labelled as Mere Way. South of the study area, near King's Hedges Camp, to the east of Mere way a substantial earthwork which appears to line it is shown. A building, likely a house, is shown leading onto Mere Way from the west. This is close to the proposed scheme area.
OS County Series: Cambridgeshire and Ely	1938-1952	There is no significant change shown from the previous map.
OS Plan	1959	Adjacent to Kings Hedges and filling most of the fields to the east of Mere Way are rows of trackways and buildings, likely agricultural. Fewer trees and more buildings are shown at Histon Piggeries. Fewer trees are shown through fields in the south-west of the study area, however two of these fields are now laid out as orchards. The building west of Mere Way, adjacent to the scheme area, is no longer shown.
OS Plan	1969-1971	Neither Kings Hedges site of camp or the adjacent earthworks are shown beyond the south-east boundary of the study area, in place there are several farm buildings including Kings Hedge farm. The agricultural buildings north of this area, in the south-east of the study area, are no longer shown and have been replaced by open fields. A trackway runs north-south, crossing that to Impington Park, in the west of the study area. Impington park is no longer labelled and has been divided

Title	Date	Description
		into playing fields and a farm, although some avenues of trees are still plotted. Histon Piggeries is now a cul-de-sac, St Andrews Way, with further farm buildings to the south.
OS Plan	1973-1974	There is no significant change shown from the previous map.
OS Plan	1982	Mereway Farm is shown with four buildings where Mere Way crosses Butt Lane/Milton Road to the north.
OS Plan	1983-1992	Mere Way is shown as a poultry farm. Two further fields in the west are now orchards.

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for site area J:

- The route of Mere Way/Akeman street Roman road is shown to cross the proposed treated effluent discharge pipeline route at 52.25459N, 0.146557E. This is shown on the 1887 OS country series map and subsequent maps, it is represented as a track on all available historic maps.

The remainder of the area for the proposed treated effluent discharge pipeline route is represented as farmland with tracks, with the only substantial change over time being in the field boundaries.

### 2.6.5 Archaeological and historical background

The following provides a narrative of the history and archaeology of site area J and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

Late prehistoric and early roman activity has been identified within the scheme area. A field walking survey<sup>17</sup> which extended into approximately 25% of site J, in the south-west corner, found cropmarks and pottery relating to Roman activity. As well as earlier prehistoric lithic scatters.

During archaeological investigation prior to the construction of Milton Landfill site<sup>18</sup>, on the opposite side of Mere Way/Akeman Street Roman Road to site area J, evidence of prehistoric and Romano-British settlement was found (CHER: CB15707, MCB19563, CB15711, MCB19987, CB15708, MCB19987, 10211A, 10211E). The vast majority of recorded features were Iron Age and Romano-British, which likely relates these features to the roman road.

The wider landscape surrounding site area J also shows remains of this era. The site shown on historic maps as 'site of camp' at King's Hedges is likely prehistoric, but there is little mention of it in available online resources. This is likely due to development at King's Hedges in the mid-20th century, as the last map showing earthworks dates to 1959. There is a precedent for prehistoric, multi-phase hillforts that are later reused in the Romano-British period in the area, for example Arbury Hillfort followed this pattern as was located approximately 1.5km south of site area J. This camp, in the south-east of the study area, shows significant activity in this period in the immediate landscape surrounding site area J. The earthworks shown on historic maps adjacent to site area J may be Romano-British additions or may show use of the Mere Way route predating the roman road.

<sup>17</sup> Cambridgeshire archaeological field Unit (1993) *A45: Girton to Stow cum Quy: Field walking programme*.

<sup>18</sup> Oxford Archaeology East (2011) *Prehistoric settlement and Roman quarrying at Milton Landfill, Milton, Cambridgeshire. Post-Excavation Assessment*.

site area J was eventually incorporated into Impington Hall park and gardens (CHER: 12129), which covers the whole scheme area. This park originates in the late medieval to early post medieval period. By the time the area is first mapped the park has been reduced to a much smaller area in the west and the scheme area at site area J has agricultural use. There are several trackways leading to Impington Hall Park and Gardens displayed on post medieval maps. During the early 20th century a building existed within site area J, this was likely a house and was built adjacent to Mere way. The area is today used as farmland.

## 2.7 Site area L

### 2.7.1 Geography and topography

The bedrock geology of site area L is West Melbury Chalk Formation formed approximately 94 to 101 million years ago in the Cretaceous Period. There is no record of superficial deposits at the site.

Site area L is located on area of slightly raised flat land (10m AOD) 800m to the North West of the River Cam and north-east the A14). The area is currently farmland and is comprised of several large plots divided by hedges and small trackways.

### 2.7.2 Designated heritage assets

There are no designated heritage assets within the site area or the buffer zone, as these were factored into early phase constraint mapping. The nearest designated heritage assets are the grade II\* listed Biggin Abbey (NHLE: 1178408) 400m to the north-west of the study area.

There are no designated assets within the 100m wide corridor for this treated effluent discharge pipeline. The Treated effluent discharge pipeline will avoid the following significant assets located within its proximity:

- Grade II\* listed Biggin Abbey (NHLE: 1178408) which is c.200m north of the corridor.
- Grade II listed Poplar Hall (NHLE: 1127400) c.135m south
- Grade II listed Wildfowl Cottage (NHLE: 1390672) c.400m north

### 2.7.3 Non-designated heritage assets

The following two non-designated assets identified in the CHER are located within the Red Line Boundary of site area L:

- Furlong Boundaries in the parish of Lode (CHER: MCB27289);
- Prehistoric pottery (CHER: 11195)

The following fifteen non-designated assets have been identified in the CHER within the 500m buffer zone for site area L:

- Roman pottery scatter and cropmarks (CHER: 11555) 280 west of the scheme area.
- Post medieval pottery (CHER: 11203B) 280m west.
- Ridge and Furrow (CHER: 05612) 480m west
- Medieval Earthworks (CHER: 05324A) 350m west.
- Bronze Age Worked Flints (CHER: 07812) 135m north-west.
- Soilmarks and earthworks (CHER: 11207) 250m north.
- Post medieval pottery (CHER: 11208) 300m north.
- Palstave Bronze Age findspot (CHER:06344) 445m north-east



- Multiperiod finds from the Early Neolithic to the Medieval period (CHER: 11194), 85m west.
- Ridge and Furrow (CHER: 05611) 125m west.
- Ridge and Furrow, Abbots Ditch Field (CHER: 05470) 430m south-west.
- Barnwell Junction to Mildenhall railway (disused) (CHER: 07633) 150m south.
- Ridge and Furrow (CHER: 05798) 100m east.
- Bronze Age Pot and Spear findspot (CHER: 06343) 300m south-east.
- Unstratified Romano-British Pottery (CHER: 11203) 265m west.

There is one non-designated asset identified in the CHER on the route identified for the proposed access road for site area L:

- Barnwell Junction to Mildenhall railway (disused) (CHER: 07633) (also discussed above).

The following three non-designated assets have been identified within the 100m corridor for the proposed treated effluent discharge pipeline route for site area L:

- Cropmark Site, Fen Ditton (CHER: 08327)
- Multiperiod finds (CHER: 11193); and
- Former Clay pit (CHER: MCB27455).

#### 2.7.4 Historic cartographic sources

A search of online historic cartographic sources has been conducted for the site area and the 500m buffer zone, its results are summarised below.

**Table 7: Cartographic Regression of site area L**

Title	Date	Description
A Map of the Great Level of the Fens	1684 (1720)	The study area for site area L is not shown on this map.
OS county series: Cambridgeshire and Isle of Ely	1886	The map depicts the scheme area predominantly as fields. The area looks almost identical to today. The study area cuts across four marked fields. The roads are positioned in the same place as they are currently although they are not labelled. The GER Cambridge and Mildenhall Line Railway (CHER: 07633) is marked on the map and still in use at this time. Fen Ditton is labelled on the map as is Fleam Dyke is marked on the map. In the North of the study area is a Hop Ground Building and Pump which are not currently identified. Low Fen Drove Way is represented as a track in the east of the study area, running north-south and connecting with what remains of Low Fen Drove Way today, in the south-east of the study area. Little Ditton is shown as a small settlement in the west.
OS county series: Cambridgeshire and Isle of Ely	1889	This map depicts the same as the above, with no significant change between the two in the study area.
OS county series: Cambridgeshire and Isle of Ely	1903	This map depicts the same as the above, with no significant change between the two in the study area.
OS county series: Cambridgeshire and Isle of Ely	1926	This map still depicts the area as fields with the same features as the above, including hop ground building and pump. Little Ditton to the south of the Study Area has expanded to include two allotment gardens.
OS county series: Cambridgeshire	1927	This map depicts the same as the above, with no significant change between the two in the study area.
OS county series: Cambridgeshire and Isle of Ely	1952	This map depicts the same as the above, with no significant change between the two in the study area.

Title	Date	Description
OS Plan	1958	This map depicts the same as the above, with no significant change between the two in the study area.
OS Plan	1971	The Hop Ground building is still shown, with two additional buildings c.30m to the north-east (not labelled) and one to the north, on the southside of Fen Drove Way (still shown today). The remainder of the area is depicted as above.
OS Plan	1973	There is little change between this map and the previous. The hop ground building and additional buildings are still shown; however the pump is no longer represented.
OS Plan	1982	This map depicts the same as the above, with no significant change between the two in the study area.

The following features were shown on historic maps for the 100m corridor for the proposed treated effluent discharge pipeline route for site area L:

- A clay extraction pit is shown north of Poplar Hall on the 1886 OS County Series map and labelled as ‘Old Clay Pit’ in the 1903 OS County Series map. This feature is last depicted on the 1959 OS Plan. This relates the CHER record MCB27455.
- The A14 is first depicted on the 1982 OS Plan, accompanied by substantial residential expansion since the previous map (1974 OS Plan)

Biggin Abbey (NHLE: 1178408), Poplar Hall (NHLE: 1127400) and the building now called Wildfowl Cottage (NHLE: 1390672) are all marked on all available historic mapping from the 1886 OS county Series, outside the proposed treated effluent discharge pipeline route.

### 2.7.5 Archaeological and historic background

The following provides a narrative of the history and archaeology of site area L and a surrounding 500m buffer. This has been constructed using the above baseline and sources discussed in section 1.3 of this note, including available archaeology and heritage reports.

site area L sits between two historic settlements situated along the east bank of the River Cam. Horningsea 900m to the north and Fen Ditton 900m to the south both sit on the road from Cambridge to Clayhithe and have historic precedent dating back to the prehistoric period. There is evidence of Iron Age habitation in Horningsea and Neolithic activity in Fen Ditton. The name of Fen Ditton was first recorded in around 950AD as Dittone, meaning "the village by the ditch". This is due to the Fleam Dyke which is a prehistoric ditch that passed through the village showing at least early activity in this area. It is likely therefore that this area experienced prehistoric activity as evidenced by finds of Bronze Age Worked Flints (CHER: 07812) and other Multiperiod finds (CHER: 11194) dating from the Early Neolithic. Furthermore, the cropmarks (CHER: 11555) inside the scheme area, located near the road linking Fen Ditton to Horningsea, indicate a potential settlement.

There is significant evidence of Roman commercial activity in this area. The River Cam is known to have been navigated since at least Roman times therefore encouraging development in this area. The nearest Roman villa has been found just to the west of Quy Hall. The scheduled monument of Carr Dyke (NHLE: 1006930) is located 1km to the west. Carr Dyke is an 85-mile (137 km) long ditch dating from the Roman period. The scheduled area (1km to the west) is the location where a Roman-era boat and cargo of pottery was discovered in the 1990s leading to assertions that Carr Dyke functioned as a canal transporting goods from Horningsea to Lincoln. Between the 2nd and 4th centuries Horningsea made pottery for trade and the scheduled monument of Horningsea Kilns (NHLE; 1006895) is located 600m to the west of the Red Line Boundary. There have also been finds of Roman pottery scatter and

cropmarks, potentially indicating settlement (CHER: 11555), a Roman copper coin (CHER: 05344) and other Multiperiod finds (CHER: 11194; CHER: 11193) within the site area.

The scheme area is located in an area of slightly raised ground (10m AOD), which is higher than Horningsea (5m AOD) so most likely located outside of the fenland area, during all periods. The fen area is further north and north east of the scheme area. Drainage of the fen area began in early medieval times, with a bridge is mentioned in Horningsea by the late 13th century.

The road linking Fen Ditton to Horningsea (adjacent to the site) was first recorded in the 15th century but its raised position suggests it would have had earlier foundations. There is also a significant amount of ridge and farrow remains in this area (CHER: 05611; CHER: 05612; CHER: 05470; CHER: 05798) as well as other Medieval Earthworks (CHER: 05324A) and the Furlong Boundaries in the parish of Lode (CHER: MCB27289). This suggests that the area was agricultural land by the Medieval period

The grade I listed Church of St Peter (NHLE: 1331295) which is 600m to the west dates from the early 12th Century with the south arcade dating to the 11th Century and the cancel from 1220. It is situated on the site for a Saxon Minster built in the 9th Century. Waterbeach Abbey (NHLE: 1006888) which is located 900m to the west of the Red Line Boundary was established in 1294 but by 1351 had become disused due to the amount of flooding. Biggin Abbey (NHLE: 1178408) was built in the mid-13th Century. Although never an abbey, it served as a summer home of the Bishops of Ely. It is likely that the study area comprised of agricultural fields serving the manor. The Barnwell Junction to Mildenhall railway (disused) (CHER: 07633) was part of the Cambridge to Mildenhall line built by the Great Eastern Railway and opened in 1894.

Today site area L has an agricultural land use.

## 3 Archaeological potential

The archaeological potential for each study area, the likelihood that it would yield archaeological remains, is discussed below in line with guidance from the Chartered Institute for Archaeologists (CIfA)<sup>19</sup>. This information is based on the baselines discussed above in section 2 and is assessed by period.

### 3.1 Site area A

There is a low to moderate potential for prehistoric archaeological remains within site area. There is a prevalence of prehistoric remains within the Fenlands, however there is little specific evidence to suggest the presence of prehistoric remains within the scheme area and the buffer zone contains only undated cropmarks.

There is a low potential for archaeological remains dating from to the Romano-British period, as there is no specific evidence for this within the study area.

There is a low to moderate potential for Early medieval remains, as these fewer sites of this period have been identified in Cambridgeshire and there is no specific evidence for early medieval activity within site area A. However the Giant's Hill monument dates partly to this period and archaeological investigations to the east of site area A have found contemporary remains.

There is a moderate potential for archaeological remains relating to the medieval period, due to the location of site area A between two defensive scheduled monuments of this period. There is a higher potential for archaeology relating to medieval farming, as this appears to have been the use of the land during this period.

There is moderate to high potential for remains dating to the post medieval period, especially related to agriculture, due to the presence of Haven Drove across the site and the established use of this area for farming.

### 3.2 Site area B

There is low archaeological potential for site area B relating to the prehistoric, Romano-British and early medieval periods. As there is no specific evidence for activity within site area B or its immediate surroundings, nor was any found in archaeological excavations in the immediate area. Test pits dug in investigation of routes for the Cambridge guided busway<sup>20</sup>, 150m south-west of site area B, found little initial evidence of any archaeology and described the potential of the area as low to medium.

There is high potential for remains relating to medieval and post medieval farming within the scheme area for site area B. Identified within the CHER are numerous assets relating to this within the scheme boundary and buffer zone. The historic maps of the area also suggest long-standing agricultural use. Possible additional medieval remains, relating to the former Rampton early medieval village, are also likely, due to its proximity to the scheme area.

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<sup>19</sup> Chartered Institute for Archaeologists (2014) *Standard and guidance for historic desk-based assessment*.

<sup>20</sup> Cambridgeshire archaeological field unit (2006) *Cambridge Guided Busway: Test pits*

### 3.3 Site area C

There is a low potential for early to mid-prehistoric remains within site area C as none are specifically evidenced and archaeological reports in the immediate area have not uncovered substantial evidence relating to this period.

There is a high archaeological potential relating to the Late Iron Age and Romano-British periods, due to the settlement activity evidenced within the buffer zone and the findings of archaeological investigations in the immediate area.

There is moderate potential for early medieval remains, due to the presence of features of this period to the north-east of the scheme area.

There is high potential for remains relating to medieval and post medieval farming within the scheme area for site area C. Identified within the CHER are numerous assets relating to this within the scheme boundary and buffer zone and historic maps of the area also suggest long-standing agricultural use. There is moderate potential for post medieval remains of low value relating to the former park and gardens.

### 3.4 Site area H

There is a low archaeological potential relating to the early to mid-prehistoric period for site area H, as none are specifically evidenced and archaeological reports in the immediate area have not uncovered substantial evidence relating to this period.

There is a high potential for remains relating to the Late Iron Age and Romano-British periods, due to the previous discovery of these in the study area. However, due to the nature of known archaeology these assets would likely be of low value.

There is a low potential for early medieval remains, as there is no specific evidence for early medieval activity within site area H or its immediate surroundings.

There is high potential for remains relating to medieval and post medieval farming within the scheme area for site area H. Identified within the CHER are numerous assets relating to this and historic maps of the area also suggest long-standing agricultural use.

### 3.5 Site area I

There is moderate potential for archaeological remains of the prehistoric period, with two existing CHER points in the study area and further activity identified by archaeological investigation.

There is a very high potential for archaeological remains relating to the Romano-British period, due to the site area's location adjacent to Mere Way/Akeman Street Roman Road. Roadside Romano-British settlement is anticipated, and it is possible this may fall within the scheme area. Findspots and artefact scatters associated with Roman roads are also common, some of which are identified in the CHER for site area I. It should also be noted that the proposed treated effluent discharge pipeline route for site area J directly crosses Mere Way/Akeman Street Roman Road, in an area of this historic route that has not experienced substantial modern development. This treated effluent discharge pipeline route has very high archaeological potential for archaeological remains of low to moderate value relating to the Romano-British period.

There is a low potential for early medieval remains, as there is no specific evidence for early medieval activity within site area I or its immediate surroundings.

There is high archaeological potential relating to medieval and post medieval agriculture, as this use of the site is evidenced in the CHER and on historic maps.

### 3.6 Site area J

There is a moderate to high potential for archaeological remains relating to the prehistoric period due to the presence of these adjacent to site area J, especially within the landfill site to the east, and within the CHER data.

There is a very high potential for archaeological remains relating to the Romano-British period, due to the site's location adjacent to Mere Way/Akeman Street Roman Road. Roadside Romano-British settlement is anticipated, and it is possible this may fall within the scheme area. Findspots and artefact scatters associated with Roman roads are also common, some of which are identified in the CHER for site area J.

There is a low potential for early medieval remains, as there is no specific evidence for early medieval activity within site area J or its immediate surroundings.

There is moderate potential for remains relating to the medieval period, although the use of the area for Impington Park makes evidence of settlement in this period unlikely.

There is a high potential for remains relating to the post medieval period, due to the presence of post medieval farmsteads and trackways in the area. And due to the presence of a post medieval or modern building on historic maps within the proposed scheme boundaries.

### 3.7 Site area L

There is a moderate to high potential for archaeological remains relating to the prehistoric period due to the presence of these finds within to site area L, and within the CHER data, especially from the Bronze Age period.

There is a high potential for archaeological remains relating to the Romano-British period. Cropmark evidence (CHER: 11555) suggests settlement in this area. Romano-British settlement associated with commercial pottery industry in this location is anticipated, and findspots and artefact scatters associated with Roman industry are also common, some of which are identified in the CHER for site area L.

There is a medium potential for early medieval remains, as there is evidence for early medieval settlement in only 600m to the north of site L. Horningsea was settled from at least the 9th Century as seen in the remains of the Church of St Peter (NHLE: 1331295) and Waterbeach Abbey (NHLE: 1006888) and therefore there is potential for associated finds in this location.

There is moderate potential for remains relating to the medieval period, although this area was likely used for agricultural purposes from this period onwards.

There is a high potential for remains relating to the post medieval period, due to the presence of the post medieval railway. And due to the presence of a post medieval or modern building on historic maps within the proposed scheme boundaries.

## 4 Potential Historic Environment Risks and Constraints

This section contains a discussion of the potential constraints posed by and risks to the historic environment by the development of the scheme., The following criteria have been used to assign RAG ratings for each shortlisted site.

### Green:

- No anticipated impact on designated heritage assets, and;
- No/ few, low value heritage assets identified in the scheme area, and;
- Low archaeological potential for assets of high or moderate value, and;
- No high value assets represented on historic maps.

### Amber:

- No anticipated impact on high value designated heritage assets, and;
- Potential for minor/temporary impact on the setting of designated heritage assets, and/or;
- Moderate value heritage assets identified in the scheme area, and/or;
- High archaeological potential for assets of moderate value, and/or;
- High value assets represented on historic maps.

### Red:

- Potential for permanent or moderate-to-severe impact on designated heritage assets or their settings.

### 4.1 Site area A

#### 4.1.1 Scheme

Impact on the setting of the nearest designated heritage assets (Belsar's Hill Ringwork (NHLE: 1010368) and Giant's Hill Motte Castle (NHLE: 1011778) was ruled out in Phase 2B of screening.

There are no non-designated heritage assets within the scheme boundary, nor none of the significance necessary within the study area, to constrain the development of the scheme at site area A.

There are no features on the cartographic sources of enough significance to constrain site selection, Haven Drove crosses the study area in the late medieval period.

The archaeological potential for remains of high value in the study area is low enough that it does not constrain site selection at this stage.

#### 4.1.2 Treated effluent discharge pipeline

There no are designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the

proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area A contains non-designated assets of low value (CHER: 05285 and 12301) and low to moderate value (CHER: MCB21414) identified in the CHER. There is potential for impact to these assets by the proposed works on this route.

This corridor also crosses the Akeman Street/Mere Way Roman road, as represented on historic cartographic sources. However, this is crossed at a point which has already experienced significant modern construction, in the form of a road and domestic buildings, therefore the potential for further harm to the historic environment is low. Other features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

#### 4.1.3 Outcome

The development of the scheme at site area A is not significantly constrained by the historic environment at this stage of screening.

**Scheme area:** Green

The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value.

The treated effluent discharge pipeline route poses potential risk to non-designated assets of low and low-moderate value.

**Treated effluent discharge pipeline:** Amber

## 4.2 Site area B

### 4.2.1 Scheme

Impact on the nearest designated heritage assets which are the listed buildings within Rampton, the nearest of these being 31, High Street (NHLE: 1127278), was ruled out in Phase 2B of screening.

There are no non-designated heritage assets within the scheme boundary, nor none of the significance necessary within the study area, to constrain the development of the scheme at site area B.

There are no features on the cartographic sources of enough significance to constrain site selection. Several previously major paths are later marked as only tracks.

The archaeological potential for remains of high value in the study area is low enough that it does not constrain site selection at this stage.

### 4.2.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.



The 100m corridor for the proposed treated effluent discharge pipeline route for site area B contains non-designated assets of low value (CHER: 05285 and 12301) and low to moderate value (CHER: MCB21414) identified in the CHER. There is potential for impact to these assets by the proposed works on this route.

This corridor also crosses the Akeman Street/Mere Way Roman road, as represented on historic cartographic sources. However, this is crossed at a point which has already experienced significant modern construction, in the form of a road and domestic buildings, therefore the potential for further harm to the historic environment is low. Other features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

#### 4.2.3 Outcome

The development of the scheme at site area B is not significantly constrained by the historic environment at this stage of screening.

#### **Scheme area: Green**

The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value.

The treated effluent discharge pipeline route poses potential risk to non-designated assets of low and low-moderate value.

#### **Treated effluent discharge pipeline: Amber**

### 4.3 Site area C

#### 4.3.1 Scheme

Impact on the setting of the nearest designated heritage asset, Tower Mill in Cottenham (NHLE: 1164084), was ruled out in Phase 2B of screening.

There are no non-designated heritage assets within the scheme boundary of the significance necessary to constrain the development of the scheme at site area C. However, there is significant settlement activity of the Late Iron Age and Romano British Period in the study area immediately adjacent to the scheme footprint which could be impacted by the construction of the scheme.

There are no features on the cartographic sources of enough significance to constrain site selection. There is potentially a post medieval pump within the study area, if it was not removed.

There is moderate potential for archaeological remains of moderate value, due to adjacent settlement activity, within site area C. This somewhat constrains the site selection at this point, due to the risk to the historic environment and cost of potential mitigation.

#### 4.3.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area C contains non-designated assets of low value (CHER: 05285 and 12301) and low to moderate value (CHER: MCB21414) identified in the CHER. There is potential for impact to these assets by the proposed works on this route.

This corridor also crosses the Akeman Street/Mere Way Roman road, as represented on historic cartographic sources. However, this is crossed at a point which has already experienced significant modern construction, in the form of a road and domestic buildings, therefore the potential for further harm to the historic environment is low. Other features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

#### 4.3.3 Outcome

The development of the scheme at site area C represents the potential for impact on assets of moderate value and therefore risk to the historic environment.

**Scheme area:** Amber

The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value.

The treated effluent discharge pipeline route poses potential risk to non-designated assets of low and low-moderate value.

**Treated effluent discharge pipeline:** Amber

## 4.4 Site area H

### 4.4.1 Scheme

Impact on the setting of the nearest designated heritage asset 59 and 61 Cottenham Road (NHLE: 1331270) was ruled out in Phase 2B of screening.

There are no non-designated heritage assets within the scheme boundary to constrain the development of the scheme at site area H. However, there is some settlement activity of the Late Iron Age and Romano-British Period which could be impacted by the construction of the scheme. There are two non-designated assets of low value which may be impacted by the construction of the access road for site area H on the proposed route.

There are no features on the cartographic sources of enough significance to constrain site selection.

The prevalence of features identified within the CHER suggests a moderate archaeological potential for the Late Iron Age and Romano-British period for site area H. The proximity of the known features to the scheme area and this moderate potential make site area H less suitable for selection at this stage, due to the risk to the historic environment and cost of potential mitigation, however assets would likely be of low value. The setting of built non-designated heritage assets, specifically Mill Lane Farm, could be altered by development at site area H. However, this asset is of low value and this potential impact is not significant enough to constrain site selection at this stage.

### 4.4.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the

proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area H contains no non-designated assets identified in the CHER.

This corridor crosses the Akeman Street/Mere Way Roman road, as represented on historic cartographic sources. However, this is crossed at a point which has already experienced significant modern construction, in the form of a road and domestic buildings, therefore the potential for further harm to the historic environment is low. Other features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

#### 4.4.3 Outcome

The development of the scheme at site area H is not significantly constrained by the historic environment at this stage of screening.

**Scheme area:** Green

The treated effluent discharge pipeline route poses no potential risk to designated assets.

The treated effluent discharge pipeline route represents risk to non-designated assets of low value only.

**Treated effluent discharge pipeline:** Green

## 4.5 Site area I

### 4.5.1 Scheme

Impact on the setting of the nearest designated heritage asset, Baptist Chapel (NHLE: 1179106), was ruled out in Phase 2B of screening.

There are non-designated assets of moderate value within site area I which would be at risk by the development of the scheme. Mere Way/ Akeman Street Roman road falls directly in the scheme area.

The Roman road is identified on all historic cartographic sources for site area I, indicating not only its use in the Romano-British period but its continued use throughout the last two millennia to the present day.

There is a high archaeological potential for Romano-British remains, especially relating to the adjacent Mere Way, for site area I. This archaeological potential makes site area I somewhat less suitable for development, due to risk to the historic environment and cost of archaeological mitigation.

### 4.5.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area I contains no non-designated assets identified in the CHER.

Features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

#### 4.5.3 Outcome

The development of the scheme at site area I represents the potential for impact on assets of moderate value and therefore risk to the historic environment.

**Scheme area:** Amber

The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value.

The treated effluent discharge pipeline route represents risk to non-designated assets in the HER of low value only.

**Treated effluent discharge pipeline:** Amber

## 4.6 Site area J

### 4.6.1 Scheme

Impact on the setting of the nearest designated heritage asset, the grade I listed Church of St Andrew (NHLE: 1178832), was ruled out in Phase 2B of screening.

There are no non-designated heritage assets within the scheme boundary of enough significance to constrain the development of the scheme at site area J. Impington Park, also shown on historic maps, does not survive well and there is no recorded evidence relating to this within the study area. However there is significant settlement activity of the Late Iron Age and Romano British Period in the study area this is unlikely to be impacted by the construction of the scheme as it is under the modern landfill site.

Historic maps indicate a late post medieval or early modern property within site area J. This appears to be a home or farmstead; its remains would likely be of low value and do not need to constrain the site selection.

There is a very high archaeological potential for Late Iron Age and Romano-British remains, especially relating to the adjacent Mere Way, for site area J. This archaeological potential makes site area J less suitable for development, due to risk to the historic environment and cost of archaeological mitigation. Other features represented on historic cartographic sources are of low value, previously considered or in their modern locations, therefore not further constraining site selection.

### 4.6.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. There are no designated assets located close enough to the proposed treated effluent discharge pipeline to experience a temporary impact on setting during construction.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area J contains one non-designated asset of low value. There is potential for impact to this asset by the proposed works on this route.

Mere Way Roman Road is represented on historic cartographic sources on the proposed treated effluent discharge pipeline route for site area J. It is represented as a track and, unlike

the route further north at Akeman Street, has not experienced substantial modern construction. There is potential for assets of low, moderate and maybe high value to be impacted by the construction of the route here. It should also be noted that there is increased archaeological potential around this site, as discussed in 3.6.

#### 4.6.3 Outcome

The development of the scheme at site area J represents the potential for impact on assets of moderate value and therefore risk to the historic environment.

##### **Scheme area:** Amber

The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value.

The treated effluent discharge pipeline route represents risk to non-designated assets identified in the CHER of low value only.

The proposed treated effluent discharge pipeline crosses an area of high archaeological potential for finds of moderate value dating to the Romano-British Period.

##### **Treated effluent discharge pipeline:** Amber

## 4.7 Site area L

### 4.7.1 Scheme

The archaeological potential for remains of high value in the study area is high and poses a constrain to the site area selection at this stage.

The nearest designated heritage assets Biggin Abbey (NHLE: 1178408) and Home Farmhouse (NHLE: 1331303) are of a sufficient distance from the building works to avoid impact on their setting.

There are four non-designated heritage assets within the scheme boundary of low value. Due to their nature as archaeological findspots they will not be impacted directly by the scheme. There are no features on the cartographic sources of enough significance to constrain site selection.

### 4.7.2 Treated effluent discharge pipeline

There are no designated assets within the area considered for treated effluent discharge pipeline access for this site. The treated effluent discharge pipeline will avoid all listed buildings and scheduled monument at sufficient distance so as to not cause impact. Although the settings of Biggin Abbey (NHLE: 1178408), Wildfowl Cottage NHLE: 1390672) and Popular Hall (NHLE: 1127400) may be impacted during construction; it is considered that this impact would be minor (due to distance and scale of works) and temporary.

The 100m corridor for the proposed treated effluent discharge pipeline route for site area L contains one non-designated assets of low value. Due to their nature as archaeological findspots it will not be impacted directly by the scheme. The archaeological potential for remains of high value in this area is high and poses a constrain to the site selection at this stage.

### 4.7.3 Outcome

The development of the scheme at site area L is constrained by the potential for significant archaeological remains of high value in this location.

**Scheme area:** Amber

The treated effluent discharge pipeline route for either the existing outfall or new outfall pose the same potential risk to significant archaeological remains of high value in this location and potential temporary impact on the setting of designated assets of high value.

**Treated effluent discharge pipeline:** Amber

**4.8 RAG assessment summary**

The tables below provide a summary RAG (red, amber, green) assessment for the proposed scheme at each site, based on the above impact assessment.

**Table 8: Site area Impact Assessment RAG Outcome**

Site area	Outcome	Notes
A	Green	Risk to the historic environment is minimal.
B	Green	Risk to the historic environment is minimal.
C	Amber	Moderate-high potential for assets of moderate value, with assets of moderate value immediately adjacent.
H	Green	Risk to the historic environment is minimal.
I	Amber	Contains a heritage asset of moderate value and has a high archaeological potential.
J	Amber	Immediately adjacent to an asset of moderate value and has a high archaeological potential for assets of moderate value.
L	Amber	Area has a high potential for significant archaeological remains of low, moderate and high value.

**Table 9: Treated effluent discharge pipeline Impact Assessment outcome**

Site area	Outcome	Notes
A	Amber	No potential risk to designated heritage assets of high value. Potential risk to non-designated assets of low and low-moderate value.
B	Amber	No potential risk to designated heritage assets of high value. Potential risk to non-designated assets of low and low-moderate value.
C	Amber	No potential risk to designated heritage assets of high value. Potential risk to non-designated assets of low and low-moderate value.
H	Green	No anticipated impact to designated heritage assets. The treated effluent discharge pipeline route represents risk to non-designated assets of low value only.
I	Green	The treated effluent discharge pipeline route poses no potential risk to designated heritage assets of high value. The treated effluent discharge pipeline route represents risk to non-designated assets of low value only.
J	Amber	Crosses an area of high archaeological potential for significant archaeological remains of high value. Potential impact to non-designated assets of low value.
L	Amber	Minor and temporary potential impact on the setting of designated assets. Area has a high potential for significant archaeological remains of high value.

## 5 Conclusion and recommendations

Site areas A, B and H have the lowest archaeological potential, least anticipated impact on designated assets and least notable features in historic maps and archaeological reports. These are therefore most recommended for development when considering only the historic environment, with site area B especially representing minor potential impact.

Site areas I and J, due to proximity to the Roman road, have a high archaeological potential for findspots and artefact scatters and possibly roadside settlement of the Roman period. The numerous remains found in the adjacent landfill site and identified in the immediate landscape further suggest a high potential for late prehistoric remains. Site area C and L also have a high archaeological potential for significant remains. Therefore, the development of the scheme at site areas C, I, J and L represents potential risk to the historic environment.

None of the proposed scheme areas represent potential impact to the historic environment in the form of impacting designated heritage assets or their settings, which would warrant a red outcome.

The proposed treated effluent discharge pipeline to the existing Cambridge WWTP outfall from sites A, B, C, H I and J poses no potential impact to designated heritage assets or their settings. The proposed treated effluent discharge pipeline route for site L could result in minor, temporary change within the setting of designated heritage assets, which may negatively impact their significance during the construction period. The treated effluent discharge pipeline from sites A, B and C crosses remains identified in the HER with potential moderate value. The treated effluent discharge pipelines for all sites except I and H cross known assets identified in the HER, with anticipated low value. The route for sites A, B, C, and H crosses Akeman Street former Roman Road at a point of low archaeological potential due to previous development. The treated effluent discharge pipeline from sites J and L crosses areas of high archaeological potential.

It is recommended that consultation is undertaken with the Cambridgeshire Historic Environment Team, (archaeological advisors for South Cambridgeshire District Council) and Historic England (for the treated effluent discharge pipeline options), following the selection of the chosen option but before detailed design.

As well a detailed assessment of the final scheme, non-intrusive archaeological surveys (geophysical survey and remote sensing assessment) and intrusive archaeological evaluation is likely to be required by the stakeholders prior to the planning submission for the scheme. Time in the pre-submission programme, should be allowed for these works.

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## 7 Gazetteer of heritage assets

### A.1 Designated Heritage Assets

There are no designated heritage assets identified within the proposed scheme area, buffer zones, access roads of treated effluent discharge pipeline route corridors for each shortlisted site. The gazetteer below relates to heritage assets identified outside of this area and discussed as appropriate within the above text.

**Table 10: Designated Heritage Assets**

MM number	NHLE number	Name	Designation	Period	Description
MM001	1006930	Car Dyke	Scheduled monument	Roman	A roman dyke, the record for which is taken from an old county number (OCN).
MM002	1010368	Belsar's Hill ringwork	Scheduled monument	Medieval	Belsar's Hill is a very well preserved example of a medieval ringwork incorporated into a later medieval field system. The ringwork is well documented historically and, unusually, provides evidence of earlier use in the Prehistoric period as a fortified Iron Age site. The later medieval cultivation earthworks, which overlie the site, are an important source of information on the dating of the ringwork and will have sealed below ground remains of the interior. The remains of the field system and medieval trackway indicate the complex and changing patterns of land use in rural East Anglia throughout the medieval period.
MM003	1011778	Giant's Hill Motte Castle	Scheduled monument	Medieval	Giant's Hill is associated with the remains of part of a medieval settlement and earthworks representing its arable fields. Such settlements and fields were a significant component of the rural landscape in medieval England and provide important information on the diversity of medieval settlement patterns and farming economy between regions and through time. Although the top of the motte was partially altered by small-scale activity during the Second World War, the discovery of fragments of early masonry confirmed that the top of the motte retains medieval building foundations. The waterlogged ditches also contain deposits which are likely to include evidence for the medieval environment and farming economy of the adjacent area. The castle is known to have been abandoned during construction and further investigation will enable a greater understanding of the building

MM number	NHLE number	Name	Designation	Period	Description
					techniques employed for such fortifications. The associated village and ridge-and-furrow earthworks are partially overlain by the castle earthworks, favouring the preservation of archaeological remains and of a buried land surface from which further environmental evidence may be obtained.
MM004	1127278	31, High Street	Grade II listed building	17th/18th century	Cottage, late C17 or C18 altered in C19 and C20. Timber framed rendered, but lower part of front wall cased in mid C19 gault brick and above is C20 common brick casing. Steeply pitched long straw thatched roof with small ridge and end stacks. Single range and three room plan. One storey and attic. Three tiled, gabled dormers with horizontal sliding sashes, with small panes. Three flush frame hung sashes of sixteen panes each probably early-mid C19 on either side of contemporary reeded doorcase with boss enrichments at corners.
MM005	1164084	Tower Mill, Cottenham	Grade II listed building	19th century	Tower windmill, now a water tower. Early-mid C19. Brick, tarred. Three stages with cap removed.
MM006	1331270	59 and 61 Cottenham Road	Grade II listed building	17th century	Pair of cottages. C17. Timber framed with panelled plaster. Long straw thatch roof. Painted brick gable and weather boarding. Painted brick ridge stack. One storey and attic. Two casement dormer windows four ground floor casement windows. Two, C19 reed-panelled doors with C19 gabled porches with barge boards and finials.
MM007	1179106	Baptist Chapel	Grade II listed building	19th century	Chapel. A.D. 1854 inscribed on recessed stone plaque above main entrance. Gault brick, slate roof. One storey with gallery. Pedimented gable to street with giant corner pilasters each with moulded capitals and bases. Two gallery windows with iron glazing bars patterned to round headed brick arches. Double flush-panelled doors to main entrance with stone impostes and key block in round headed brick arch; fixed lantern in fanlight with glazing bars. Gallery intact with patterned east iron platform and lamp brackets.
MM008	1178832	Church of St Andrew	Grade I listed building	13th, 14th, 15th, 16th and 19th centuries	Parish church. Early C13 nave and tower, upper stages rebuilt C14, and rood stair. South porch C15, chancel rebuilt during restoration of 1878, dated rain water heads. Walls of Barnack limestone with limestone and pebble rubble. Timber framed porch. Plain rille roofs with gable parapets to nave and chancel with cross finials. South elevation: Tower of three stages with Barnack limestone quoins, C15 embattled parapet with corner finials and angle gargoyles, two-centred arched, two-light belfry window. Nave with three original quoins and masked corbels. Two, three-light cinquefoiled windows restored in 1981. Sealed

MM number	NHLE number	Name	Designation	Period	Description
					lancet window to west of south porch. South porch, restored in 1878, timber frames with pierced decorated barge boards, embattled cornice and side lights of three cinquefoil lights. Rebuilt chancel incorporating C12 and C13 carved stones and one shaft and capital with carved head in angle and wall arcade. Incised mass dial in buttress of south wall. Interior. Nave with late C15 crown post roof of three bays with moulded tie beams, wall posts and cornice; slender crown posts braced to collar purlin. Tie beam to east cut for C19 chancel arch and supported on heavy stone corbels. Fine C15 fresco of St Christopher. C16 niche set at angle in window of north wall. Chancel with C19 scissor braced roof, chancel arch raised and widened in 1879. Lower arch, two-centred springing from semi-octagonal shafts with moulded caps. C13 font, octagonal basin on moulded base with octagonal shafts. Pews rebuilt with four, poppy head bench ends.
MM009	1178408	Biggin abbey	Grade II* listed building	14th and 17th century	Farmhouse. Late C14 with C17 additions and alterations. Cement rendered limestone and clunch and local C17 brick. Concrete tile copings to main gable parapets. Modern red pantiles and old plain tile roofs. Two storey main range, one storey and attic extensions to south west. South east elevation has lateral buttresses of three stages and rendered plinth. Three replacement first floor two-light casement windows. Main entrance to left hand with panelled door. Inserted C17 stack originally with shaped shafts partly rebuilt to right hand. C17 gable extensions of perhaps two building periods with parapet gable and stack and end stack to lower range. Yellow and red local brick with band and chequer patterning. Modern fenestration; one dormer window and four ground floor windows of various sizes. Boarded door to right hand. For interior details and reconstruction of original building see R.C.H.M. East Cambs. The farmhouse is a surviving part of the residence of The Bishops of Ely and was visited by Henry III, Edward I and Edward II, it was once moated. A small attic room known as the 'Monks Prison' may have been used as a chapel and was described by Wm Cole.
MM010	1390672	Wildfowl Cottage	Grade II listed building	17th and 19th century	House. Probably late C17 with early C19 addition and some later alterations. Whitewashed brick and timber-frame with old plain-tile roof of two colours in wide bands. Large stack on rear slope to right. Stack on front slope to left and further tall stack on single-storey addition. Probably 3-unit lobby-entry plan originally with single-storey service addition to west. Main range is of 2 storeys. 4-window range at first

MM number	NHLE number	Name	Designation	Period	Description
					<p>floor of 3 2-light casements and a single-light casement, the former horizontal sliding sashes. To ground floor the entrance is in a flat-roofed porch with casements to either side. 2-light C20 window on left end, small window above. There is a small-paned window in the addition to right which has a horizontal sliding sash on the end wall with a 2-light casemnet above. Rear has further casements including a horizontal sliding sash to left. INTERIOR. Bridging beams, some boxed, are visible. The large main stack has back-to back open fireplaces, one visible. A reception room has a full-height fitted corner cupboard whilst the western service addition retains a range, copper and bread oven. HISTORY. In the C18 the house appears to have been part of the lands owned by the Wollard famiy including nearby Biggin Abbey (q.v.), and was perhaps always associated with river traffic. In the C19 and early C20 it was a public house known as the Pike and Eel, no doubt serving barge traffic as it stands very close to Bates Bite Lock. This house retains much from the C17, C18 and C19 including interior fittings and service features, as well as the unusual surviving windows and the massive stack.</p>
MM011	1127400	Poplar Hall	Grade II listed building	17th and 18th century	<p>Farmhouse. Early C17 with plastered plaque 'Repd 1905'. Timber-framed with rendered margins to rough cast panels. Plain tile roof with some C17 crested ridge tiles. Two large red brick ridge stacks with round headed recessed panels. Two storeys and attics. Hall and cross-wing plan with central facade gable. C17 moulded barge boards. Three, three-light attic casement windows. Three, larger first floor casement windows. One ground floor three-light hung sash window to left hand of C18 six-panelled door with moulded wooden architrave and bracketed hood with soffit panels. Two casement windows to right hand. Interior stop-chamfered ceiling beams, C17 closed string oak staircase with splat balusters, and C17 plank doors.</p>

Source: NHLE

## 7.1 Non-designated Heritage Assets

**Table 11: Non-designated assets within the study area for site area A**

MM number	HER number	Name	Type	Period	Description
MM012	09555	Undated circular cropmark	Cropmark	Undated	An undated circular cropmark.
MM013	MCB16662	Unstratified findspot	Findspot	Undated	An undated findspot for an unstratified, indeterminate object
MM014	MCB25756	Possible field boundaries	Cropmark	Post-medieval	A cropmark, which likely represents post medieval field boundaries.
MM100	MCB20163	Pottery at 25 Cow Lane	Findspot	Roman; Victorian	Roman and Victorian pottery recovered in the back garden of 25 Cow Lane

Source: CHER

**Table 12: Non-designated assets within the study area for site area B**

MM number	HER number	Name	Type	Period	Description
MM015	MCB20966	Ridge and furrow marks	Cropmark	Medieval (?)	Possibly medieval cropmarks representing ridge and furrow and field boundaries
MM016	MCB25758	Field boundaries	Cropmark	Post-medieval	Cropmarks which probably represent post medieval field boundaries
MM017	MCB25757	Possible windmill mound	Monument	Medieval – post-medieval	An earthwork representing a possible windmill mound
MM018	05285	Pottery findspot	Findspot	Romano-British	A findspot for Romano-British pottery
MM019	MCB23770	Ridge and furrow marks	Monument	Medieval (?)	Probably medieval ridge and furrow cropmarks.
MM020	08163	Rampton medieval village	Record	Medieval	The possible site of Rampton early medieval

MM number	HER number	Name	Type	Period	Description
					village based on historic documentation
MM021	MCB23757	Pottery findspot	Findspot	Post-medieval	A findspot for post medieval pottery
MM022	MCB17325	Rabbit warren	Monument	Post-medieval	An earthwork, possibly representing a post medieval findspot
MM023	MCB20965	Ridge and furrow marks	Cropmark	Medieval – Post-medieval	Cropmarks of ridge and furrow.
MM024	MCB20964	Unknown ditch	Monument	Unknown	A ditch of unknown date
MM025	MCB24973	Rectilinear enclosures	Cropmark	Unknown	Cropmarks of rectilinear enclosures of unknown date
MM026	MCB24972	Undated ring ditch	Cropmark	Unknown	Cropmarks of an undated ring ditch
MM027	MCB22760	Ridge and furrow marks	Cropmark	Medieval – Post-medieval	Crop marks of ridge and furrow
MM028	MCB17967	Undated pit	Cropmark	Unknown	Cropmarks of a pit and ditch of unknown date.
MM029	MCB19611	The dismantled Cambridge and St Ives railway branch	Documentary Evidence	19th and 20th century	Prior to the current railway, the St Ives and Cambridge line (since dismantled) ran on the same route.

Source: CHER

**Table 13: Non-Designated Assets within the study area for site area C**

MM Number	HER Number	Name	Type	Period	Description
MM030	MCB25738	Agricultural cropmarks	Cropmark	Post medieval	Field boundary and ridge and furrow cropmarks
MM031	MCB24990	Enclosures at Cuckoo Hill Farm	Cropmark	Iron Age or Romano-British	Cropmarks representing enclosures at Cuckoo Hill Farm
MM032	12301	Westwick Hall Park and Gardens	Record	Post medieval	The suspected former boundary of Westwick hall Park and Gardens, based on documentary evidence.
MM033	MCB23976	Farmhouse	Record	Post medieval	The site of a 19 <sup>th</sup> century Farmhouse
MM034	01787	Enclosure cropmarks	Cropmark	Iron Age or Romano-British	Cropmarks representing Early Iron Age to Roman enclosures.
MM035	MCB25742	Sand and gravel site	Cropmark	Post-medieval	A post medieval sand and gravel extraction site
MM036	07800	Undated enclosures	Cropmark	Unknown	Cropmarks of undated rectangular enclosures
MM037	MCB21164	Cropmark enclosures	Cropmark	Iron Age to Romano-British	Early Iron Age to Romano-British curvilinear enclosures
MM033	MCB20804	Ridge and furrow	Monument	Medieval to Post medieval	Early medieval to 17 <sup>th</sup> century ridge and furrow
MM039	05190	Possible bank	Cropmark	Unknown	A possible bank cropmark of unknown date
MM040	09547	Enclosure cropmarks	Cropmark	Iron Age to Romano-British	Iron Age to Romano-British enclosures
MM041	MCB25747	Sand and gravel site	Cropmark	Post medieval (?)	A possible post medieval sand and gravel extraction site
MM042	MCB20913	Roman features	Monument	Romano-British	Romano-British features including a ditch, an enclosure, a pit and a well

MM Number	HER Number	Name	Type	Period	Description
MM043	MCB20801	Ditch and ring ditch	Monument	Iron Age	A late Iron Age ditch and ring ditch
MM044	MCB20530	Multiperiod features	Cropmark	Iron Age to modern	A complex of Late Iron Age to modern features
MM045	MCB20802	Early Saxon features	Monument	Early medieval	A complex of early medieval features
MM046	MCB20803	Ring ditch	Monument	Iron Age	A Late Iron Age ring ditch
MM047	MCB23977	Settlement	Monument and cropmark	Iron Age and Romano-British	Iron Age and Romano-British features including features suggestive of a settlement, including an enclosure
MM048	MCB20471	Multiperiod features	Monument	Romano-British and medieval	Roman ditches overlain with medieval field boundaries and plough lines.
MM049	MCB21417	Ridge and furrow	Cropmark	Medieval to post-medieval	Cropmarks of ridge and furrow
MM101	11503	Possible enclosure	Cropmark	undated	Cropmark representing a possible enclosure at Cottenham.

Source: CHER



**Table 14: Non-Designated Assets within the study area for site area H**

MM Number	HER Number	Name	Type	Period	Description
MM050	MCB22693	Artefact scatter	Findspot	Iron Age	A scatter of Iron Age artefacts
MM051	MCB25692	Undated cropmarks	Cropmark	Unknown	Undated cropmarks
MM052	MCB16778	Multiperiod features	Cropmark and monument	Iron Age, Romano-British and post-medieval	Crop marks and earthworks, some of which have been excavated and dated to the Late Iron Age and Early Romano-British periods and to the post-medieval.
MM053	MCB22692	Artefact scatter	Findspot	Romano-British	A scatter of Romano-British finds
MM054	MCB25691	Cropmark enclosure	Cropmark	Iron Age or Romano-British	Cropmarks relating to a possible Iron Age or Roman enclosure
MM055	08321	Undated cropmarks	Cropmark	Unknown	Cropmark enclosures of unknown date
MM056	MCB22579	Mill Lane	Building	Post-medieval	Mill Lane 19 <sup>th</sup> century farm building
MM057	MCB22694	Roman features and scatter	Findspot, cropmark and earthwork	Romano-British	A Roman artefact scatter with associated features including a ring ditch and a possible barrow.
MM058	MCB25693	Field system	Cropmark	Medieval – post-medieval	A possible medieval or post medieval field system.
MM059	MCB17758	Artefact scatter	Findspot	Romano-British	A scatter of sherds of Romano-British pottery

Source: CHER

**Table 15: Non-designated Heritage Assets within the study area for site area I**

MM Number	HER Number	Name	Type	Period	Description
<u>MM060</u>	<u>08778A</u>	<u>Bronze Age findspot</u>	<u>Findspot</u>	<u>Bronze Age</u>	<u>A findspot for Bronze Age artefacts</u>
MM061	08315	Rectilinear cropmark	Cropmark	Unknown	A cropmark of a possible rectilinear feature of unknown date
MM062	05538	Pottery findspot	Findspot	Romano-British	A findspot for sherds of Roman pottery
MM063	05273C	Pottery findspot	Findspot	Post-medieval	A findspot for a sherd of post medieval pottery
MM064	08779A	Undated findspot	Findspot	Unknown	A findspot for an undated metal disc
MM065	MCB16263	Multiperiod findspot	Findspot	Romano-British and medieval	A findspot for Romano-British and medieval artefacts
MM066	MCB16262	Coins findspot	Findspot	Iron Age	A findspot for Late Iron Age coins
MM102	05273B	Medieval pottery, Milton	Findspot	Medieval	An artefact scatter of medieval pottery
MM109	05273	Mesolithic blade, Milton	Findspot	Mesolithic	An artefact scatter including a Mesolithic flint blade.
MM110	05273A	Roman Pottery, Milton	Findspot	Romano-British	A Romano-British artefact scatter including pottery.

Source: CHER

**Table 16: Non-designated assets within the study area for site area J**

MM Number	HER Number	Name	Type	Period	Description
<u>MM067</u>	<u>12129</u>	<u>Impington Park</u>	<u>Record</u>	<u>Post-medieval</u>	<u>The former site of Impington Hall Park and Gardens</u>
MM068	MCB25715	Boundary banks	Monument	Medieval to post-medieval	Medieval and post medieval boundary banks
MM069	11209	Undated tile	Findspot	Unknown	Findspot for an undated tile
MM070	MCB20022	Ridge and furrow	Monument	Medieval	Medieval ridge and furrow
MM071	CB15707	Multi-period remains	Monument	Bronze Age, Iron Age and Romano-British	Bronze Age, Iron Age and Romano-British remains in Milton landfill site
MM072	MCB19563	Multi-period features	Monument	Early Neolithic - modern	A cluster of features, probably from the early Neolithic to modern period in Milton landfill site
MM073	CB15711	Pit cluster	Monument	Iron Age	A cluster of Iron Age pits in Milton landfill site
MM074	10211D	Findspot	Findspot	Post-medieval	A post medieval findspot
MM075	MCB19987	Iron Age and Roman remains	Monument	Iron Age and Romano-British	A complex of Iron Age and Romano-British features in Milton landfill site
MM076	CB15708	Iron Age Remains	Monument	Iron Age	Iron Age remains in Milton landfill site
M0077	10211A	Prehistoric pottery	Findspot	Neolithic to Iron Age	Findspot for a prehistoric pottery sherd
MM078	10211E	Iron Age to Roman findspot	Findspot	Iron Age to Romano-British	A findspot for Iron Age and Romano-British artefacts
MM079	07610	Akeman Street	Monument	Romano-British	A section through the Akeman Street/ Mere Way Roman Road.
MM103	10211B	Butt Lane	Findspot	Romano-British	A Romano-British artefact scatter.
MM104	CB15709	Milton landfill (Area D)	Monument	Iron Age	Post holes and a linear feature, likely Iron Age, found during excavations of Milton Landfill site.
MM105	CB15698	Neolithic and Bronze Age Remains	Monument	Neolithic and Bronze Age	A pit, post holes and a round house dating to the Bronze Age and/or Neolithic period, discovered during excavations of Milton landfill Site.

MM Number	HER Number	Name	Type	Period	Description
MM106	MCB175277	Trinity Vehicle Depot	Monument/ Documentary Evidence	WWII	The location of WWII trinity vehicle depot.
MM107	10211	Milton Landfill Findspot	Findspot	Prehistoric	Location of a scatter of prehistoric lithics recovered on the Milton Landfill site.
MM108	10211C	Butt lane, Milton	Findspot	Medieval	A scatter of medieval pottery off Butt Lane at the Milton Landfill Site

Source: CHER

**Table 16: Non-designated assets within the study area for site area L**

MM Number	HER Number	Name	Type	Period	Description
<u>MM080</u>	<u>MCB27289</u>	<u>Furlong Boundaries in the parish of Lode</u>	<u>Monument</u>	<u>Unknown</u>	<u>A levelled earthwork representing the likely post medieval boundary of the parish of Lode.</u>
<u>MM081</u>	<u>11195</u>	<u>Prehistoric pottery</u>	<u>findspot</u>	<u>Prehistoric</u>	<u>Prehistoric pottery identified during the A45 Girton to Stow cum Quy fieldwalking survey, field 8.</u>
MM082	11203B	Post medieval pottery	Findspot	Post Medieval	Post Medieval findspot identified during the A45 Quy fieldwalking survey field 16.
MM083	06344	Bronze Age Palstave	Findspot	Bronze Age	Location where a Bronze Age Palstave (A type of axe) was recovered
MM084	05611	Ridge and Farrow	Monument	Medieval	Medieval ridge and furrow.
MM085	11194	Multiperiod finds	Findspot	Early Neolithic-Medieval	Multiperiod finds from the Early Neolithic to the Medieval period identified during the A45 Girton to Stow cum Quy fieldwalking survey, field 8.
MM086	05612	Ridge and Farrow	Monument	Medieval	Medieval ridge and furrow.
MM087	05324	Medieval Earthworks	Monument	Medieval	Medieval ridge and furrow.
MM089	05470	Ridge and furrow, Abbots Ditch Field	Monument	Medieval	Medieval ridge and furrow.
MM088	05798	Ridge and Farrow	Monument	Medieval	Medieval ridge and furrow.
MM089		Post medieval pottery	Findspot	Post Medieval	Post Medieval findspot identified during the A45 Quy fieldwalking survey field 21.
MM090	11207	Soilmarks and earthworks	Monument	Unknown	Location of unknown earthworks found during the A45 Quy fieldwalking survey field 20.
MM091	07812	Bronze Age Worked Flints	Findspot	Bronze Age	A find spot for Bronze Age Flints.

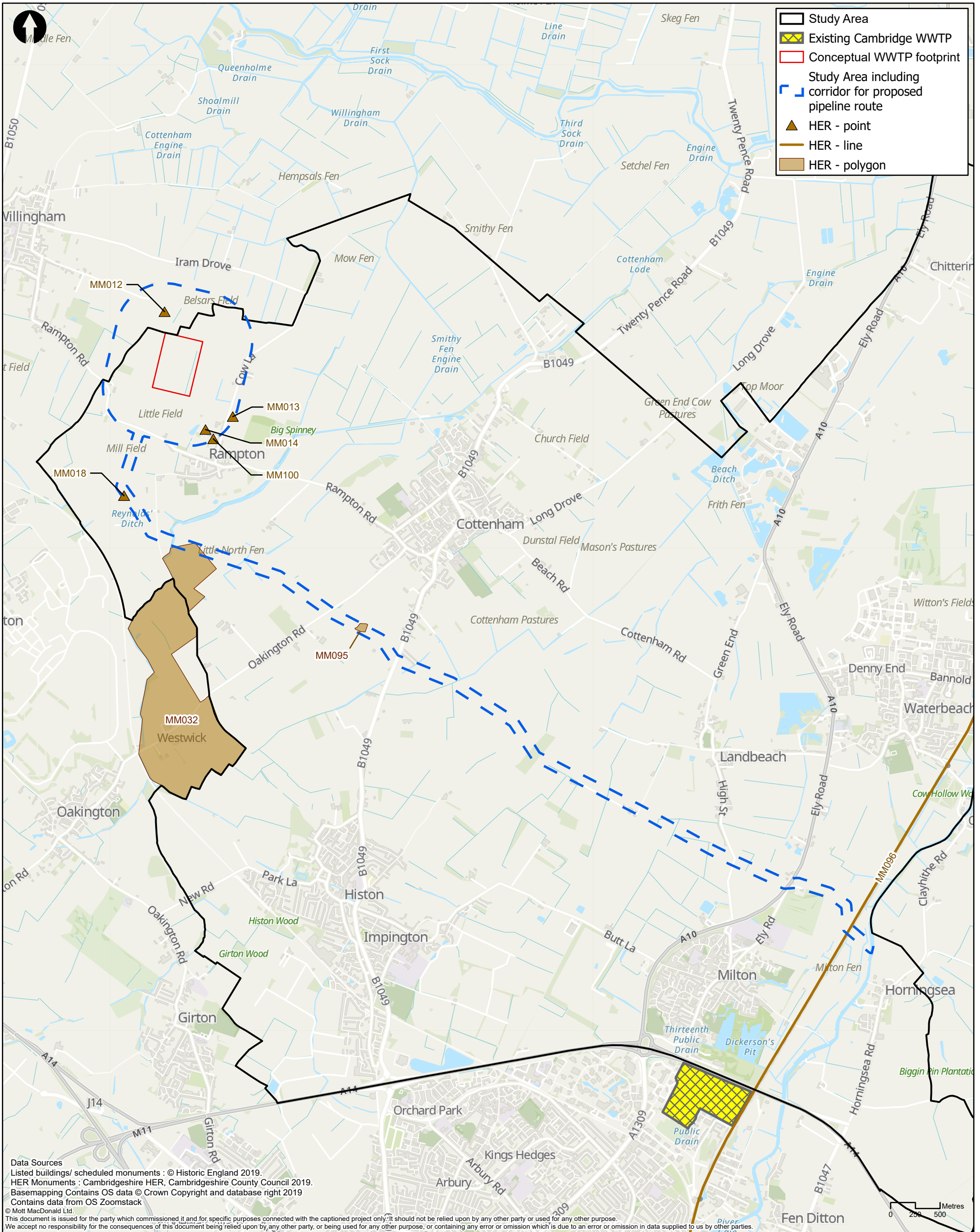
MM Number	HER Number	Name	Type	Period	Description
MM092	07633	Barnwell Junction to Mildenhall railway (disused)	Monument	19 <sup>th</sup> -20 <sup>th</sup> Century	Location of the (now disused) Barnwell Junction to Mildenhall railway known from documentary evidence.
MM093	11555	Roman pottery scatter and cropmarks	Monument	Roman	Location of a Roman pottery scatter and enclosure cropmarks.
MM094	06343	Bronze Age Pot and Spear	Findspot	Bronze Age	Location where Bronze Age pottery and a spearhead was recovered
MM111	11203	Roman Pottery	Findspot	Romano-British	An unstratified piece of Romano-British pottery recovered during the A45 Quy fieldwalking survey, field 8.

Source: CHER

**Table 17: Non-designated assets within the Treated effluent discharge pipeline Corridors**

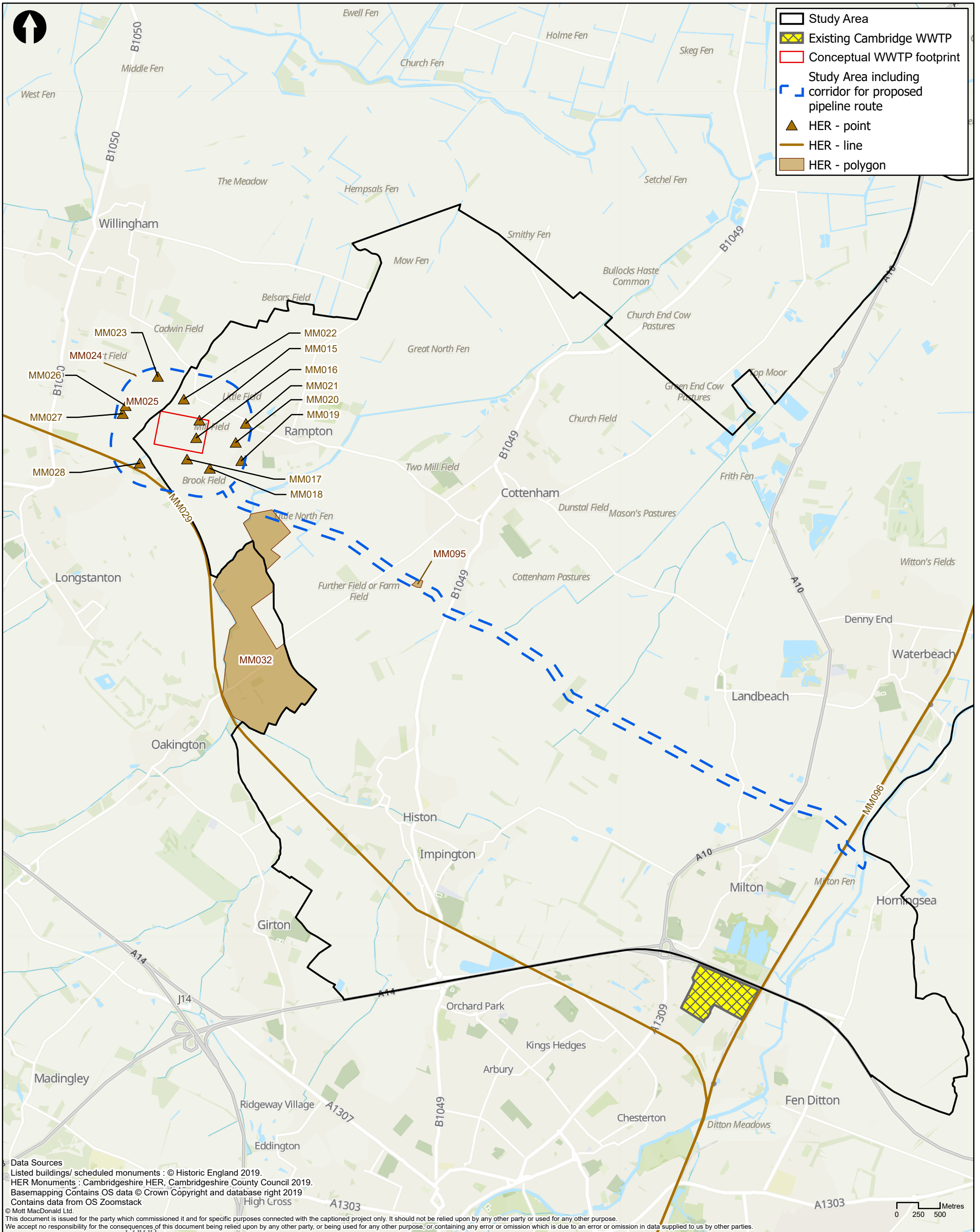
site area	MM Number	HER Number	Name	Type	Period	Description
Site areas A and B	MM018	05285	Pottery findspot	Findspot	Romano-British	A findspot for Romano-British pottery (see also non-designated assets within site area B study area)
	MM032	12301	Westwick Hall	Former park and gardens	Post-medieval	The location of the former Park and Gardens which belonged to Westwick Hall. The park and Gardens are no longer present, but documentary evidence suggests they once consisted of; a plantation; a walled garden; a tree belt; an ornamental pond; a windmill; a kiln; a malt house; a dovecote; a tree avenue and a garden.
Site areas A, B and C	MM095	MCB21414	Iron Age to Roman Enclosure site, Cottenham	Cropmark	Early Iron Age to 5th century Romano - British	Cropmarks representing an enclosure comprising; a rectilinear enclosure; a trackway and a ditch. The cropmarks date is unknown, but the enclosure was likely occupied for a period of time between the early Iron Age period to the 5th century Romano-British period.
Site areas A, B, C, H, I and J	MM096	MCB21582	Great Eastern Railway (Cambridge Line)	Monument	19th and 20 <sup>th</sup> century	The location of the former Cambridge branch of the Greta Eastern Railway, running parallel to the existing railway. There are no visible remains of the line, as its materials were likely repurposed following falling into disuse. Remaining earthworks have also been largely disrupted by the continuing works to the other rail lines. The predominant evidence for this line is documentary.
Site area J	MM066	MCB16262	Coins findspot	Findspot	Iron Age	A findspot for Late Iron Age coins
Site area L	MM097	11193	Multiperiod finds	Findspots (multiple)	Romano-British to Post-medieval	Finds from the 1 <sup>st</sup> to 19 <sup>th</sup> centuries discovered during A45 Girton to Stow cum Quay fieldwalking survey of field 6.
	MM098	MCB27455	Former Clay Pit	Monument	19 <sup>th</sup> Century	Former Clay Pit identified on documentary evidence.
	MM099	08327	Unknown Cropmark	Cropmark	Unknown	A cropmark of unknown date and nature.

## 8 Drawings



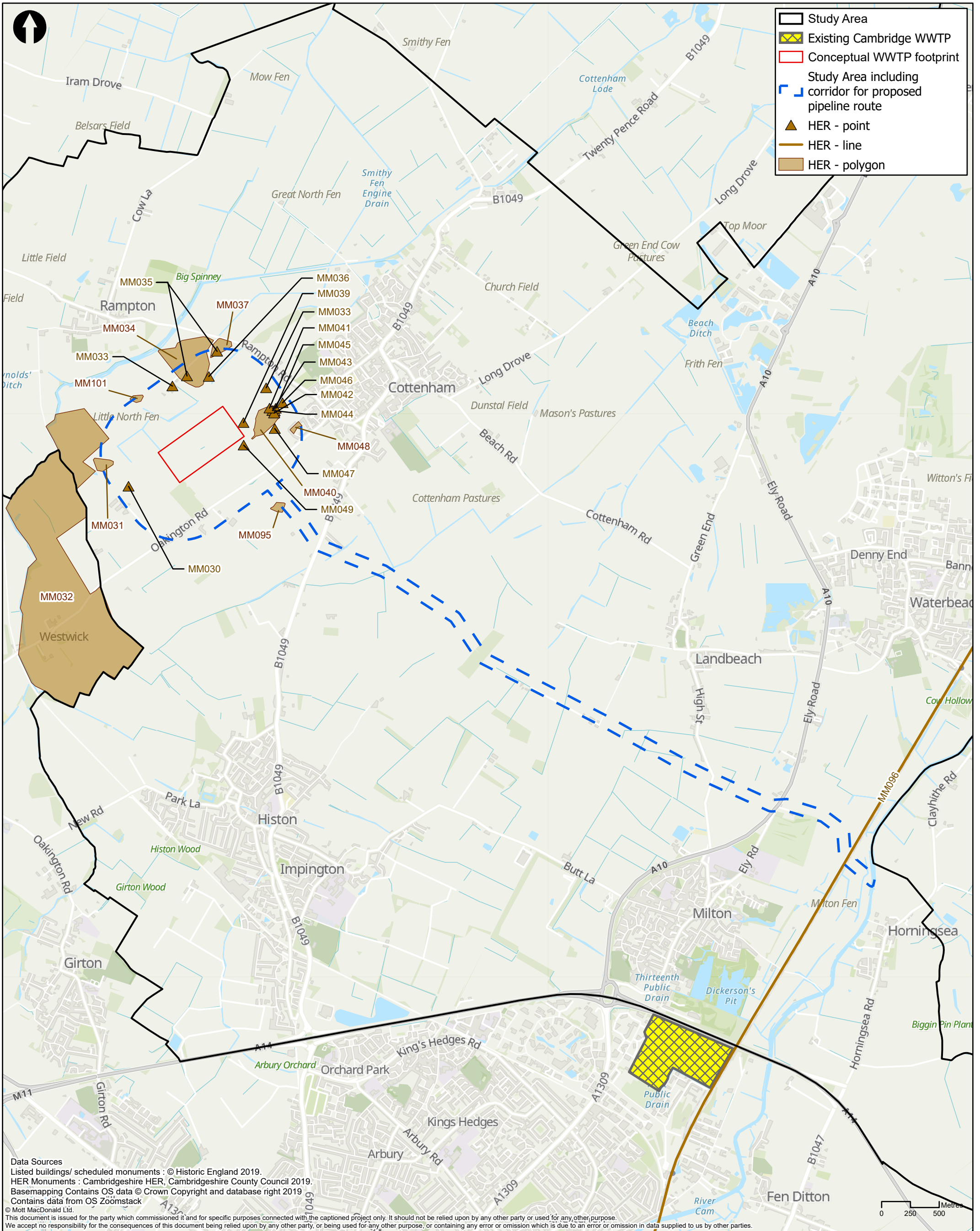
<p><b>MOTT MACDONALD</b></p> <p>22 Station Road Cambridge CB1 2JD United Kingdom</p> <p>T +44 (0)20 8774 2000 F +44 (0)20 8681 5706 W mottmac.com</p>	<p>Client</p>					<p>Title</p> <p>Cambridge WWTP Relocation Project Site Selection Stage 3 Site A Historic Environment</p>			<p>Drawn</p> <p>A Briggs</p>												
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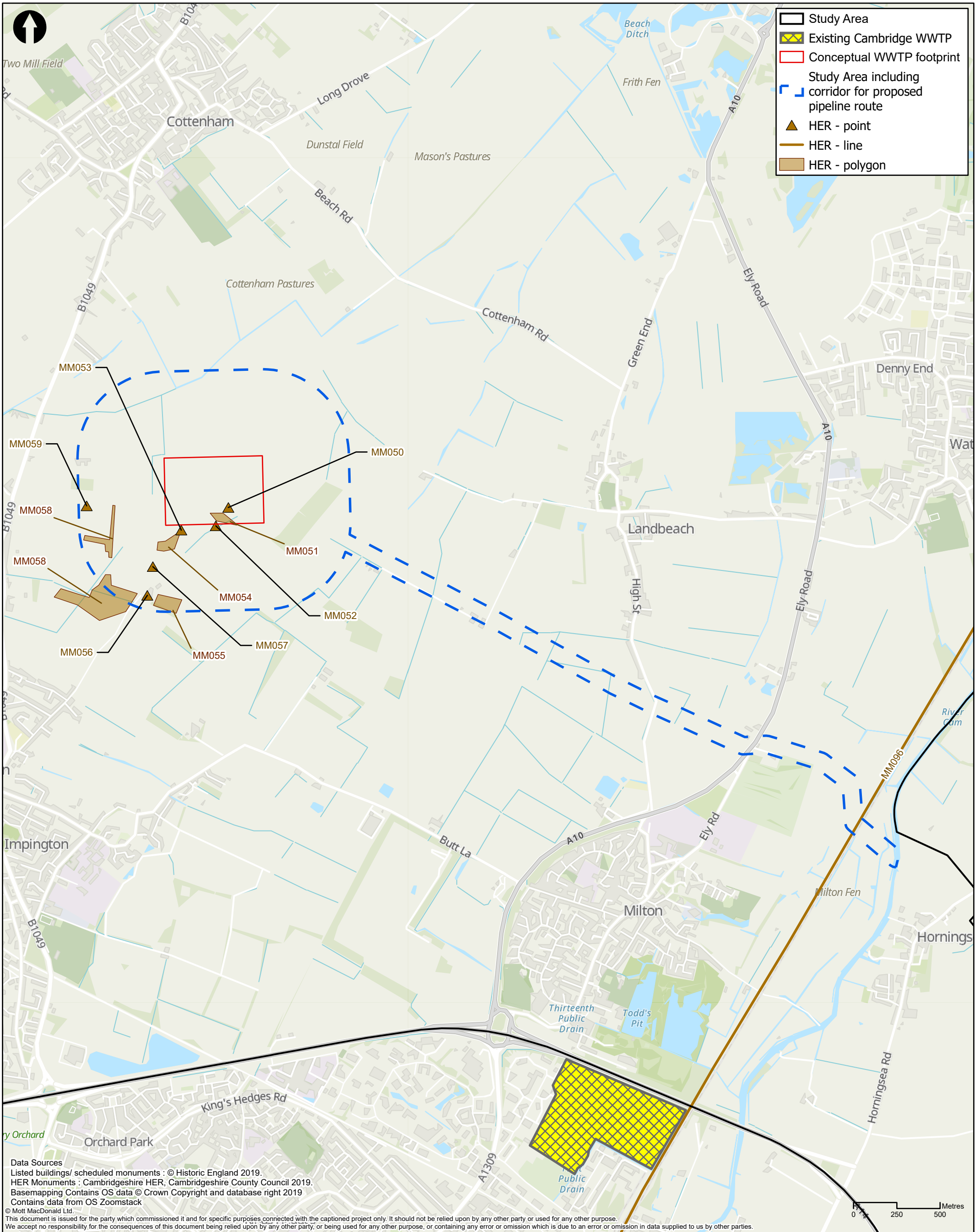
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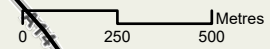
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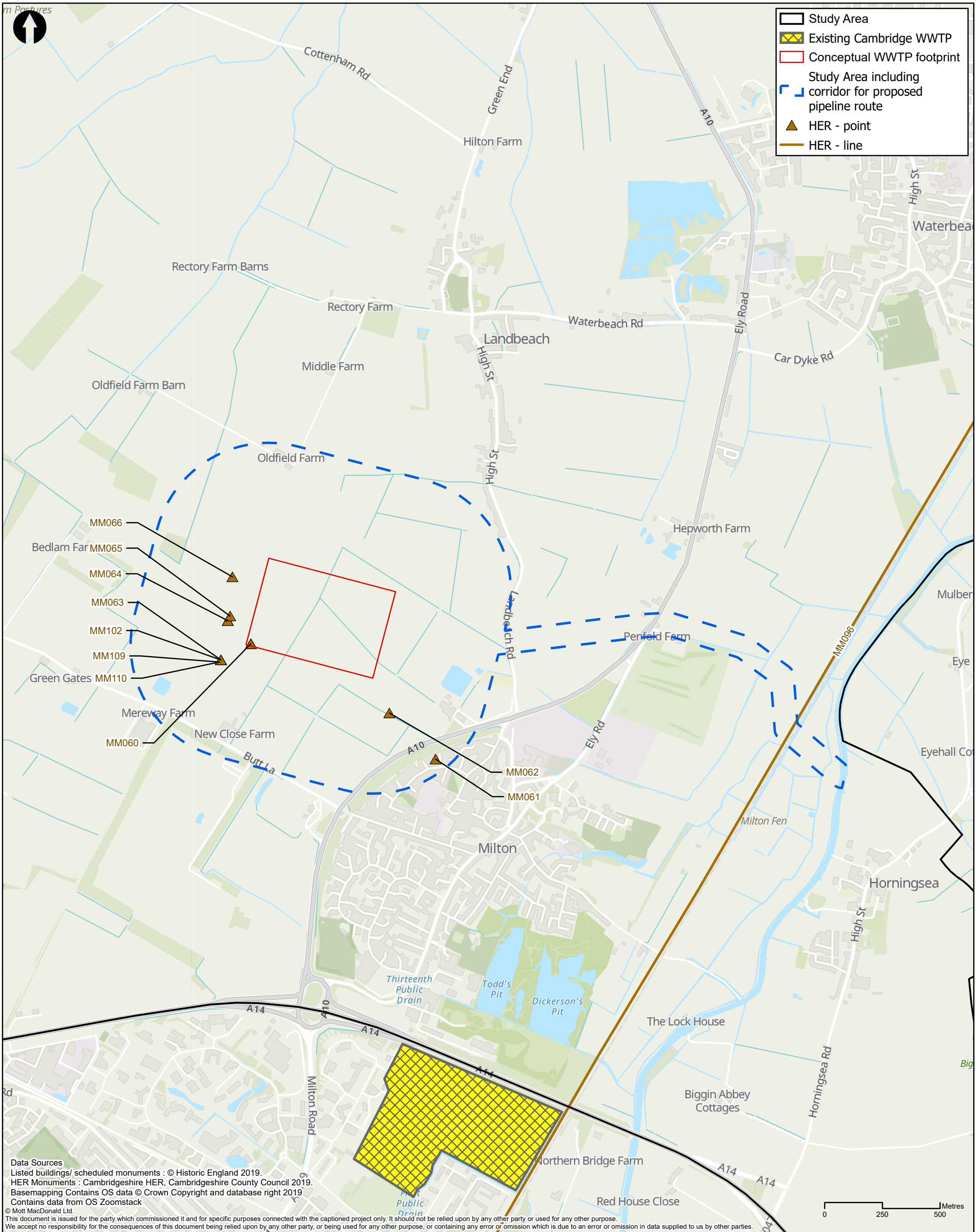
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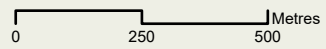
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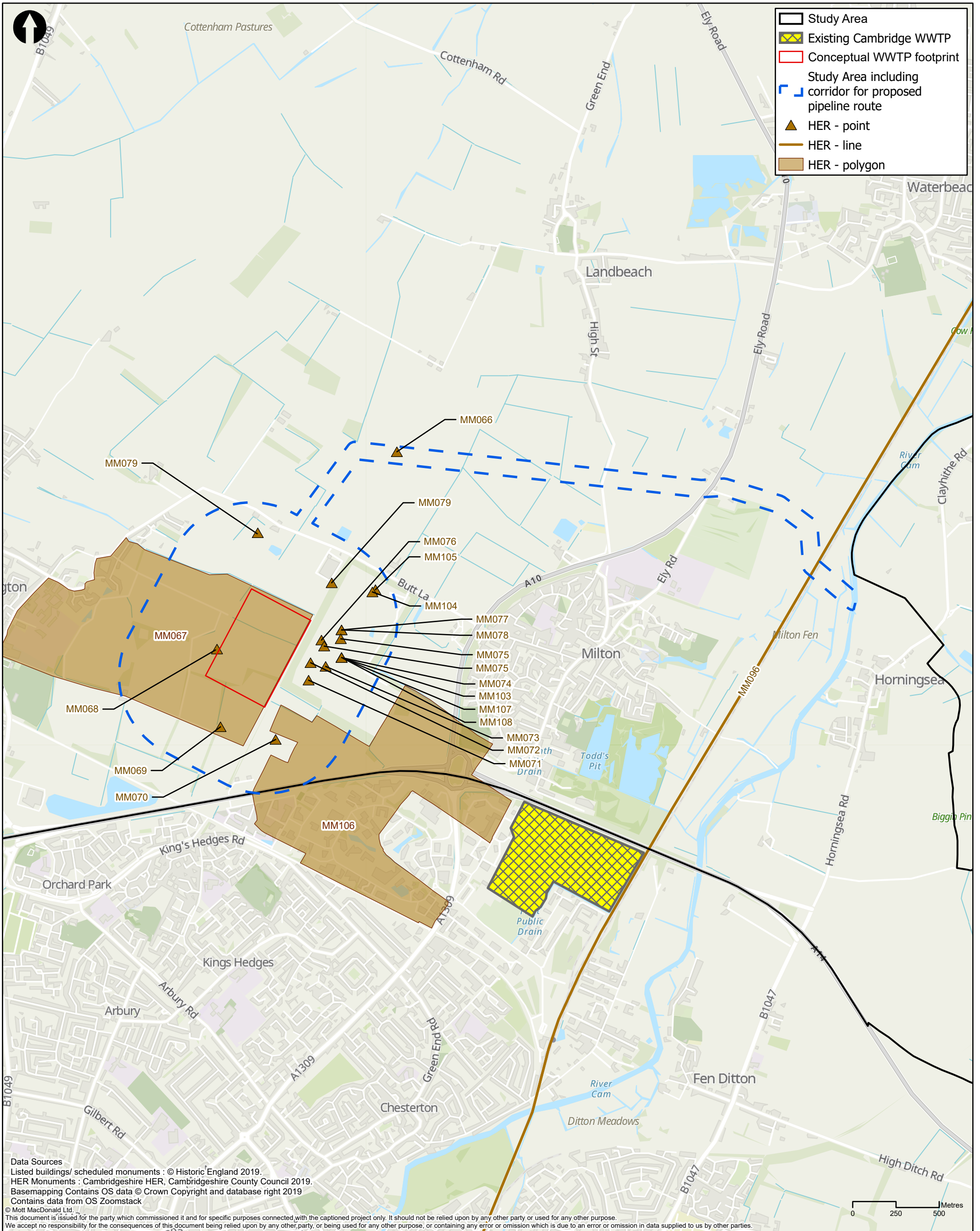
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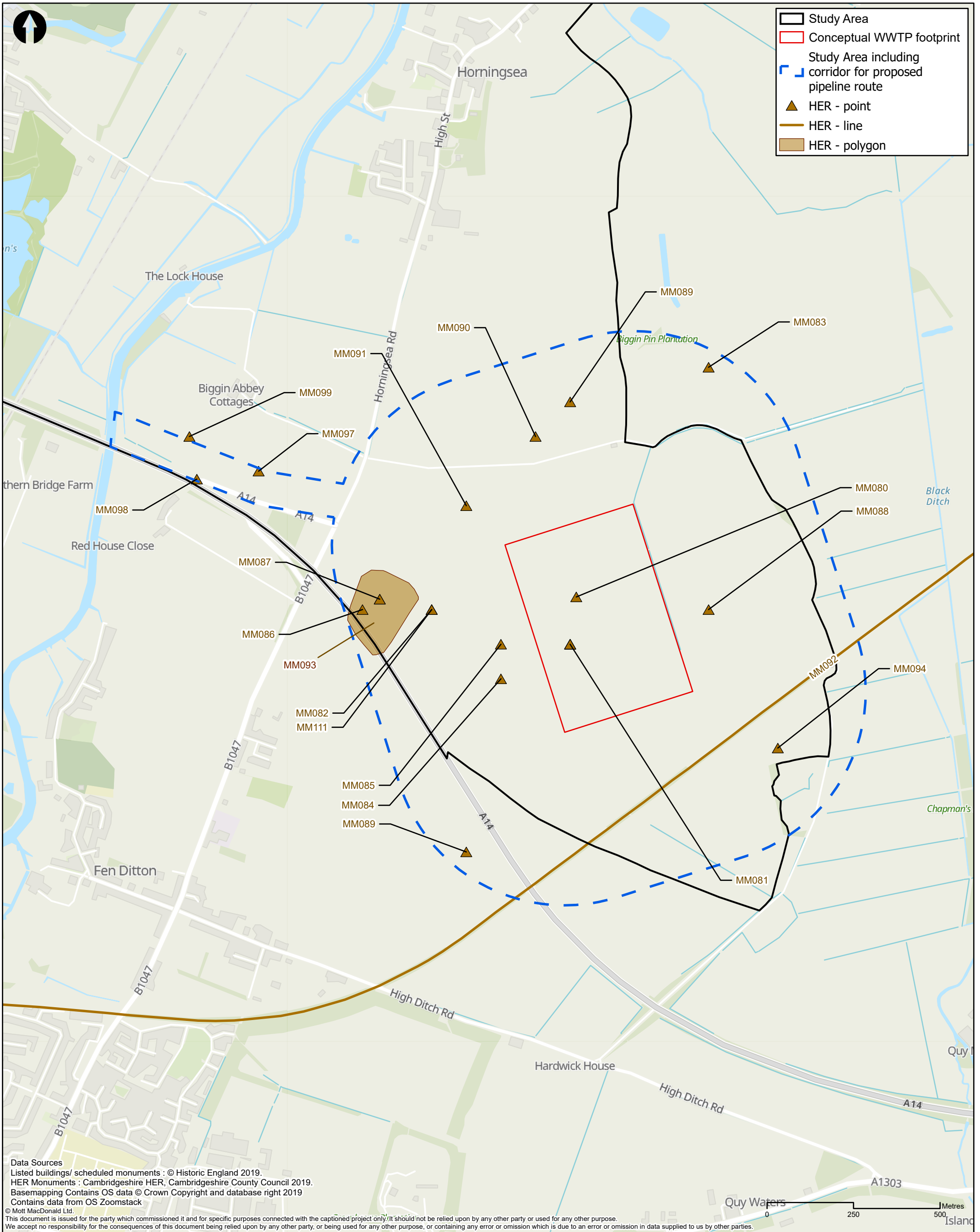
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Calling our Freephone information line on **0808 196 1661**



Writing to us at **Freepost: CWWTPR**

You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

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