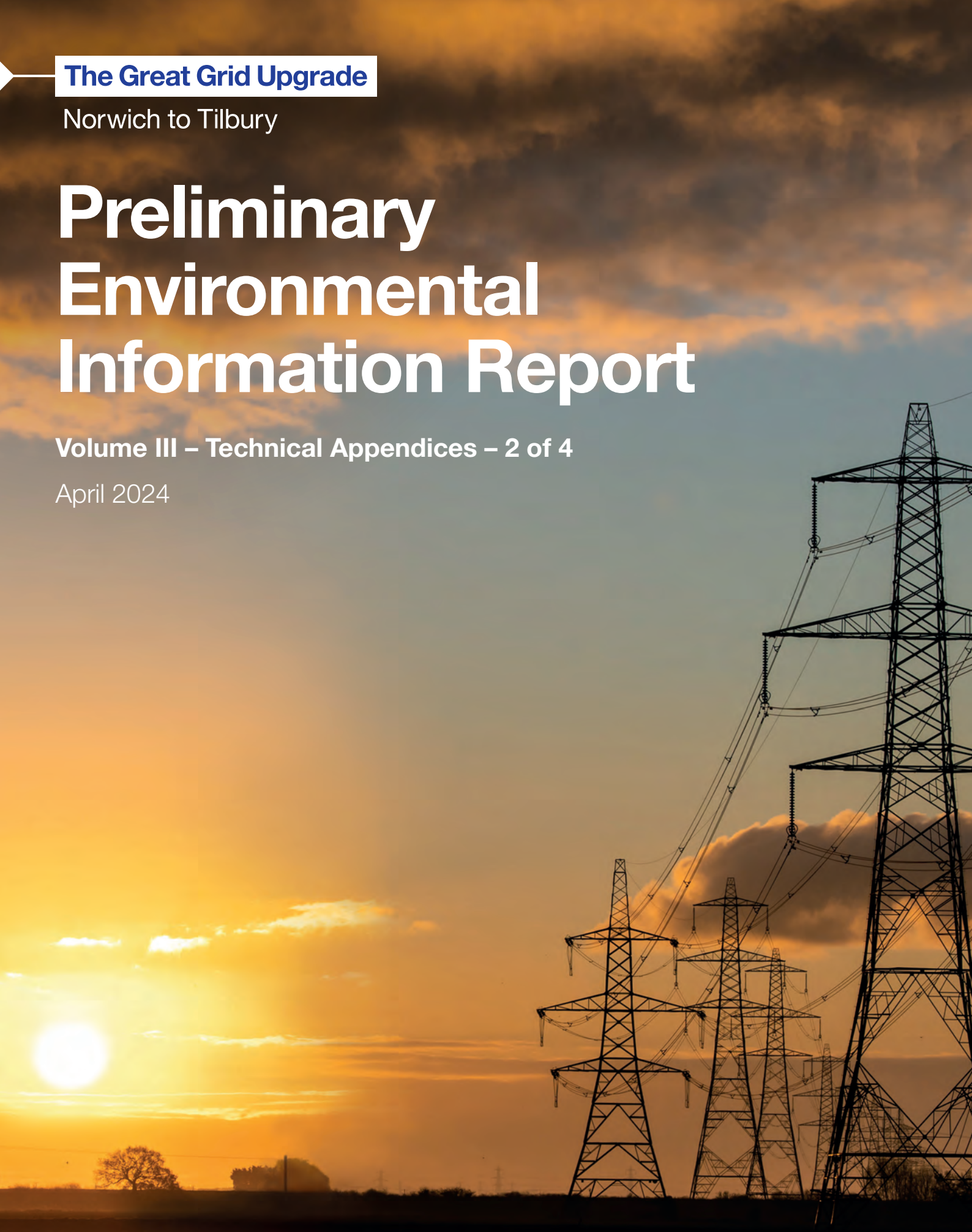
The Great Grid Upgrade

Norwich to Tilbury

Preliminary Environmental Information Report

Volume III – Technical Appendices – 2 of 4

April 2024



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The Great Grid Upgrade

Norwich to Tilbury

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Appendix 8.5: Wintering/Passage Bird Report

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1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of the National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council (including part of Chelmsford City Council)
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description in Volume I.

1.2 Ecological Background

General

1.2.1 The initial ecological background and scope to establish the wintering bird baseline was set out in the Environmental Impact Assessment (EIA) Scoping Report (National Grid, 2022). It was anticipated that a range of habitats within the land required for the construction of the Project would provide suitable habitat to support wintering birds (particularly farmland species). The general approach to wintering farmland birds is to ensure that the Project results in an increase in area of better-quality habitat than that affected by the Project and ensure that these habitats are well connected to the wider landscape. This would be achieved by avoiding permanent effects to habitats of perceived value, reinstating habitats affected in areas of temporary habitat loss to equal or better condition than existing (where this can be agreed with landowners) and

improving the quality and availability of ecological networks across the Scoping Report Corridor as part of the Biodiversity Net Gain strategy. It was therefore agreed that wintering bird surveys for farmland birds, are not required as they are not at risk of collision and significant disturbance can be mitigated for through habitat provision.

1.2.2 The key impact pathways perceived were the following:

- The potential for bird collision with new overhead lines and risk of mortality through electrocution (operational phase)
- The potential for disturbance of birds associated with Special Protection Areas (SPA) and Ramsar sites using functionally linked land[1] (FLL) during the construction phase

1.2.3 Given the above, this report provides baseline information in support of both Environmental Impact Assessment (EIA) and the Habitats Regulations Assessment (HRA).

Consultation

Environmental Impact Assessment

1.2.4 To monitor collision risk, it was agreed with Natural England (September 2022) that surveys would be located within the initial Scoping Report Corridor[2], along pre-identified green corridors that contained either a network of waterways, a main river, or large waterbodies. Vantage point surveys would be undertaken to target birds known to be of high risk of collision (see section 3.1.6). Fourteen locations were identified, mapped, and agreed as survey locations (see Figure A8.5.**1**: Full Route Overview in Annex A).

Habitats Regulations Assessment

1.2.5 To establish a baseline to inform HRA Screening, it was agreed with Natural England that surveys should focus on identifying potential FLL associated with two National Site Network (NSN) and Ramsar Sites[3]:

- The Stour and Orwell Estuaries (SPA and Ramsar)
- Thames Estuary and Marshes (SPA and Ramsar)

1.2.6 Through consultation with Natural England the following criteria, as outlined in Section 8.4 of Chapter 8: Ecology and Biodiversity in Volume I, were agreed upon to determine an appropriate survey area for baseline data collection. Area within the Scoping Report Corridor that met at least one of the below criteria were subjected to wintering / passage bird survey work:

[1] A term used to describe areas of land or sea occurring outside a designated site which is critical to, or necessary for the ecological or behavioural functions in a relevant season of a qualifying feature for which a Special Area of Conservation (SAC) / Special Protection Area (SPA) / Ramsar site has been designated (Bowland Ecology, 2021).

[2] Following the selection of the Strategic Proposal, the routeing and siting stage was undertaken, this resulted in a preferred corridor as reported in the Corridor and Preliminary Routeing and Siting Study (CPRSS) being identified. The preferred corridor in the CPRSS, was consulted on at non-statutory consultation in 2022 and referred to within the EIA Scoping Report as the 'Scoping Report Corridor'.

[3] The National Sites Network (NSN) replaces the European Natura 2000 sites network of sites of international importance, while Ramsar sites are internationally important wetlands designated under the Ramsar Convention and receive the same protection under UK policy as NSN sites.

- Suitable habitat to support wintering / passage plovers within any of the Impact Risk Zones (IRZs) (up to 5 km) associated within the Stour and Orwell Estuaries SPA / Ramsar. Habitat would typically include large open arable fields supporting winter cereals, base till, and certain grasslands. Small, enclosed fields or urban areas are not suitable and excluded
- Suitable habitat within 500 m of the River Stour
- Suitable habitat within all IRZs for the Thames Estuary and Marshes SPA / Ramsar

1.2.7 In line with the above, five locations (previously six, with one discounted following a design change) were identified, mapped, and agreed as survey locations (see Figure A8.5.**1**: Full Route Overview in Annex A). Surveys would comprise a mix of transects and vantage points.

1.2.8 In 2023, additional locations at the southern section of the route (Tilbury) were included for survey (2023/24 season) following consultation with Natural England. The new areas were included based on a design change, which incorporates the above criteria as well as considering the FLL area, mapped as part of the Lower Thames Crossing project. The areas included are identified on Figure A8.5.**1**: Full Route Overview in Annex A.

1.3 Brief and Objectives

1.3.1 The brief was to establish a baseline for wintering / passage birds to inform environmental impact assessment and HRA Screening. The objectives were to:

- Complete a desk study for wintering / passage birds, review existing data available online or provided through local data sources
- Complete a suite of wintering / passage bird surveys (both transects and vantage points) consisting of Vantage Point and Transect Surveys

1.3.2 The results of the wintering / passage bird surveys have been included within this report, with the survey findings to be ultimately used to inform the environmental impact assessment, HRA screening and any subsequent mitigation required for the Project. Following the completion of the baseline (anticipated in March 2024) the results and assessment will be provided within the Ecology and Biodiversity Chapter of the Environmental Statement (ES).

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided in Table A8.5.1.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.5.1) has been considered with regard to the methodology included within this report.

Table A8.5.1 - Legal Compliance

Legislation	Details
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1971)	An international treaty created to ensure the conservation and sustainable management of wetlands, through the designation of Ramsar sites and international cooperation between contracting parties such as the UK government. The Contracting Party responsible for the site must ensure the protection of wintering bird populations, implementing appropriate measures, such as controlling invasive species and maintain suitable water levels.
Convention on the Conservation of European Wildlife and Natural Habitats (1979)	The Bern Convention also referred to as the Conservation of European Wildlife and Natural Habitats, outlines the framework for the conservation for a wide range of species and their habitats. The convention encourages its member states to implement strategies for the protection and management of species and establish ecological networks for migration. For the protection of wintering birds, the UK is responsible under the Berns Convention for the conservation of important habitats such as wetlands and coastal areas and designating protection areas.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter by making it an offence to kill, injure, take, damage, destroy, sell, or possess them (with exceptions). Under the Wildlife and Countryside Act 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young during the breeding season.
The Natural Environment and Rural Communities	The NERC Act 2006 places a duty upon public bodies to maintain Section 41 (s41) lists of flora, fauna, and habitats (previously UK Biodiversity Action Plan (BAP) habitats and species) and to consider these ecological features as a material consideration in planning. It also requires decision-

(NERC) Act 2006 (HMSO, 2006)	makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions.
Directive 2009/147/EC of The European Parliament and of the council of 30 November 2009 on the conservation of wild birds (Directive 2009/147/EC)	The Bird Directive establishes a legal framework across Europe, enforcing the establishment of SPAs in member states of the European Union, to protect bird species. The directive prohibits activities such as deliberate killing, capture, and disturbance of bird species during their breeding, rearing, and migration periods.
Conservation of Habitats and Species Regulations 2017 (as amended) ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for either habitats or species (Special Areas if Conservation (SACs) and Special Protection Areas (SPAs)) and to provide protection for these sites through designation, planning, and other controls. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities (Natural England in England). Licenses may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the species concerned.
The Environment Act 2021 (HMSO, 2021a)	In line with the 25 Year Plan for the Environment (HM Government, 2018), new development should identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Act 2021 introduces a mandatory requirement for 10% biodiversity net gain for new developments to ensure that they enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, but there are options to deliver these gains offsite and this would be demonstrated via Statutory Biodiversity Metric calculation tool.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides further details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Desk Study

3.1.1 A desk study was completed in September 2023 and subsequently updated in January 2024 following a design change, using desk-based data obtained from the previous 10 years (2013-2023). The data was obtained from the following sources:

- British Trust for Ornithology (BTO) – Wetland and Estuaries Bird Survey (WeBS)
- Royal Society for the Protection of Birds (RSPB)
- Essex Field Club
- Norfolk Biodiversity Information Centre
- Suffolk Biodiversity Information Service

3.1.2 Freely downloadable datasets (available from Multi Agency Geographic Information for the Countryside (MAGIC), Department for Environment, Food and Rural Affairs) and aerial imagery were consulted for information regarding designated sites, qualifying features of the NSN and Ramsar sites and general habitat assessment.

Study Area

3.1.3 The following study areas were used to inform the methodology and establish the baseline as part of the wintering / passage bird desk study, as shown on Figure A8.5.2: International and National Designated Sites of Ornithological Importance in Annex A:

- Individual records of wintering / passage bird species and non-statutory sites of ornithological interest – 2 km from the draft Order Limits
- Statutory designated sites of ornithological interest for wintering / passage birds – 2 km from the draft Order Limits
- NSN and Ramsar Sites of ornithological importance – 20 km from the draft Order Limits

Qualifying Avian Features to Inform HRA Screening

3.1.4 To inform the field survey methodology to ensure there is sufficient baseline information for HRA screening, specific bird species were targeted (as listed in Table A8.5.22). Surveys comprise vantage point and transect surveys to identify potential habitat that could be considered FLL (this includes areas where there is a risk of collision with new overhead lines and risk of mortality through electrocution). The species are qualifying features and species listed as contributing to qualifying waterbird assemblages of the following four NSN / Ramsar sites (unless otherwise stated, these refer to wintering and/ or passage populations):

- Stour and Orwell Estuaries SPA
- Stour and Orwell Estuaries Ramsar
- Thames Estuary and Marshes SPA

- Thames Estuary and Marshes Ramsar

Table A8.5.2 - Qualifying features of the Stour and Orwell Estuaries and Thames Estuary and Marshes SPA and Ramsar Sites

Qualifying Feature	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar	Thames Estuary and Marshes SPA	Thames Estuary and Marshes Ramsar
Qualifying features				
Dark-bellied brent goose	Qualifying	Qualifying		
Dunlin	Qualifying	Qualifying	Qualifying	Qualifying
Grey plover	Qualifying	Qualifying	Qualifying	Qualifying
Hen harrier			Qualifying	
Knot	Qualifying	Qualifying	Qualifying	Qualifying
Pintail	Qualifying	Qualifying		
Redshank	Qualifying	Qualifying	Qualifying	Qualifying
Ringed plover	Listed	Listed	Qualifying	Qualifying
Avocet	Breeding only	Listed	Breeding only, listed in wintering assemblage	Listed
Other species listed in citation contributing to qualifying waterbird assemblage				
Cormorant		Listed		
Curlew		Listed		
Gadwall	Listed			Listed
Golden plover	Listed			
Goldeneye	Listed			
Great crested grebe		Listed		
Greenshank				Listed
Lapwing	Listed			
Little egret				Listed
Little grebe				Listed

Qualifying Feature	Stour and Orwell Estuaries SPA	Stour and Orwell Estuaries Ramsar	Thames Estuary and Marshes SPA	Thames Estuary and Marshes Ramsar
Mute swan	Listed			
Ruff				Listed
Scaup	Listed			
Shelduck	Listed	Listed		Listed
Shoveler				Listed
Spotted redshank				Listed
Teal				
Turnstone	Listed	Listed		
Water rail				Listed
Wigeon	Listed			

3.1.5 These species will be referred to as the qualifying features of NSN/Ramsar sites throughout this report.

Collision Risk Species to Inform Environmental Impact Assessment

3.1.6 To inform the field survey methodology and ensure there is sufficient baseline information for an environmental impact assessment, the species / family groups listed below were targeted. This suite of species/groups was determined based on the list of potentially sensitive species adopted by the Bern Convention Standing Committee (Bern Convention, 2004). These species/groups were considered of risk of collision with new overhead lines and risk of mortality through electrocution.

- Divers and grebes
- Petrels and shearwaters
- Gannets
- Cormorants
- Bitterns and herons
- Storks
- Ducks, geese, swans, and mergansers
- Raptors
- Partridges, quail, and grouse
- Rails, crakes, and coots

- Cranes
- Waders
- Skuas and gulls
- Terns
- Pigeons and doves
- Cuckoo
- Owls
- Starling

3.1.7 It is acknowledged that there is overlap between some of the birds listed above, and the qualifying features of NSN / Ramsar sites targeted as part of the HRA.

3.1.8 These species will be referred to as Collision Risk Species throughout this report.

3.2 Survey Methodology

Survey Area

3.2.1 The survey locations agreed with Natural England (September 2022) are outlined in **Error! Reference source not found.**3 and shown on Figure A8.5.**1**: Full Route Overview in Annex A.

3.2.2 The physical survey locations were determined to provide maximum visibility of airspace aligning with potential collision risk and potential FLL as well as ease of access along Permissive Rights of Way. The locations were ground-truthed prior to the commencement of surveys.

Table A8.5.3 - Wintering / passage bird survey locations (2022/23 season)

Site Number	Survey Methodology	Location	Relevant Assessment
1	Vantage Point	Toprow & Flordon	Environmental Impact Assessment
2	Vantage Point	Bunwell Fen to Carleton Fen	
3	Vantage Point	River Waveney-Little Ouse Corridor	
4	Vantage Point	River adj. Wickham Road	
5	Vantage Point	River Gipping	
6	Vantage Point	A1071 to Pigeon's Lane	
7	Transect	Land North of B1068	Habitats Regulations Assessment
8	Transect	Land North of River Stour	
9	Transect	River Stour	
10	Transect	A12 to Burnt Heath	
11	Vantage Point	Ardleigh Reservoir	Habitats Regulations Assessment and

Site Number	Survey Methodology	Location	Relevant Assessment
			Environmental Impact Assessment
12	Vantage Point	River Colne	Environmental Impact Assessment
13	Vantage Point	River Blackwater	
14	Vantage Point	Silver End to Rivenhall	
15	Vantage Point	River Brain	
16	Vantage Point	River Ter	
17	Vantage Point	River Chelmer	
18	Vantage Point	River Wild	

3.2.3 Table A8.5.4 identifies the additional survey locations that were included for the 2023/24 season following consultation with Natural England, also shown on Figure A8.5.**1**: Full Route Overview in Annex A.

Table A8.5.4 – Wintering / passage bird survey locations (2023/24 season).

Site Number	Survey Methodology	Relevant Assessment
Tilbury - 1	Vantage Point	Habitats Regulations Assessment
Tilbury - 2		
Tilbury - 3		
Tilbury - 4		
Tilbury - 5		
Tilbury – 6a (high tide) Tilbury – 6b (low tide)		

Vantage Point Surveys

3.2.4 The primary purpose of vantage point (VP) surveys is to collate data to inform an assessment of the potential collision risk of birds with proposed structures such as pylons and associated overhead lines. The surveys aimed to record levels of activity of bird species within the airspace for proposed overhead line infrastructure that presents a possible collision hazard. In addition, these surveys provide information on the use of land within the draft Order Limits that could provide important resources for wintering birds, acting as FLL in relation to designated sites, which could be subject to loss or disturbance because of the Project. This also helps to inform likely movement corridors for birds that could interact with the proposed overhead line infrastructure.

3.2.5 Methodologies for these surveys were based on NatureScot (Scottish Natural Heritage) guidance[4] on survey methods to inform onshore windfarm development assessments, which has been adapted to be appropriate to overhead lines. This method employs VP watches as a means of quantifying flight activity of bird species of conservation importance that takes place within the collision hazard envelope[5] (the survey area extending to at least 500 m from the boundary of any potential collision risks), to enable an estimation of potential collision risk. Recording bird flight activity at a range of height bands (set distances from ground level) also allows assessment later should modifications to the design be required. This allows for a pre-development assessment of the likely collision impacts on local and national populations.

3.2.6 Activity patterns of birds within the survey area may also inform assessment of the potential consequences of displacement and habitat loss or fragmentation because of the Project. The survey area was chosen to ensure that occasional movements of birds into the draft Order Limits in these locations were also identified.

3.2.7 The purpose of vantage point watches was to collect data that will enable estimates to be made of:

- The time spent flying over the survey area
- The relative use of different parts of the survey area
- The proportion of flying time spent within the upper and lower height limits as determined by the designs provided thus far, adopting a precautionary approach by including a bandwidth that was higher than the proposed height of the pylons

3.2.8 VP survey visits were carried out at 14 locations between September 2022 and March 2023 and 6 locations between October 2023 and March 2024 (see Table A8.5.4 and Figure A8.5.1: Full Route Overview in Annex A). These surveys followed the methods outlined below:

1. Each VP was subject to two three-hour survey visits per month (only one three-hour survey visit was undertaken in the months of September and March), equalling a total of 36 hours at each location. Surveys at Survey Location 9 (upstream of the Stour Estuary) were arranged on at least four visits to coincide with high tide and on at least four visits to coincide with low tide. The survey dates and times for the 2022/2023 surveys are presented in Annex E
2. Each VP survey was carried out by a pair of competent surveyors, at least one of whom was an experienced field ornithologist to allow for full visibility of the viewshed[6] and recording of simultaneous movements of multiple birds / flocks
3. On each survey visit at each survey location, the VP was in the same place with the same viewshed
4. Birds were recorded within an envelope of at least 200 m from the VP location and up to 500 m where topographical conditions allowed
5. Surveys were alternated between morning and afternoon, starting within one hour after dawn or finishing within one hour before dusk

[4] Scottish Natural Heritage (2017). *Recommended bird survey methods to inform impact assessment of onshore wind farms*, Version 2.

[5] The area in which there is potential for collision with the structure from flying birds.

[6] The term used to define the area visible from a defined vantage point.

6. Surveys proceeded in inclement weather as it is important to record bird activity and behaviour in a range of conditions. However, surveys were avoided where visibility was less than 1 km for prolonged periods (either from mist, precipitation, or low cloud-base), or in high winds (over Beaufort 5) as these conditions are likely to significantly impair the ability to record bird activity and is likely to impede bird activity
7. Weather conditions were recorded at least hourly, or more often if there were significant changes noted. Any disturbance events liable to affect the behaviour of birds within the viewshed, such as farming activities, people walking or low-flying aircraft, were also recorded
8. Collision Risk Species were recorded for the duration of the time they were in flight within view, with time of detection and flight duration recorded. The route of flight was plotted in the field onto 1:25 000 scale Ordnance Survey base maps. Bird flight height was estimated at the point of detection, and then at 15 second intervals, thereafter, using five height categories determined to correlate with the anticipated pylon cable heights (see Table A8.5.4). Height band 4 corresponds to the top of the pylon, with band 5 added as precautionary measure for any larger pylons
9. The number and activity of secondary species (i.e., all species not listed as Collision Risk Species) was recorded in 15-minute periods throughout the vantage point surveys. Perched birds and birds on waterbodies were recorded once only on arrival at the VP. Thereafter only flying birds and newly noticed perching/swimming birds were included in the activity summaries. Observing and recording Collision Risk Species took priority over secondary species activity summaries

Table A8.5.4 - Height bands for records bird species

Heigh band 1	Heigh band 2	Heigh band 3	Heigh band 4	Heigh band 5
<10m	10-25m	25-50m	50-75m	>75m

Transect Surveys

3.2.9 In addition to vantage point surveys, four sites were identified (see Table A8.5.3 and Figure A8.5.**1**: Full Route Overview in Annex A) as potentially suitable as FLL for qualifying features of NSN / Ramsar sites (see species / sites outlined in Table A8.5.2). During winter, some of these qualifying features, such as lapwing and golden plover, tend to roost in large flocks, often in open lowland farmland. Where such flocks occur, they may contribute to qualifying waterbird assemblages for NSN and Ramsar sites. Detectability of these flocks can be limited in VP surveys, so four sites were subject to transect surveys.

3.2.10 The transect surveys followed BTO wintering bird survey methodology, which consists of walking a fixed transect, designed to pass within 50 m of all suitable habitats as far as practical. Recording all activity using standard BTO species and activity codes on an Ordnance Survey base map. These surveys were carried out within the same time parameters as the Vantage Point surveys, including consideration of high and low tides at Survey Location 9 to account for birds moving to and from intertidal foraging and roosting sites. Crop status was also noted to assist in determining patterns of usage of

arable fields. The aim of these surveys was primarily to detect lapwing and golden plover (on request of Natural England due to habitat suitability), along with other qualifying features of the NSN/Ramsar sites.

3.3 Dates of Survey and Personnel

3.3.1 For the 2022 to 2023 details of survey dates, timings, and state of tide (where relevant) are provided in Annex E. Surveyor experience is provided in Table A8.5.5. Details for the 2023 to 2024 surveys will be presented in the ES.

Table A8.5.5 - Surveyor Experience

Surveyor -lead surveyors in bold	**Qualifications**	**CIEEM membership**	**Years' experience (professional ecology)**
[redacted]	BSc	No	3 years
[redacted]	BSc MSc	No	6 years
[redacted]	BSc MSc	Yes	7 years
[redacted]	BSc MRes	Yes	1 years
[redacted]	BSc	Yes	1 years
[redacted]	HND countryside management BSc MSc	No	10 years
[redacted]	MSc BSc	Yes	4 years
[redacted]	BSc MSc	Yes	9 years
[redacted]	BSc	No	9 years
[redacted]	BSc MSc	Yes	10 years
[redacted]	MSc BSc	No	19 years
[redacted]	HND Environmental Landscape Management	No	23 years
[redacted]	BA	Yes	1 years
[redacted]	BSc PhD	Yes	7 years

[redacted]	BSc MSc	Yes	7 years

3.4 Notes and Limitations

Nomenclature

3.4.1 Common names of species recorded follow English naming conventions in the British Ornithological Union British List (10th edition)[7]. Scientific names are listed in Annex C, in line with Natural History Museum Species dictionary[8].

Desk Study

3.4.2 A desk study does not provide a full description of current ecological conditions within the study area. It is important to note that, even where data are held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may simply be under-recorded. Data provided may only be available in a broad scale resolution and cannot be used to define specifical geographical areas of interest. Therefore, professional judgement has been applied when interpreting records. The data coverage was extensive and is therefore not considered to be a limiting factor.

Field Survey

3.4.3 Where visibility was impaired due to precipitation or mist, the surveys were rescheduled to take place as soon as practicably possible, such that there were not significant limitations to the surveys from weather.

3.4.4 Where the viewshed was restricted by woodland it is considered that birds would gain height over the woodland and thus be recorded.

3.4.5 All surveys were completed during the survey period; any surveys rescheduled due to weather restrictions were completed within the planned survey programme described above.

3.4.6 Vantage point locations were chosen on public rights of way where land access was limited so that there were no limitations due to temporary access restrictions and there were no significant limitations due to disturbance.

3.4.7 Individual birds and different bird species differ in their behaviour and detectability, and it is unlikely that registrations were detected for all birds during each survey visit. Nevertheless, it is considered that the data collected are sufficiently robust for evaluating the baseline wintering bird assemblage present.

[7] British Ornithologists' Union. 2022. The British List: A Checklist of Birds of Britain (10th edition). Ibis 164: 860–910.

[8] https://www.nhm.ac.uk/our-science/data/uk-species/index

4. Results

nationalgrid

4. Results

4.1 Overview

4.1.1 The results for the wintering bird surveys that took place in the 2023 and 2024 survey season have not been analysed and so only the data that was collected in the 2022 to 2023 survey season are presented and discussed below.

4.2 Desk Study

Habitat suitable for wintering / passage birds

4.2.1 The draft Order Limits pass predominantly through arable farmland along the length of all the Project sections, with areas of grassland and woodland mainly occurring along river valleys that cross the Project. Larger fields throughout could be suitable to provide some foraging or roosting value for wading birds, such as lapwing, and geese. Field boundaries are generally marked with hedgerows, which are likely to support wintering thrushes and resident farmland birds, as well as breeding farmland species, which are likely to be in denser flocks in the smaller fields.

Section A

4.2.2 Section A is crossed by the River Waveney and tributaries north of Diss, with associated woodlands, grassland, and a lake. The River Tas crosses at VP2, with wetlands at Carlton Rode Fen County Wildlife Site (CWS) and tributary to the north. Other tributaries cross at Tacolneston and at VP1, with the Norfolk Valley Fens SAC at Flordon.

Section B

4.2.3 Section B is crossed by a watercourse Offton in the south of the section, with Middle Wood SSSI adjacent to the route. The River Gipping and a tributary cross the route at Needham Market forming a grassland and woodland corridor, as well as crossing further upstream at Mendelsham. Three tributaries of the River Waveney cross the route, including at VP4, again supporting some woodland. The nature reserve SSSI at Wortham Ling is adjacent to the draft Order Limits near Diss, designated for lowland dry heath and acid grassland.

Section C

4.2.4 Section C included Ardleigh Reservoir and gravel pits and large fields at Ardleigh, which are likely to be of value for a range of waterfowl. Belstead Brook crosses at Burstal, at VP6 west of Ipswich, supporting a mosaic of grassland and woodland habitats, including Sproughton Park CWS. Reservoirs and Highham Meadow CWS mosaic grassland are present at Halton St Mary. The River Stour crosses at Dedham, with grassland and large waterbodies on the route and Wasses Marshes CWS within 200 m to the west. Woodlands to the south of the Stour include several Local Wildlife Sites (LWS).

Section D

4.2.5 Section D is crossed by the Roman River at Marks Tey, with Marks Tey Brickpit LWS (and geological SSSI), comprising woodland grassland mosaic, by the River Colne at Ford Street at VP2, with a corridor of grassland and woodlands including Fiddlers Wood LWS, and at West Bergholt with further grassland and woodland habitats. There are four waterbodies over 1 ha within 200 m of the draft Order Limits in this section.

Section E

4.2.6 Section E is crossed by the River Brain at VP15 at White Notley, with groups of lakes at VP14 at Silver End and the River Blackwater and two reservoirs at VP13 near Coggeshall, with woodlands at Coggeshall Hall Farm LWS. There are a few small woodlands along the route, and a larger woodland area adjacent to the draft Order Limits at Great Leighs at the southern end of the section.

Section F

4.2.7 Sections F is crossed by the River Can at Chelmsford, River Ter at VP16 and River Chelmer at VP17. There is a reservoir c.0.6 km west of the route near Margaretting in the south of the section and two waterbodies over 1 ha within 200 m of the draft Order Limits near Broomfield. The route crosses an old gravel works at Pengymill, west of Chelmsford, consisting of an area of grassland adjacent to scrub and waterbodies There are several small woodlands along the route.

Section G

4.2.8 Section G includes some areas of agricultural grassland, which is generally found in smaller fields. This section is crossed twice by the River Wid at VP18 and at Margaretting. There are no large waterbodies within the draft Order Limits, but there is one reservoir c.3.5 ha adjacent to the north of the section at Margeretting and several smaller waterbodies in the immediate area and a belt of woodlands, including Writtlepark Woods LWS north of Margaretting.

Section H

4.2.9 Section H has no significant river corridors crossing the route. Wetlands and waterbodies associated with Mucking Flats and Marshes are located approximately 1 km to the east of the draft Order Limits in the south of this section. One waterbody of approximately 1 ha is adjacent to draft Order Limits at Linford, along with several small stands of LWS woodland and a golf course. Fields in the south of the section are dominated by existing powerline infrastructure.

National Site Network and Ramsar Sites of ornithological importance

4.2.10 There were 28 sites (either NSN or Ramsar sites of ornithological importance) identified within 20 km of the draft Order Limits (see Table A8.5.6 and Figure A8.5.2: International and National Designated Sites of Ornithological Importance). Four key sites in terms of potential impact pathways were identified as part on an initial scoping exercise. The draft Order Limits also fall within IRZs associated with these sites:

- The Stour and Orwell Estuaries SPA

- The Stour and Orwell Estuaries Ramsar
- Thames Estuary and Marshes SPA
- Thames Estuary and Marshes Ramsar

4.2.11 There is the potential for effects on FLL associated with these sites and it was therefore agreed with Natural England (September 2023) that survey work would be required to determine if FLL is present and if so, how the qualifying features of those sites are using the land. Locations of these sites are presented in Figure **A8.5.2**: International and National Designated Sites of Ornithological Importance in Annex A and details of reasons for designation presented in Table A8.5.5 in Annex B.

Table A8.5.6 - National Site Network and Ramsar Sites of ornithological importance – 20 km from the draft Order Limits

Names of site	Designation	Project Section(s)	Distance from draft Order Limits	Direction from draft Order Limits
Thames Estuary and Marshes	Ramsar Site	Section H	1.66 km	South-east
Thames Estuary and Marshes	SPA	Section H	1.66 km	South-east
Stour and Orwell Estuaries	Ramsar Site	N/A	3.07 km	North
Stour and Orwell Estuaries	SPA	N/A	3.07 km	North
Colne Estuary (Mid-Essex Coast Phase 2)	Ramsar Site	N/A	7.30 km	South
Colne Estuary (Mid-Essex Coast Phase 2)	SPA	N/A	7.30 km	South
Abberton Reservoir	Ramsar Site	N/A	7.59 km	South-east
Abberton Reservoir	SPA	N/A	7.59 km	South-east
Broadland	Ramsar Site	N/A	8.90 km	North-east
Broadland	SPA	N/A	8.90 km	North-east
Breckland	SPA	N/A	10.1 km	West
Blackwater Estuary (Mid-Essex Coast Phase 4)	Ramsar Site	N/A	10.61 km	South
Blackwater Estuary (Mid-Essex Coast Phase 4)	SPA	N/A	10.61 km	South

Names of site	Designation	Project Section(s)	Distance from draft Order Limits	Direction from draft Order Limits
Benfleet and Southend Marshes	Ramsar Site	N/A	11.47 km	East
Benfleet and Southend Marshes	SPA	N/A	11.47 km	East
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3)	Ramsar Site	N/A	11.9 km	East
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3)	SPA	N/A	11.9 km	East
Medway Estuary and Marshes	Ramsar Site	N/A	11.5 km	South-east
Medway Estuary and Marshes	SPA	N/A	11.5 km	South-east
Hamford Water	Ramsar Site	N/A	7.91 km	South-east
Hamford Water	SPA	N/A	7.91 km	South-east
Deben Estuary	Ramsar Site	N/A	14.1 km	East
Deben Estuary	SPA	N/A	14.1 km	East
Dengie (Mid-Essex Coast Phase 1)	Ramsar Site	N/A	17.3 km	South-east
Dengie (Mid-Essex Coast Phase 1)	SPA	N/A	17.3 km	South-east
Outer Thames Estuary	SPA (marine)	N/A	13.8 km	East
Sandlings	SPA	N/A	18.3 km	East
Redgrave & South Lopham Fens	Ramsar Site	N/A	2.81 km	West

Statutory designated sites of ornithological interest

4.2.12 Four statutory designated sites (not NSN/Ramsar sites outlined above) were identified within 2 km of the draft Order Limits these are outlined in Table A8.5.7 and shown in Figure A8.5.2: International and National Designated Sites of Ornithological Importance in Annex A. Reasons for designation are presented in Table A8.5.6 in Annex B.

Table A8.5.7 - Statutory designated sites or ornithological interest – 2 km from the draft Order Limits

Names of site	Designation	Project Section(s)	Distance from draft Order Limits	Direction from draft Order Limits
North Thames Estuary and Marshes	Proposed SSSI – Site is in the process of being assessed to become designated as a SSSI and is not a SSSI at the time of this assessment	Section H	Within draft Order Limits	N/A
Mucking Flats and Marshes	SSSI	Section H	1.66 km	South-east
South Thames Estuary and Marshes	SSSI	Section H	1.80 km	South-east
Stour Estuary	SSSI	N/A	3.47 km	North-east

Non-statutory designated sites of ornithological interest

4.2.13 No non-statutory designated sites of ornithological interest for wintering/passage birds were identified within 2 km of the draft Order Limits.

Individual records of wintering / passage bird species

Overview

4.2.14 Overall, just over 26,000 records of species were returned from the five data sets. These are provided in Annex D: Desk Study Data sets.

Qualifying Features of the Stour and Orwell Estuaries and Thames Estuary and Marshes SPA/Ramsar Sites

4.2.15 A total of 1,061 records of qualifying features and cited species included in qualifying waterbird assemblages associated with either the Stour and Orwell Estuary or Thames Estuary and Marshes SPA/Ramsar sites (as outlined in Table A8.5.2) were returned within 2 km of the draft Order Limits. These are summarised by data set in Table A8.5.8.

Table A8.5.8 - Qualifying features associated with the Stour and Orwell Estuary or Thames Estuary and Marshes SPA/Ramsar

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Qualifying Features				
Avocet	19	582	94	2020
Black-tailed Godwit	25	897	225	2020
Brent Goose	3	25	22	2014
Dunlin	13	260	81	2020
Grey Plover	11	436	75	2020
Hen Harrier	4	22	19	2016
Knot	6	155	38	2020
Pintail	25	75	17	2020
Redshank	38	236	52	2020
Ringed Plover	42	370	71	2020
Other species listed in citation contributing to qualifying waterbird assemblage				
Cormorant	32	429	106	2020
Curlew	22	558	108	2020
Gadwall	23	440	187	2020
Golden Plover	37	7563	2265	2020
Goldeneye	9	104	42	2020
Great Crested Grebe	41	616	93	2021
Greenshank	10	42	17	2020
Lapwing	72	6857	3000	2020
Little Egret	193	598	62	2021
Little Grebe	95	838	235	2020
Mute Swan	132	776	260	2021
Ruff	19	24	4	2020

Scaup	5	5	1	2016
Shelduck	80	500	106	2020
Shoveler	9	92	26	2020
Spotted Redshank	2	2	1	2017
Turnstone	17	156	62	2020
Water Rail	41	64	19	2020
Wigeon	36	1811	1000	2020

4.2.16 The records were also broken down to provide details for each of the Project sections. These are contained in Table A8.5.9.

4.2.17 Nearly all records of qualifying features within 500 m of the draft Order Limits were recorded in route Sections C and H, associated with the Stour and Orwell Estuary and Thames Estuary and potentially with the associated SPA and Ramsar sites. This included 88 black-tailed godwit, 59 redshank, 22 pintail, nine avocet, seven dunlin, six ringed plover, four brent geese, two hen harrier and two grey plovers. None of these species are likely to regularly use habitats within the draft Order Limits as FLL.

4.2.18 Golden plover and lapwing records within 500m of the draft Order Limits were mostly recorded in Sections B and C. Golden plover records equate to an average of 62 and 78 birds per year respectively for these Sections. Peak flocks were 320 birds for Section B and 600 birds for Section C. Lapwing records equate to 40 and 53 birds per year for these Sections. Peak flocks were 330 birds for Section B and 280 birds for Section C. These birds could use arable farmland within the draft Order Limits as FLL for winter roosting and foraging, while lapwing could also breed in these habitats.

4.2.19 Other waterbirds cited as part of the qualifying waterbird assemblage for the NSN/ Ramsar sites recorded within 500 m of the draft Order Limits in Sections C and H are most likely to occur where there are waterbodies present. These include cormorant, gadwall, great crested grebe, little egret, little grebe, mute swan, shelduck, water rail and wigeon.

4.2.20 Heatmapping of Qualifying Features and other cited waterbirds is shown in Figure A8.5.3: NSN/ Ramsar Qualifying Features Data Search Records and Figure A8.5.4: Other NSN/ Ramsar Listed Waterbird Species Data Search Records in Annex A, which show numbers of species (in colour scale from blue – low to yellow – high) and densities of records. Heatmapping of lapwing and golden plover records, which are the species most likely to use habitats within the draft Order limits as functionally linked land, is shown in Figure A8.5.**5**: Lapwing and Golden Plover Data Search Records in Annex A.

4.2.21 These maps show significant clusters of records on the Thames at Tilbury to the east and south of the draft order Limits, but only overlapping slightly with the Project in the extreme south. A second cluster is present in Survey Location 9 on the River Stour. A smaller cluster is present at Ardleigh reservoir.

4.2.22 Lapwing and golden plover records are more broadly scattered along the Project, with higher density locations at Survey Location 5 on the River Gipping corridor, at Survey Location 9 on the River Stour corridor and at Tilbury to the east of the southern end of the Project.

Table A8.5.9 - Number of records of Qualifying Features associated with the Stour and Orwell Estuary and Thames Estuary and Marshes SPA/Ramsar sites recorded within each Project section.

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Qualifying features								
Avocet			2					17
Black-tailed Godwit		1	10					14
Brent Goose			2					1
Dunlin		3	3					7
Grey Plover	1							10
Hen Harrier		1	3					
Knot								6
Pintail		7	9			2		7
Redshank		3	5					34
Ringed Plover		3	5					34
Other species listed in citation contributing to qualifying waterbird assemblage								
Cormorant		11	10	2	1	1		7
Curlew		1	6					15
Gadwall		6	11	2	1			3

Golden Plover	4	24	9					
Goldeneye		2	2					5
Great Crested Grebe	12	11	7		1	2		8
Greenshank	1	3	4					2
Lapwing	2	27	28	3	1	2		9
Little Egret	27	41	28	14	15	20	9	39
Little Grebe		10	19	11	10	4	3	38
Mute Swan	5	24	39	13	14	10	6	21
Ruff		1	9	1	1			7
Scaup								5
Shelduck		3	25	4	3	3		42
Shoveler		3	6					
Spotted Redshank			1					1
Turnstone								17
Water Rail		12	8					21
Wigeon		6	8	1	1	2		18

Collision Risk Species to Inform Environmental Impact Assessment

4.2.23 A total of 5,920 records of birds considered to be at risk of collision with overhead lines were returned within 2 km of the draft Order Limits. These are summarised by data set in Table A8.5.10.

Table A8.5.10 - Birds considered to be at risk of collision with overhead lines

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Arctic Tern	1	6	6	2015
Avocet	19	582	94	2020
Barn Owl	103	219	43	2020
Barnacle Goose	6	7	2	2020
Bar-tailed Godwit	9	251	57	2020
Bewick's Swan	8	408	150	2018
Bittern	4	4	1	2013
Black Kite	1	1	1	2013
Black Tern	4	26	22	2019
Black-headed Gull	104	6084	1250	2021
Black-tailed Godwit	25	897	225	2020
Black-throated Diver	3	3	1	2020
Brent Goose	3	25	22	2014
Buzzard	186	1157	208	2021
Canada Goose	14	353	65	2020
Caspian Gull	1	1	1	2020
Collared Dove	17	869	278	2020
Common Gull	67	4360	1500	2020
Common Sandpiper	16	138	38	2020
Common Scoter	2	45	28	2019
Common Tern	31	229	44	2020
Coot	52	1027	279	2020
Cormorant	32	429	106	2020

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Corncrake	1	1	1	2014
Crane	1	2	2	2020
Curlew	22	558	108	2020
Curlew Sandpiper	3	60	27	2019
Dotterel	1	1	1	2006
Dunlin	13	260	81	2020
Ferruginous Duck	3	3	1	2011
Gadwall	23	440	187	2020
Garganey	3	3	1	2017
Golden Plover	37	7563	2265	2020
Goldeneye	9	104	42	2020
Goosander	11	58	38	2020
Goshawk	1	1	1	2020
Great Black-backed Gull	19	96	31	2020
Great Crested Grebe	41	616	93	2021
Great White Egret	8	8	1	2021
Green Sandpiper	35	401	59	2020
Greenshank	10	42	17	2020
Grey Heron	52	435	197	2020
Grey Plover	11	436	75	2020
Greylag Goose	47	573	70	2021
Hen Harrier	4	22	19	2016
Herring Gull	68	1547	1000	2020
Hobby	57	123	23	2020
Honey-buzzard	10	12	2	2019
Jack Snipe	4	4	1	2020

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Kestrel	134	569	104	2021
Kittiwake	1	21	21	2018
Knot	6	155	38	2020
Lapwing	72	6857	3000	2020
Lesser Black-backed Gull	65	3795	2000	2021
Little Egret	193	598	62	2021
Little Grebe	95	838	235	2020
Little Gull	16	18	2	2020
Little Owl	220	307	36	2021
Little Ringed Plover	29	133	36	2020
Little Stint	10	65	41	2020
Little Tern	11	11	1	2020
Long-eared Owl	11	13	2	2020
Long-tailed Skua	1	1	1	2018
Mallard	145	1311	281	2020
Mandarin Duck	28	39	4	2020
Manx Shearwater	2	2	1	2020
Marsh Harrier	50	428	67	2021
Mediterranean Gull	28	118	28	2020
Merlin	25	44	20	2020
Montagu's Harrier	3	3	1	2015
Moorhen	316	1633	230	2022
Mute Swan	132	776	260	2021
Osprey	23	23	1	2020
Oystercatcher	64	409	51	2020
Peregrine	74	190	29	2021

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Pink-footed Goose	6	45	30	2019
Pintail	25	75	17	2020
Pochard	36	192	97	2020
Razorbill	4	4	1	2020
Red Kite	142	193	27	2021
Red-breasted Merganser	7	7	1	2020
Red-crested Pochard	3	3	1	2019
Red-necked Grebe	2	2	1	2019
Redshank	38	236	52	2020
Red-throated Diver	5	5	1	2020
Ringed Plover	42	370	71	2020
Rock Dove	89	411	150	2020
Roseate Tern	1	1	1	2016
Rough-legged Buzzard	8	8	1	2017
Ruddy Duck	3	4	2	2013
Ruddy Shelduck	3	3	1	2020
Ruff	19	24	4	2020
Sabine's Gull	1	1	1	2014
Sanderling	6	6	1	2020
Sandwich Tern	15	38	24	2018
Scaup	5	5	1	2016
Shag	5	5	1	2018
Shelduck	80	500	106	2020
Short-eared Owl	30	52	23	2020
Shoveler	9	92	26	2020

Species	No of Records	No of Individuals	Max Count	Last Recorded Year
Slavonian Grebe	3	3	1	2018
Smew	2	2	1	2017
Snipe	65	172	21	2020
Snowy Owl	1	1	1	2014
Sparrowhawk	272	773	73	2022
Spoonbill	10	10	1	2020
Spotted Redshank	2	2	1	2017
Starling	614	11796	6000	2022
Stock Dove	111	480	131	2020
Tawny Owl	132	211	55	2021
Teal	91	960	100	2020
Tufted Duck	99	867	221	2020
Turnstone	17	156	62	2020
Turtle Dove	427	506	17	2021
Velvet Scoter	2	2	1	2019
Water Rail	41	64	19	2020
Whimbrel	34	312	95	2020
White Stork	5	5	1	2017
White-fronted Goose	8	360	200	2020
White-tailed Eagle	1	1	1	2020
Whooper Swan	8	11	2	2019
Wigeon	36	1811	1000	2020
Wood Sandpiper	8	11	4	2020
Woodcock	109	152	7	2020
Woodpigeon	246	1637	283	2020
Yellow-legged Gull	36	180	38	2020

4.2.24 The records were also broken down to provide details for each of the Project sections. These are contained in Table A8.5.2.

4.2.25 Species at potential risk of collision, which have been recorded in notable numbers include:

- Barn owl – recorded in all Project Sections, with a total of 71 records, 42 of which were in Section B and 12 in Section C
- Barnacle goose – recorded regularly in low numbers (maximum count of six birds) in Section C
- Black-headed gull – recorded in all Project Sections except Section A, with the highest concentration in Section C (total count 1407 out of 1739 birds across the project and a maximum single count of 1250 birds)
- Common gull – recorded in all Project Sections except Section A, with the highest concentrations in Section C (total count of 400 out of 574 birds across the project and a maximum single count of 200 birds) and Section B (total count of 131 out of 574 birds across the project and a maximum single count of 50 birds)
- Common sandpiper – 16 records, of which 12 in Section C
- Common tern – 19 records, of which 13 in Section C
- Goosander – occasional records in Sections C, D, E, F and H, with the most being a total of ten birds in Section C
- Green sandpiper – recorded regularly in Section C in small numbers, with a peak count of 15 birds
- Kestrel – recorded regularly across all Project Sections, except Section A
- Little ringed plover – six records (total count of 14) in Section C and two single records in Section H
- Mallard – a total of 127 birds recorded across Sections C, D, E, F, G and H, with peak counts of nine in Sections C and F
- Marsh harrier – one record an individual bird in Section C and three records in Section H, two of individual birds and one record of eight birds
- Oystercatcher – mostly occasional individuals recorded in Sections A, C, F, G and H, with most records in Section C, including a peak flock of 39
- Peregrine – occasional individuals recorded in all Project Sections
- Red kite – recorded in all route sections in low numbers, with the most recorded in Section C (24 birds), D (14 birds) and F (16 birds)
- Snipe – mostly recorded in Section B (20 birds) and Section C (52 birds)
- Sparrowhawk – occurs regularly in low numbers in all project sections
- Starling – recorded in all Project Sections except Section A, with peak flocks of 150 in Section C and 120 in Section B
- Teal – recorded in low numbers in most Project Sections, with most occurring in Sections C (171 birds)
- Turtle dove – recorded in all Project Sections except Section G, with the most in Section C (36 records), Section B (35 records) and Section D (26 records)

- White-fronted goose – occasional individuals in Section C and one record of a flock of 28

4.2.26 Heatmapping of desk study records of collision risk species is presented in Figure A8.5.**6**. A colour scale from blue – low to yellow – high indicates the number of species and the density of records is also shown. This shows an even distribution of records along most of the route with several hotspots. The highest density locations are at the Thames Estuary, the Stour Estuary and Ardleigh Reservoir (Survey Locations 8, 9 and 11). Other clusters are present at the River Tas (at the northern end of the Project), east of the draft Order Limits at Winfarthing, the River Gipping (Survey Location 5), west of Survey Location 6 at Chattisham, between Survey Location 13 and 14 (south-east of the Project on the River Blackwater at Kelvedon and north-west of the Project at Heron Farm Gravel Pits and at Dunton Plotlands Nature Reserve (west of Basildon).

Table A8.5.21 - Records of birds considered to be at risk of collision with overhead lines recorded within each Project section.

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Arctic Tern		1						
Avocet			2					17
Barn Owl	21	57	21	1				3
Barnacle Goose		1	5					
Bar-tailed Godwit			1					8
Bewick's Swan	3	4	1					
Bittern		3	1					
Black Kite		1						
Black Tern		1	2					1
Black-headed Gull	2	50	32	4	3	1		12
Black-tailed Godwit		1	10					14
Black-throated Diver		3						
Brent Goose			2					1
Buzzard	19	76	62	8	4	4		13
Canada Goose	1		2		1	3		7
Caspian Gull		1						

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Collared Dove				3	3	4		7
Common Gull	3	31	26	1	1	1		4
Common Sandpiper		4	7	1				4
Common Scoter								2
Common Tern		13	11					7
Coot	10	11	17	2	1	1		10
Cormorant		11	10	2	1	1		7
Corncrake		1						
Crane			1					
Curlew		1	6					15
Curlew Sandpiper								3
Dotterel	1							
Dunlin		3	3					7
Ferruginous Duck		3						
Gadwall		6	11	2	1			3
Garganey			3					
Golden Plover	4	24	9					
Goldeneye		2	2					5

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Goosander		5	6					
Goshawk		1						
Great Black-backed Gull		8	8		1			2
Great Crested Grebe	12	11	7		1	2		8
Great White Egret	1	4	3					
Green Sandpiper	1	11	14					9
Greenshank	1	3	4					2
Grey Heron		25	20	2	1	2		2
Grey Plover	1							10
Greylag Goose		21	17	2	1			6
Hen Harrier		1	3					
Herring Gull	3	37	19	1	2	1		5
Hobby	13	20	21		1			2
Honey-buzzard	2	5	3					
Jack Snipe		3	1					
Kestrel		68	48	5	2	3		8

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Kittiwake								1
Knot								6
Lapwing	2	27	28	3	1	2		9
Lesser Black-backed Gull	5	28	24		1	3		4
Little Egret	27	41	28	14	15	20	9	39
Little Grebe		10	19	11	10	4	3	38
Little Gull			3	1				12
Little Owl	53	61	36	24	7	17	11	11
Little Ringed Plover		4	9		4	2		10
Little Stint			1					9
Little Tern								11
Long-eared Owl		1	2		1			7
Long-tailed Skua								1
Mallard	2		12	13	23	25	19	51
Mandarin Duck		8	5	3	4	4	3	1
Manx Shearwater								2
Marsh Harrier	5	3	7	1				34

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Mediterranean Gull	2	4	3			2		17
Merlin	2	2	4	4	1	3	1	8
Montagu's Harrier	1		1	1				
Moorhen	25	130	57	13	21	14	12	44
Mute Swan	5	24	39	13	14	10	6	21
Osprey	3	5	6		1	3	2	3
Oystercatcher	5	4	16		2	2	1	34
Peregrine	9	11	13	6	5	4	4	22
Pink-footed Goose	1		5					
Pintail		7	9			2		7
Pochard		3	6	2	1		1	23
Razorbill								4
Red Kite	12	19	33	17	19	21	8	13
Red-breasted Merganser					1			6
Red-crested Pochard			1	1	1			
Red-necked Grebe			1					1

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Redshank		4	11					23
Red-throated Diver								5
Ringed Plover		3	5					34
Rock Dove		32	21	3	3	5	8	17
Roseate Tern								1
Rough-legged Buzzard	2			2			1	3
Ruddy Duck		1						2
Ruddy Shelduck			2		1			
Ruff		1	9	1	1			7
Sabine's Gull								1
Sanderling								6
Sandwich Tern					1			14
Scaup								5
Shag	1	3	1					
Shelduck		3	25	4	3	3		42
Short-eared Owl	2	1	6		1	1		19
Shoveler		3	6					

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
Slavonian Grebe								3
Smew		1	1					
Snipe	1	27	15	3	1	1	5	12
Snowy Owl								1
Sparrowhawk	2	84	48	23	11	37	21	46
Spoonbill					1			9
Spotted Redshank			1					1
Starling	5	288	143	38	21	39	26	54
Stock Dove	8		16	13	13	22	12	27
Tawny Owl	31	42	20	5	9	13	7	5
Teal		8	19	5	4	3	1	51
Tufted Duck		14	19	6	10	5	3	42
Turnstone								17
Turtle Dove	69	140	97	54	38	21		8
Velvet Scoter								2
Water Rail		12	8					21
Whimbrel	1	2	3		2			26
White Stork		5						

Species	Section A – South Norfolk District	Section B – Mid Suffolk District	Section C – Babergh and Colchester and Tendring Districts	Section D – Colchester District	Section E – Braintree District	Section F – Chelmsford District	Section G – Basildon and Brentwood District	Section H – Thurrock
White-fronted Goose			7			1		
White-tailed Eagle		1						
Whooper Swan		2	4					2
Wigeon		6	8	1	1	2		18
Wood Sandpiper			5		1			2
Woodcock	23	34	22	8	2	9		11
Woodpigeon			20	40	41	57	31	57
Yellow-legged Gull		1	3	1				31

4.3 Survey Results

Description of Survey Locations

4.3.1 Habitats within the Vantage Point and Transect Survey Locations are described in Table A8.5.32.

Table A8.5.32 - Description of Survey Locations

Survey Location	Survey Type	Description
1	Vantage Point	A range of habitats, dominated by arable fields, grassland fields, and mixed woodland parcels. Most of the arable fields had been previously cut and were low stubble during the surveys and the grass in the grassland fields had been kept low by livestock. A stream was present in a ditch in the centre of the site. Standard farming activities such as ploughing of fields were the only landscape changes recorded throughout the survey period.
2	Vantage Point	A series of arable and pastoral fields surrounded by native hedgerows. The arable fields had been previously cut and were low stubble at the time of survey, and the pastoral grassland fields had been kept short by a mixture of livestock. The River Tas was present in the centre of the site, surrounded by scrub and trees. Small parcels of mixed woodland were also present in the east and west of the site. No major landscape changes occurred during the survey period other than standard farming activities.
3	Vantage Point	The survey area comprised a mixture of arable fields and mixed woodland parcels, with the River Waveney present in the centre of the site. Native hedgerows were present surrounding the arable fields. The arable fields had been previously cut and were low stubble at the time of survey. The wider area of the site was dominated by arable fields and woodland. No major landscape changes occurred during the survey period other than standard farming activities.
4	Vantage Point	A series of arable fields and plantation woodland to the north and south of Wickham Road. Hedgerows were present surrounding the arable fields and bordering Wickham Road. The arable fields had been cut and were low stubble at the time of the surveys. Standard farming activities such as ploughing of fields were the only landscape changes recorded throughout the survey period.
5	Vantage Point	A series of arable and pastoral grassland fields, with a parcel of plantation woodland in the east. The River Gipping and a railway line were present bisecting the centre of the site. The arable fields had been cut and were low stubble at the time of survey, and the grass in the grassland fields had been kept short by a mixture of livestock. No major landscape changes occurred during the survey period other than standard farming activities.

Survey Location	Survey Type	Description
6	Vantage Point	The survey area was dominated by arable fields and a series of three lakes which were in use as a fishery. Small parcels of mixed woodland and scrub were also present throughout the site. Thorpes Hill Road was present in the west of the site. The arable fields had been cut and were low stubble at the time of survey. No major landscape changes occurred during the survey period other than standard farming activities.
7	Transect	Transect Site 7 comprised three large arable fields which had been harvested and were low stubble at the time of survey, with ploughing occurring during the survey period. Some strips with cover crop to provide cover for game birds was evident. Native hedgerows were present around the boundary of the survey area, which had been subject to regular pruning. The wider area was dominated by arable fields, with small strips of woodland present immediately to the north and south of the survey area.
8	Transect	Transect Site 8 comprised a series of arable fields which were a mix of low stubble and leafy crop at the start of the surveys, with some rotational changes throughout the survey period. A road passed through the middle of the site. Native hedgerows were present around the boundary of the survey area, with mature trees present within the hedgerows. The wider area was dominated by arable fields with small areas of woodland present to the north.
9	Vantage Point and Transect	The survey area comprised a wide range of habitats. The centre of the site was dominated by the River Stour which flowed west to east through the centre of the site and was lined by scattered trees and scrub. To the west of the Stour a grassland area and lake were present which was managed as a nature reserve, with smaller areas of woodland and scrub. Arable fields were present in the north and south of the site, with smaller parcels of mixed woodland. The arable fields had been cut and were low stubble at the time of survey. Hedgerows were present along the boundaries of the arable fields, the majority of which were heavily managed. No major landscape changes occurred during the survey period other than standard farming activities.
10	Transect	Transect Site 10 was dominated by arable fields which had been cut and were low stubble at the time of survey. Some areas had been left unmanaged to provide cover for game birds, rotational activities such as ploughing occurred through the survey season. Native hedgerows were present throughout the survey area, around the boundaries of the arable fields. Most of the hedgerows were heavily managed and had been subject to recent pruning. Mature scattered trees were present throughout the hedgerows, along the field boundaries. An area of mixed woodland was present in the south-west of the survey area. A waterbody used for fishing was present in the fields just to the north-west of Ardleigh village. The survey area was bisected by a railway in the east and Dedham Road in the centre of the site. The wider surroundings were dominated by arable fields and small parcels of woodland.

Survey Location	Survey Type	Description
11	Vantage Point	A range of habitats, dominated by arable fields, mixed woodland, and a large lake. The arable fields had been cut and were low stubble at the time of survey. Hedgerows were present along the boundaries of the arable fields, the majority of which were heavily managed. A caravan site was present in the east of the survey area. The wider area of the site was dominated by arable fields, with smaller parcels of woodland and lakes, several of which were in use as fisheries.
12	Vantage Point	A series of arable and pastoral grassland fields, located to the north and south of the River Colne which was present in the centre of the survey area. Most of the arable fields had been cut and were low stubble at the time of survey, the pastoral grassland fields had also been kept low and were disturbed by a mixture of livestock. Hedgerows were present surrounding the fields, and small parcels of mixed woodland were present in the west of the survey area. Mill Road was present in the west of the survey area.
13	Vantage Point	The survey area comprised a wide range of habitats. The centre of the survey area was dominated by the River Blackwater which flowed west to east and was lined by scattered trees and scrub. Arable fields were present throughout the survey area, the majority of which had been previously cut. Small parcels of mixed woodland were present throughout. A small lake was present in the centre of the survey area which was managed as a fishery, and a water treatment site was present in the west. No major landscape changes occurred during the survey period other than standard farming activities.
14	Vantage Point	Small grassland fields dominate the west of the survey area, with arable farmland in the eastern half where the draft Order Limits passes through. There is a band of woodland along the stream and several waterbodies, including four over 0.75 ha.
15	Vantage Point	The corridor of the River Brain through this survey area comprises a belt of woodland along the river, bounded by a mix of relatively small (up to around 10 ha) arable and grassland fields with hedgerow margins and other stands of woodland. Small tributaries drain into the river and a small waterbody (c.1.5ha) is present on the south-western edge of the survey area.
16	Vantage Point	The valley of the River Ter within the survey area is largely dominated by a woodland and grassland mosaic, which forms part of Lowley's Farm Meadows CWS in the north-west of the survey area. Reasonably large fields, over 10 ha, with hedgerow margins, bound the river corridor to the north and south.
17	Vantage Point	The survey area comprised predominantly arable farmland. A belt of scrub and trees was present along the River Chelmer and adjacent to the B1008 to the east. An extended area of woodland, forming Langley's Deer Park, is present at the north-west boundary of the survey area.

Survey Location	Survey Type	Description
18	Vantage Point	Site 18 was located near Mountnessing and comprised a horse pasture field to the east and an arable field to the west in the north of the site. The River Wid runs east-west across the site and is flanked by a small corridor of scrub, trees, and vegetation. The large field to the south of the river was used to grow pumpkins. Small areas of woodland are present on site as well as mature trees. No major landscape changes occurred during the survey period other than standard farming activities.

Vantage Point Surveys

Qualifying Features

4.3.2 Vantage point surveys were carried out to collect data to inform the HRA at two locations: Survey Location 9 and Survey Location 11, both in Section C of the Project. Records of Qualifying Features observed during these vantage point surveys are summarised in Table A8.5.43.

Table A8.5.43 - Records of NSN/ Ramsar Qualifying Features observed during VP surveys

Species	Month	Count	Record Description
VP09	**Nearest SPA/ Ramsar site:** Stour and Orwell Estuaries SPA and Ramsar site, 3.8 km east		
Qualifying features of NSN/ Ramsar sites			
Black-tailed godwit	December	4	Took off from waterbody in north of site, height band 3.
Other species listed in citation contributing to qualifying waterbird assemblage			
Cormorant	October	1	Flying over at 25 – 50m
Lapwing	February	22	Flying over at 25 – 50m
Lapwing	October	3	Flying over at < 10m
Lapwing	December	25	Flying over at < 10m - 50m
Lapwing	January	2	Flying over at > 75m
Lapwing	January	50	Flying over at 25 - 50m
Lapwing	January	24	Flying over at 25 - 50m
Lapwing	January	54	Flying over at < 10m - 50m
Little egret	December	5	Flying over at < 10m
Mute swan	February	6	Flying over at < 10m
Mute swan	October	6	Flying over at < 10m
Mute swan	October	3	Flying over at 10 - 25m

Species	Month	Count	Record Description
Mute swan	October	2	Flying over at < 10m - 50m
Mute swan	October	1	Flying over at 10 - 25m
Mute swan	September	3	Flying over at < 10m
Mute swan	December	3	Flying over at 10 - 25m
Mute swan	November	4	Flying over at < 10m
Mute swan	November	3	Flying over at < 10m
Mute swan	January	2	Flying over at <10 - 75m
Mute swan	January	1	Flying over at < 10m
Shelduck	February	3	Taking off from water, rising to 50 - 75m
Water rail	October	1	In reeds surrounding waterbody in north of site
VP11	**Nearest SPA/ Ramsar site:** Stour and Orwell Estuaries SPA and Ramsar site, 4.3 km northeast		
Qualifying features of NSN/ Ramsar sites			
No qualifying features of NSN/ Ramsar sites recorded			
Other species listed in citation contributing to qualifying waterbird assemblage			
Cormorant	October	1	Flying over at 10 - 25m
Cormorant	November	1	Flying over at 10 - 25m
Cormorant	December	1	Flying over at 10 - 25m
Cormorant	December	1	Flying over at < 10m
Cormorant	December	1	Landing on water
Cormorant	February	1	Flying over at 10 - 25m
Cormorant	February	1	Flying over at 25 - 50m
Cormorant	February	1	Flying over at 10 - 25m

Collision Risk Species

4.3.3 Peak counts for flocks of all Collision Risk Species are presented for each vantage point (VP) in Annex F. The number of months in which flocks (of five or more birds) were recorded, out of the survey period of seven months, is also shown.

4.3.4 Annex G presents a summary of the total time spent by all Collision Risk Species within the potential impact risk zone of the proposed cable array. This is calculated in bird-minutes based on the time spent within each height band multiplied by the number of birds in each flight record, totalled across the 36 hours of surveying.

4.3.5 Peak counts for flocks of all species including secondary species are presented for each VP in Annex H. The number of months in which flocks (of five or more birds) were recorded, out of the survey period of seven months, is also shown.

4.3.6 Most of the Collision Risk Species recorded were gulls, woodpigeon, and starling. Peak counts comprised a mixed flock of 200 predominantly black-headed gull, with common, lesser black-backed and herring gull flying south through centre of the survey area at height band 3 and a flock of 240 common and black-headed gulls feeding on a ploughed field at VP01 in February and a mixed flock of 200 black headed, common, herring and lesser black-backed gulls in VP02 in March which crossed the north-east corner of the survey area flying at height band 4. The highest number of woodpigeons recorded was 250 flying in several directions at height band 2 in February on VP02 and flying north-west from the centre of the site at height band 2 on VP04. The peak count for starling was 200 in VP14 in March, circling round at height band 2 in the south-west corner of the site.

4.3.7 Notable high counts for lapwing comprised 45 at VP16 in January, taking off from the field to the north of the site boundary flying south-west over the site at height band 2 and counts of 50 and 54 at VP09 in January, with both flocks taking off from the fields in the north of the survey area and flying east at height bands 3 and 2 respectively. Lapwing were also recorded in smaller numbers on VPs 1, 2, 3, 5, 6, 12, 17 and 18.

4.3.8 The only golden plover recorded was a flock of 14 flying north-west to south-east over the survey area at height band 3 in VP05 in December.

4.3.9 Less than 10% of the time that Collision Risk Species were present in the impact risk zone was within the 50-75 m bandwidth. Just under 4% of the time was spent in the 75-100 m bandwidth. Most of the flightpaths for the Collision Risk Species were within the 10-25 m and 25-50 m bandwidths.

4.3.10 A total of 86 secondary species were recorded during the survey, mainly consisting of passerines, but also included small (non-flocking) numbers of gull and goose species.

Transect Surveys

4.3.11 A summary of the peak counts for each species along each transect is presented in Annex I, showing Qualifying Features of NSN/ Ramsar sites and other waterfowl (species that could contribute to the qualifying waterbird assemblage. 100% of all suitable habitat within the IRZs (that overlapped with the draft Order Limits) associated with the Stour and Orwell Estuary was surveyed.

4.3.12 During the transects a total of 64 species were recorded. This included both Primary Focal Species and Secondary Species.

4.3.13 Lapwing were recorded on Transect Survey Location 7, 8 and 10. The highest number of lapwings recorded was 60 on Transect 10 in January and 60 on Transect 8 in February. These were mostly present foraging/ loafing within fields or taking off. Only six lapwings were recorded on Transect 7, all but one of which were flying over.

4.3.14 Golden plover was recorded on two occasions, with one flock of 70 taking off at Transect Survey Location 10 in January and just one bird taking off from Transect 7 in December.

4.3.15 Other qualifying features of relevant NSN/Ramsar sites recorded included eight brent geese, four curlew, and two shovelers, all recorded on single occasions, and 45 gadwalls over two occasions at Transect Survey Location 10.

2023/24 Survey Season

4.3.16 The results of the additional survey work undertaken in 2023/24 and subsequent assessments will be included within the Ecology and Biodiversity Chapter of the ES.

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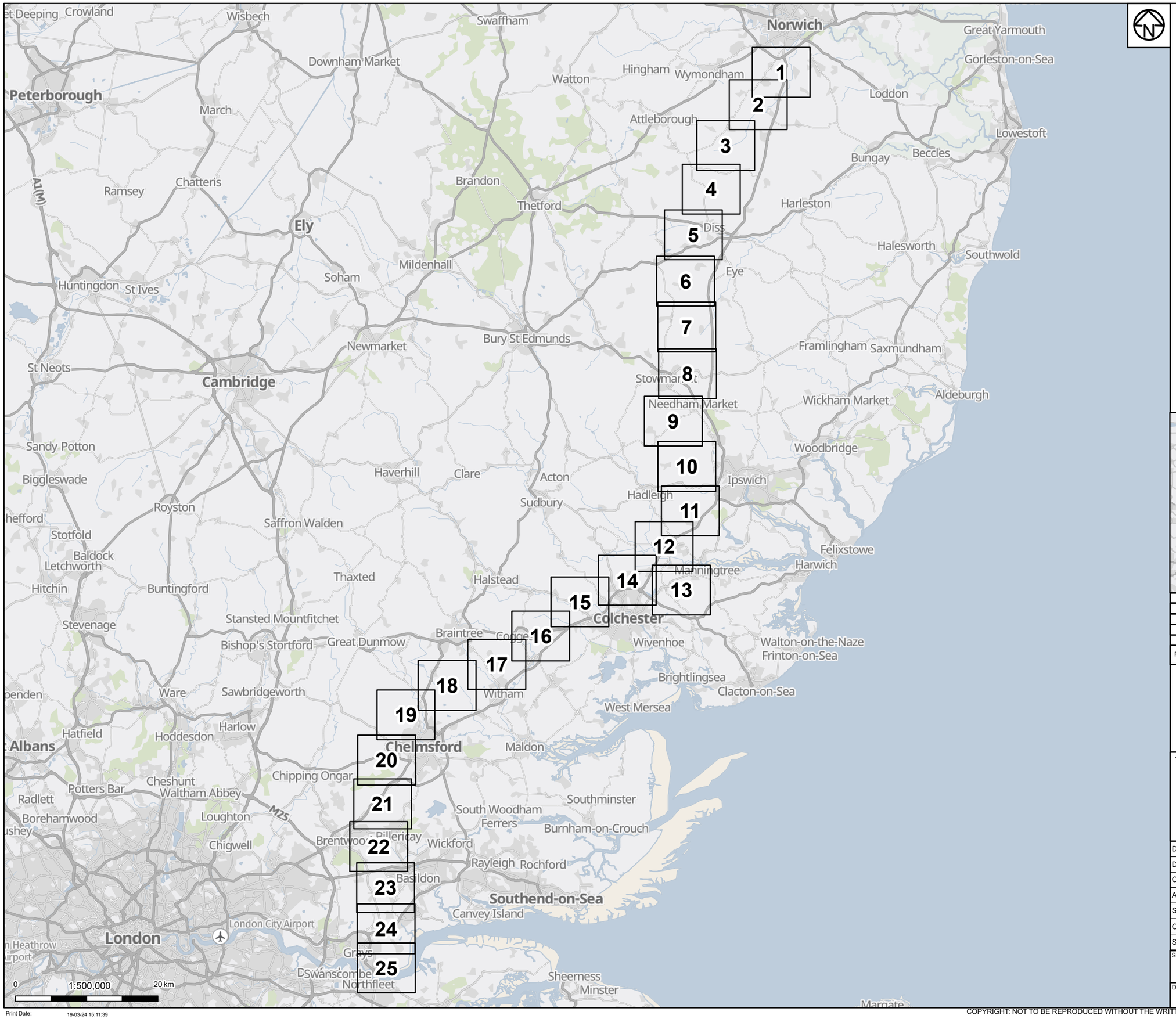
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Annex A: Figures

Figure A8.5.1: Full Route Overview



Pages

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A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Overview

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:500,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151
Revision: A

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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

Page 1 and 2

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Print Date: 19-03-24 15:11:49

- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Existing substation
- Proposed substation extension
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Rev	Date	Description	Drawn	Check	Approv
A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 1 of 25

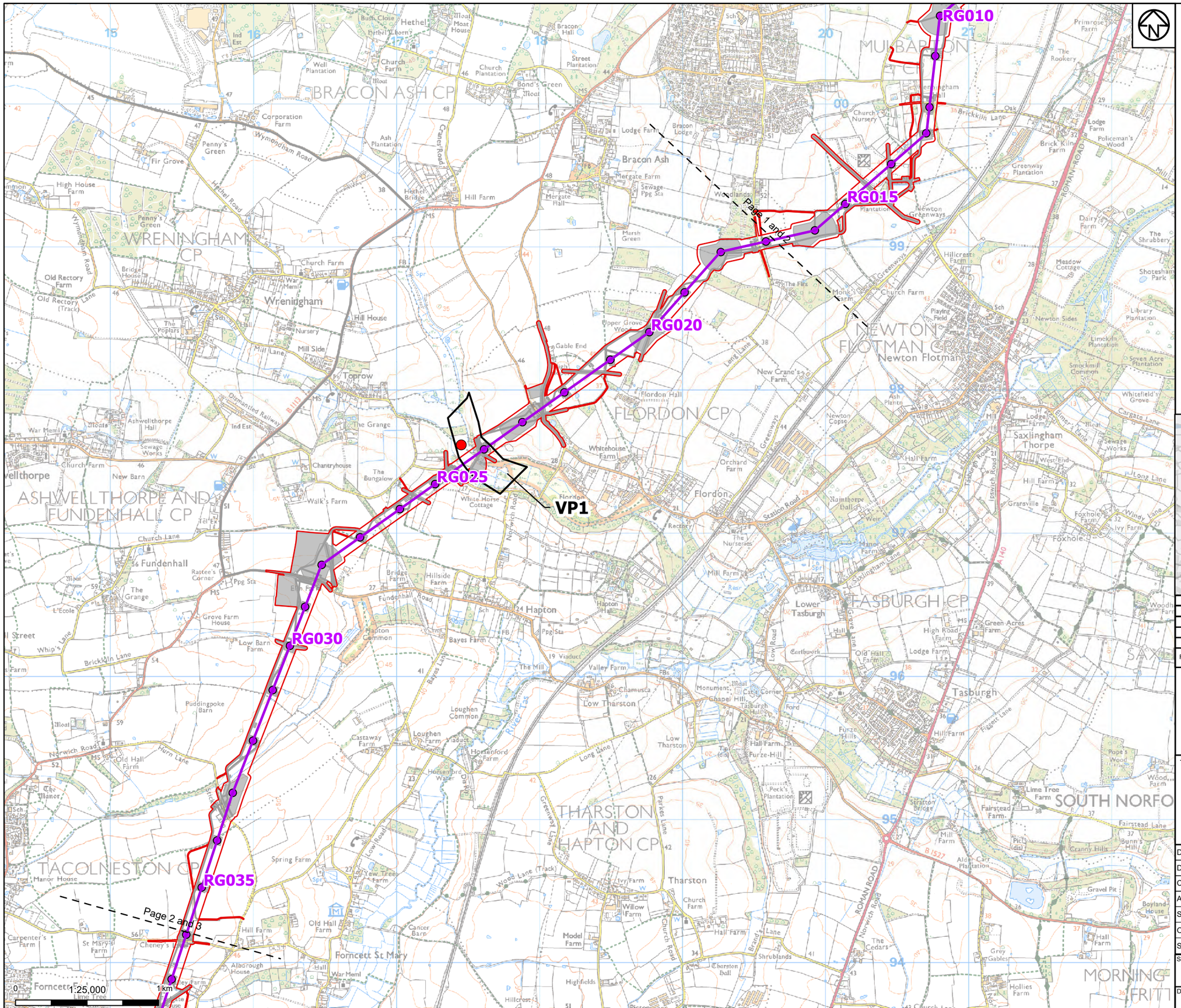
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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 2 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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RG035

RG040

RG045

RG050

RG055

VP2

Page 2 and 3

Page 3 and 4

- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed pylon position
- Other temporary and permanent construction and operational works

Discipline specific constraints

- Surveyor locations
- Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 3 of 25

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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

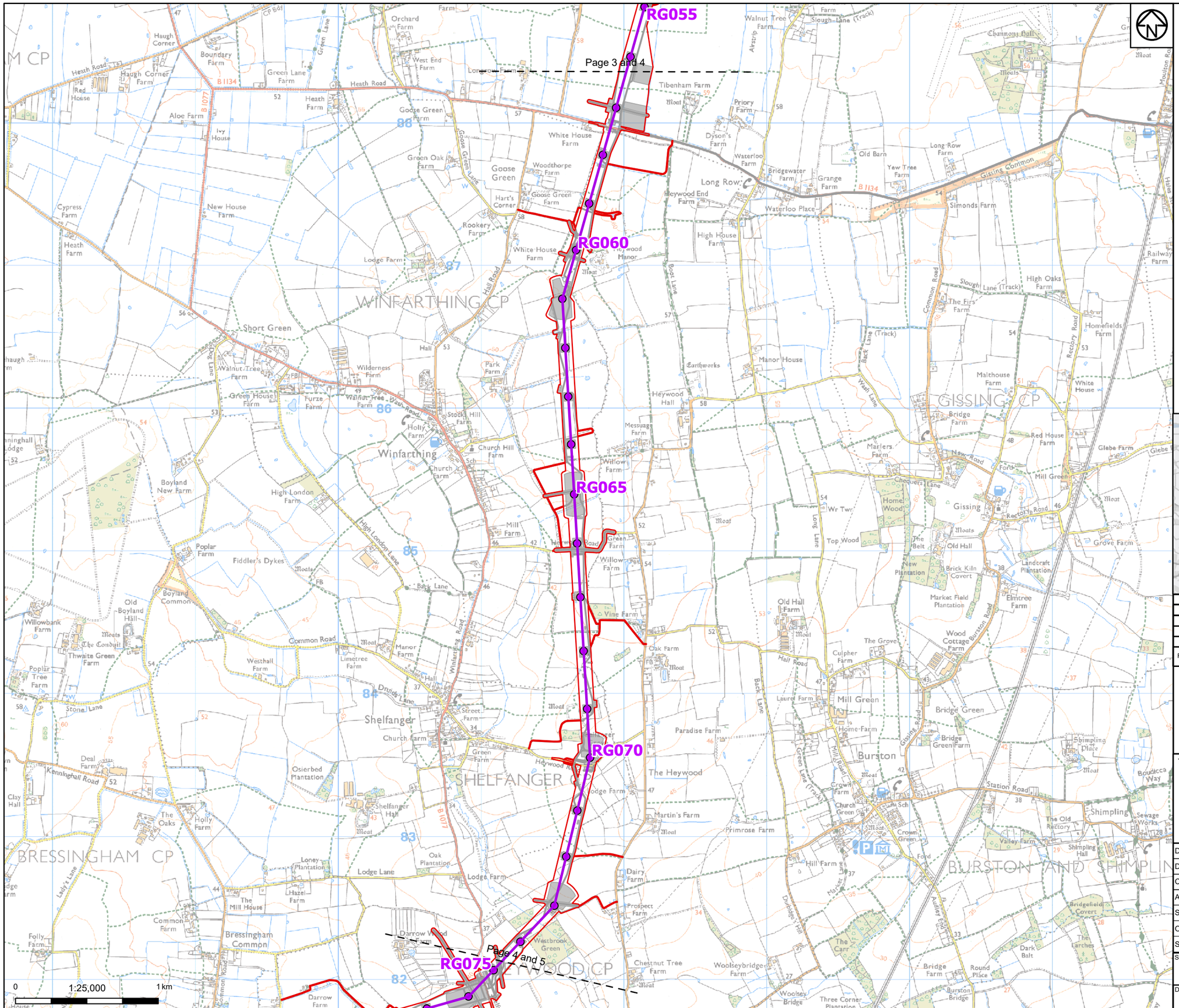
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0 1:25,000 1 km

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RG055
RG060
RG065
RG070
RG075
Page 3 and 4
Page 4 and 5
WINFARTHING CP
GISSING CP
BRESSINGHAM CP
SHELFANGER CP
BURSTON AND SHIMPLING
Winfarthing
Shelfanger
Bressingham
Burston
Gissing
Long Row
Goose Green
Short Green
Bressingham Common
Boyland Common
Mill Green
Bridge Green
Tibenham Farm
White House Farm
Woodthorpe Farm
Goose Green Farm
Green Oak Farm
Rookery Farm
Lodge Farm
Heywood Hall
Manor House
Earthworks
Messuage Farm
Church Hill Farm
Willow Farm
Mill Farm
Vine Farm
Oak Farm
Paradise Farm
The Heywood
Martin's Farm
Primrose Farm
Dairy Farm
Prospect Farm
Chestnut Tree Farm
Woolseybridge Farm
Woolsey Bridge
Three Corner Plantation
Hill Farm
Culpher Farm
Laurel Farm
Home Farm
Burston Farm
Crown Farm
Church Green
Crown Green
Valley Farm
Shimpling Hall
Shimpling Place
Boudicca Way
Station Road
Gissing Road
Mill Road
Green Lane (Track)
Hall Road
Burston Road
Wood Cottage Farm
Market Field Plantation
Elmtree Farm
Brick Kiln Covert
Landcraft Plantation
New Plantation
Old Hall
The Belt
Home Wood
Gissing Farm
Mariers Farm
Bridge Farm
Malthouse Farm
High Oaks Farm
The Firs Farm
Homefields Farm
White House
Red House Farm
Glebe Farm
Grove Farm
Simonds Farm
Long Row Farm
Yew Tree Farm
Old Barn
Grange Farm
Bridgewater Farm
Waterloo Farm
Waterloo Place
Priory Farm
Dyson's Farm
Heywood End Farm
High House Farm
Railway Farm
Common Hall
Walnut Tree Farm
Slough Lane (Track)
Back Lane (Track)
Common Road
Rectory Road
Wash Road
Holly Farm
Stock Hill Farm
Furze Farm
Wilderness Farm
Park Farm
Hall
Boyland New Farm
High London Farm
Poplar Farm
Fiddler's Dykes
Old Boyland Hall
Willowbank Farm
The Conduit
Thwaite Green Farm
Poplar Tree Farm
Stone Lane
Deal Farm
Kenninghall Road
Clay Hall
The Oaks
Holly Farm
Osierbed Plantation
Shelfanger Hall
Lodge Lane
Loney Plantation
Hazel Farm
The Mill House
Common Farm
Folly Farm
Darrow Wood Farm
Darrow Farm
Westbrook Green
Dukes Hill
Aubrey End
The Carr
Bridgefield Covert
Dark Belt
The Larches
Round Place
Burston Bridge
Shimpling Sewage Works
The Old Rectory
Valley Farm
Limetree Farm
Westhall Farm
Manor Farm
Street Farm
Drury Lane
Windmill Road
Boot Lane
Long Lane
Wash Road
Heath Road
Haugh Corner
Haugh Corner Farm
Boundary Farm
Green Lane Farm
Heath Farm
Red House
Aloe Farm
Ivy House
New House Farm
Cypress Farm
Orchard Farm
West End Farm
Longe Farm
Goose Green Lane
Hart's Corner
Lodge Farm
Green Farm
Church Farm
Church Farm
Mill Farm
Green Farm
Willow Farm
Vine Farm
Oak Farm
Limetree Farm
Westhall Farm
Manor Farm
Street Farm
Paradise Farm
Lodge Farm
Martin's Farm
Dairy Farm
Prospect Farm
Chestnut Tree Farm
Woolseybridge Farm

Waveney Valley Overhead Line

RG075

RG080

RG085

RG090

RG095

RG100

VP3

Page 4 and 5

Page 5 and 6

Section A

Section B

0 1:25,000 1 km

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed pylon position
- Other temporary and permanent construction and operational works

Discipline specific constraints

- Surveyor locations
- Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

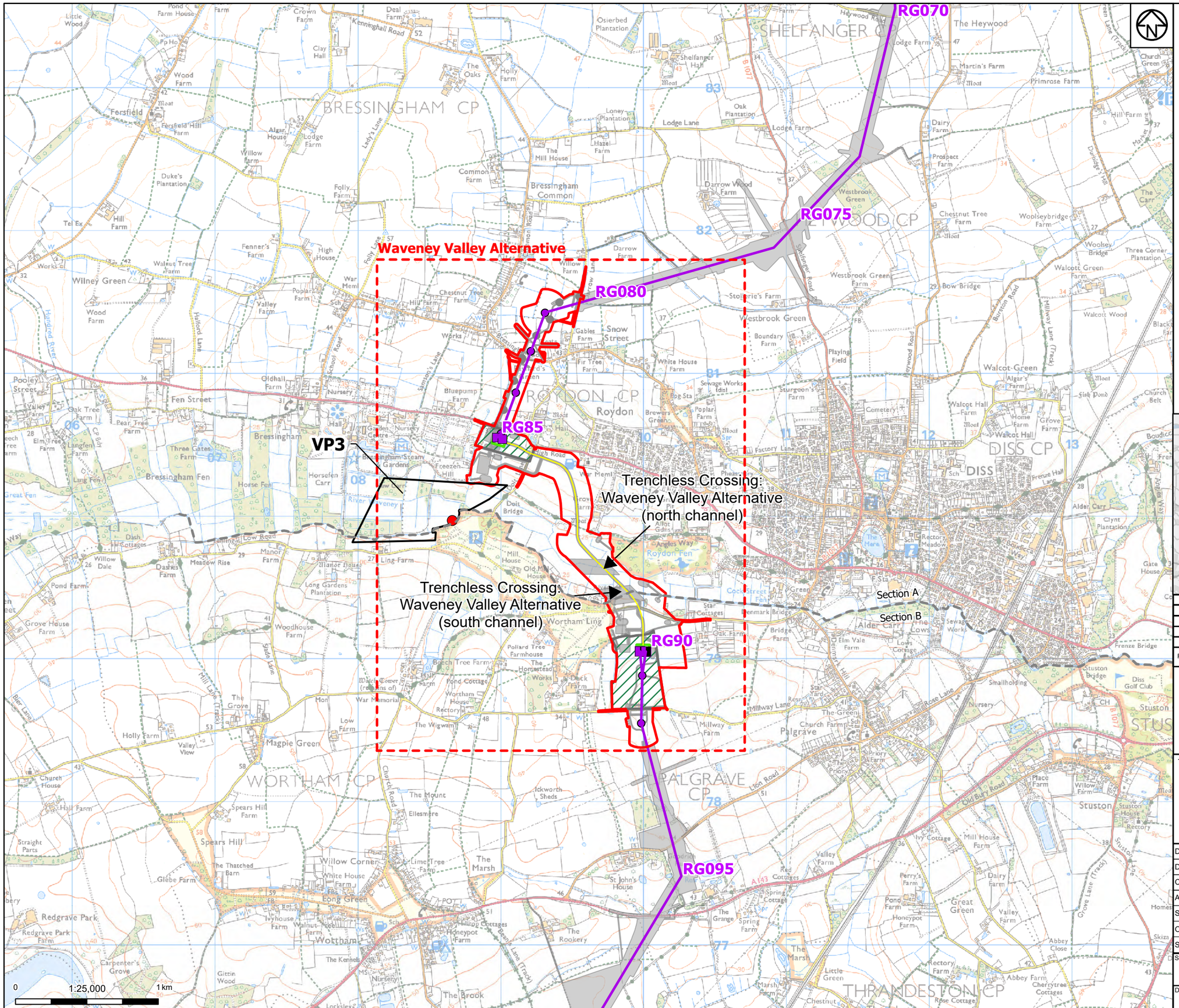
Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 5 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations
Vantage point (VP) (2022/2023)

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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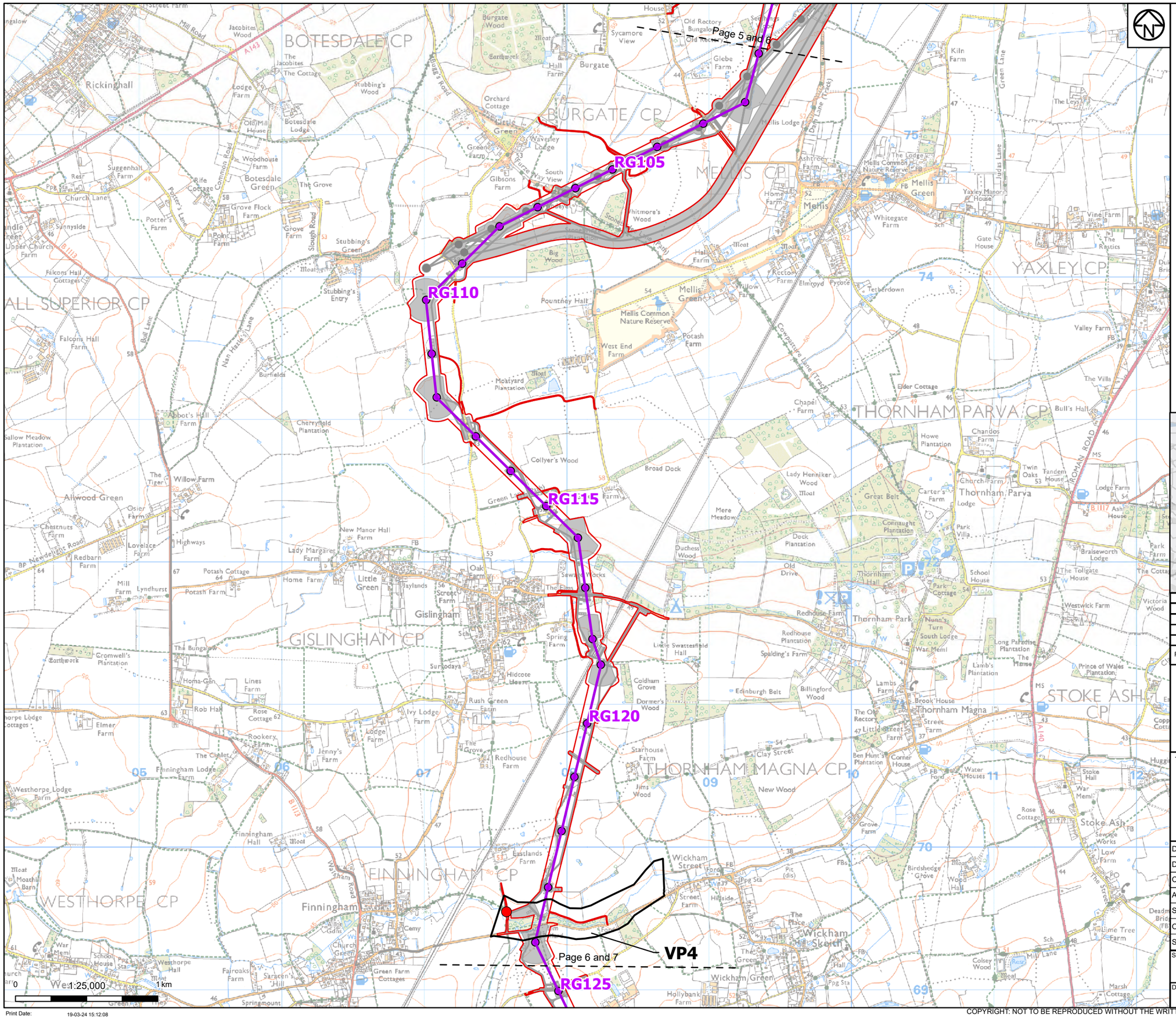
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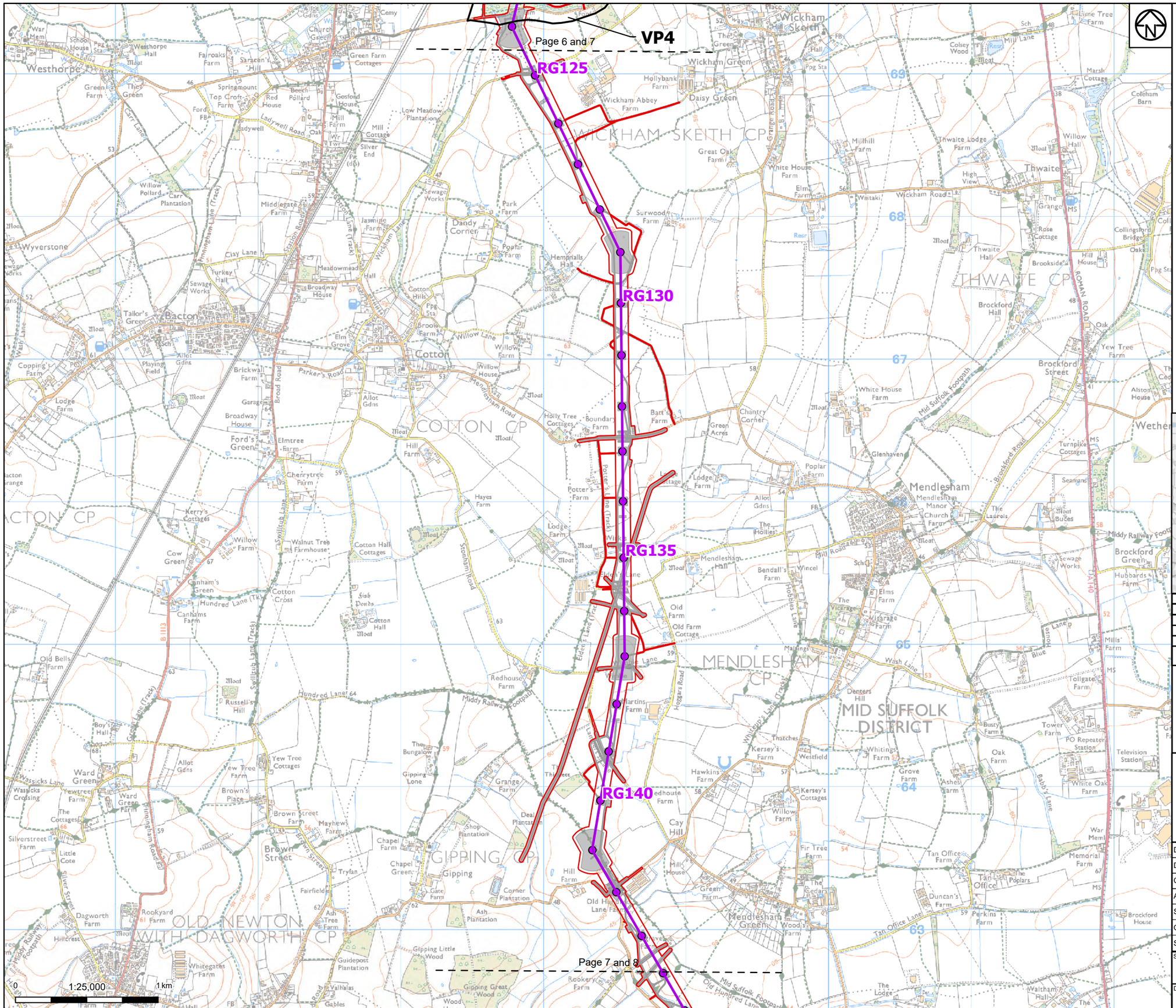
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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Page 5 and 6
RG105
RG110
RG115
RG120
RG125
VP4
Page 6 and 7
BOTESDALE CP
BURGATE CP
MELLIS CP
YAXLEY CP
ALL SUPERIOR CP
GISLINGHAM CP
THORNHAM MAGNA CP
THORNHAM PARVA CP
FINNINGHAM CP
WESTHORPE CP
STOKE ASH CP
Rickinghall
Botesdale
Burgate
Mellis
Mellis Green
Yaxley
Thornham Parva
Thornham Magna
Gislingham
Finningham
Stoke Ash
Wickham Skeith
Wickham Green
Allwood Green
Westhorpe
Stubbing's Green
Mellis Common Nature Reserve
Mellis Common Nature Reserve
Thornham Park
Thornham Hall
Lady Henniker Wood
Broad Dock
Collyer's Wood
Pountney Hall
Moatyard Plantation
Cherryfield Plantation
Big Wood
Whitmore's Wood
Dock Plantation
Connaught Plantation
Duchess Wood
Mere Meadow
Redhouse Plantation
Coldham Grove
Dormer's Wood
Edinburgh Belt
Billingford Wood
Jims Wood
New Wood
Lambs Plantation
Long Paradise Plantation
Ben Hunt's Plantation
Birdshedge Grove
Howe Plantation
Chandos Farm
Elder Cottage
Valley Farm
Vine Farm
Yaxley Manor House
Gate House
Whitegate Farm
Kiln Farm
Glebe Farm
Mellis Lodge
Ashtree Farm
Home Farm
Willow Farm
Rectory Farm
Elmcroyd
Pycote
Tetherdown
Pottery Farm
Potash Farm
West End Farm
Chapel Farm
Eastlands Farm
Starhouse Farm
Redhouse Farm
Spalding's Farm
Little Swattesfield Hall
Lambs Farm
Brook House
Thornham Magna Street Farm
Little Street Farm
Corner House
Water Houses
Stoke Hall
Low Farm
Lime Tree Farm
Colsey Wood
Marsh Cottage
Mill Lane
Church Farm
Thornham Parva Lodge
Carter's Farm
Great Belt
Park Villa
Park Cottage
School House
Tollgate House
Braiseworth Lodge
Westwick Farm
Victoria Wood
Prince of Wales Plantation
Lodge Farm
Ash House
Twin Oaks
Tandem House
Nunn's Turn
South Lodge
Long Paradise Plantation
The Manse
Lamb's Plantation
Redhouse Farm
Old Drive
Hidcote House
Rush Green Farm
Ivy Lodge Farm
Rookery Farm
Jenny's Farm
Finningham Lodge Farm
Finningham Hall
Eastlands Farm
Wickham Street
Hillside
The Place
The Green
Hollybank Farm
Springmount
Fairoaks Farm
Saracen's Hill
Green Farm Cottages
Church Green
Westhorpe Hall
Lyndhurst
Potash Farm
Potash Cottage
Lovelace Farm
Redbarn Farm
Osier Farm
Chestnuts Farm
New Manor Hall Farm
Lady Margaret Farm
Oak Farm
Home Farm
Little Green
Gaylands
Street Farm
Sewage Works
The Elms
Spring Farm
Sunnodaya
Homa-Gen
Lines Farm
Rob Hall
Rose Cottage
Elmer Farm
The Bungalow
Cromwell's Plantation
Earthwork
Sunnyside
Falcons Hall Cottages
Falcons Hall Farm
Abbot's Hall Farm
Sallow Meadow Plantation
Burfields
Nan Hazle Lane
Bull Lane
Potter's Lane
Common Road
Slough Road
Burgs Road
Green Lane
Dark Lane (Track)
Cowpasture Lane (Track)
Roman Road
Mill Road
Church Lane
Rife Cottage
Grove Flock Farm
Grove Farm
Woodhouse Farm
Botesdale Lodge
Old Mill House
Lodge Farm
Jacobites Wood
The Jacobites
The Cottage
Stubbing's Wood
Stubbing's Entry
Orchard Cottage
Little Green
Green Farm
Waveney Lodge
Gibsons Farm
South View
Burgate Wood
Hall Farm
Earthwork
Sycamore View
Old Rectory Bungalow
Old Rectory
Sewage Works
Moat
Hall Farm
Willow Farm
The Tiger
Allwood Green
Newdelle Road
Highways
Mill Farm
Lyndhurst
Potash Farm
Potash Cottage
Home Farm
Little Green
Gislingham
Spring Farm
Sunnodaya
Hidcote House
Rush Green Farm
Ivy Lodge Farm
Lodge Farm
Rookery Farm
Jenny's Farm
The Grove
Redhouse Farm
Finningham Lodge Farm
Finningham Hall
Eastlands Farm
Wickham Street
Hillside
The Place
The Green
Hollybank Farm
Springmount
Fairoaks Farm
Saracen's Hill
Green Farm Cottages
Church Green
Westhorpe Hall
Lyndhurst
Potash Farm
Potash Cottage
Lovelace Farm
Redbarn Farm
Osier Farm
Chestnuts Farm
New Manor Hall Farm
Lady Margaret Farm
Oak Farm
Home Farm
Little Green
Gaylands
Street Farm
Sewage Works
The Elms
Spring Farm
Sunnodaya
Homa-Gen
Lines Farm
Rob Hall
Rose Cottage
Elmer Farm
The Bungalow
Cromwell's Plantation
Earthwork
Sunnyside
Falcons Hall Cottages
Falcons Hall Farm
Abbot's Hall Farm
Sallow Meadow Plantation
Burfields
Nan Hazle Lane
Bull Lane
Potter's Lane
Common Road
Slough Road
Burgs Road
Green Lane
Dark Lane (Track)
Cowpasture Lane (Track)
Roman Road
Mill Road
Church Lane
Rife Cottage
Grove Flock Farm
Grove Farm
Woodhouse Farm
Botesdale Lodge
Old Mill House
Lodge Farm
Jacobites Wood
The Jacobites
The Cottage
Stubbing's Wood
Stubbing's Entry
Orchard Cottage
Little Green
Green Farm
Waveney Lodge
Gibsons Farm
South View
Burgate Wood
Hall Farm
Earthwork
Sycamore View
Old Rectory Bungalow
Old Rectory
Sewage Works
Moat
Hall Farm
Willow Farm
The Tiger
Allwood Green
Newdelle Road
Highways
Mill Farm



Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 7 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
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Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

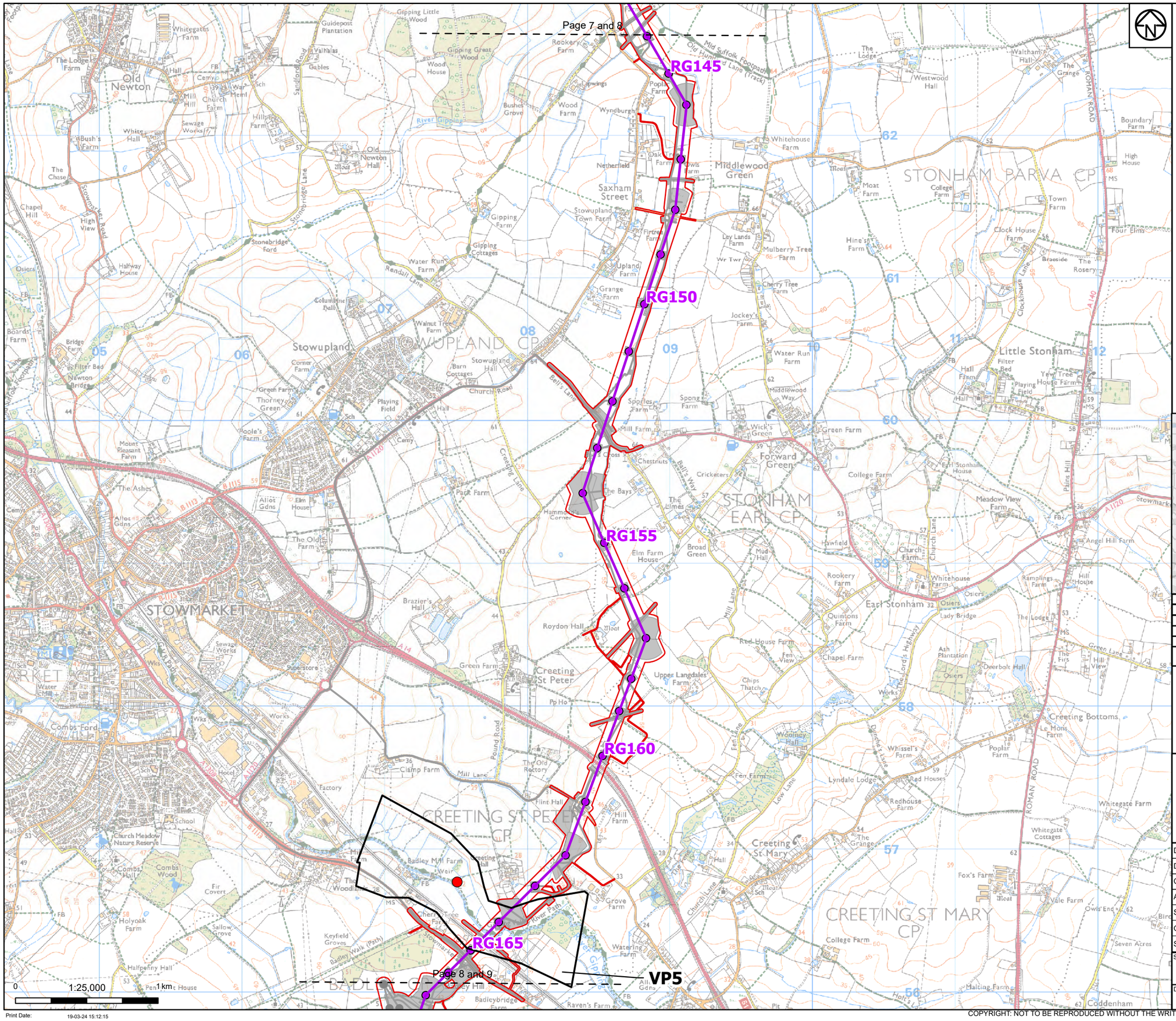
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 8 of 25

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Suitability Description: Accepted as Concept Stage

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Page 8 and 9

VP5

RG170

RG175

RG180

RG185

RG190

Page 9 and 10

0 1:25,000 1 km

Print Date: 19-03-24 15:12:19

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Vantage point (VP) (2022/2023)

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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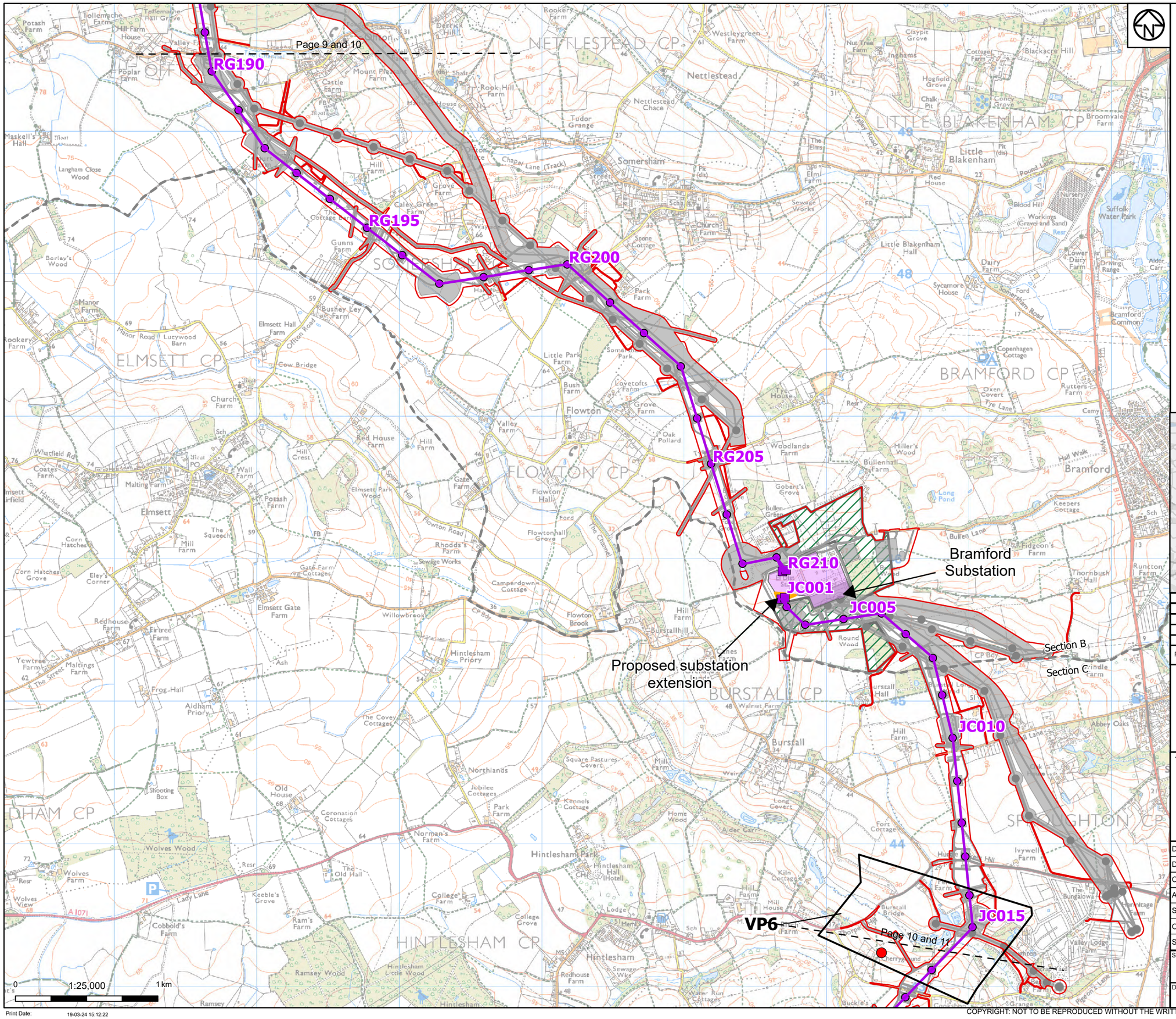
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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed low duty gantry
Proposed pylon position
Existing substation
Proposed substation extension
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Surveyor locations
Vantage point (VP) (2022/2023)

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 10 of 25

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VP6

JC015

JC020

JC025

JC030

Page 10 and 11

Page 11 and 12

HINTLESHAM CP

CHATTISHAM CP

COPDOCK AND WASHBROOK CP

WENHAM PARVA CP

WENHAM MAGNA CP

CAPEL ST MARY CP

BENTLEY CP

BELSTEAD CP

HOLTON ST MARY CP

0 1:25,000 1 km

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Surveyor locations
- Transect (T)
- Vantage point (VP) (2022/2023)

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview Page 11 of 25

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T7

T8

T9

Trenchless Crossing:
Higham Road

Trenchless Crossing:
River Stour (north part)

Trenchless Crossing:
River Stour (south part)

Trenchless Crossing:
Woodland Crossing Near
St Mary's Church Langham

Trenchless Crossing:
A12 highway crossing

Page 11 and 12

Page 12 and 13

0 1:25,000 1 km

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Draft order limits

Project sections

Proposed project design details

Proposed underground cable alignment

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Transect (T)

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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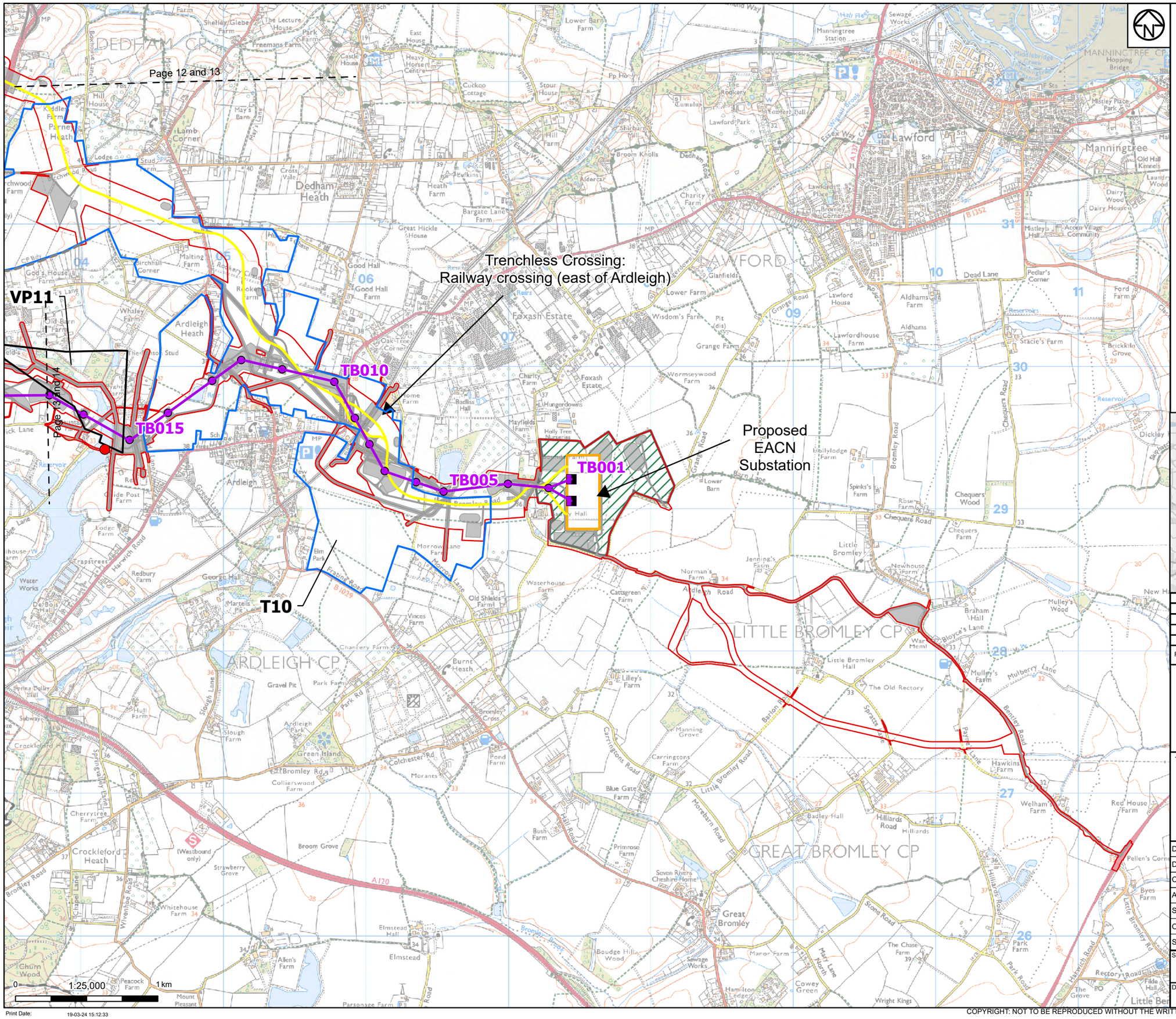
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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed EACN substation
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Surveyor locations
- Transect (T)
- Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 13 of 25

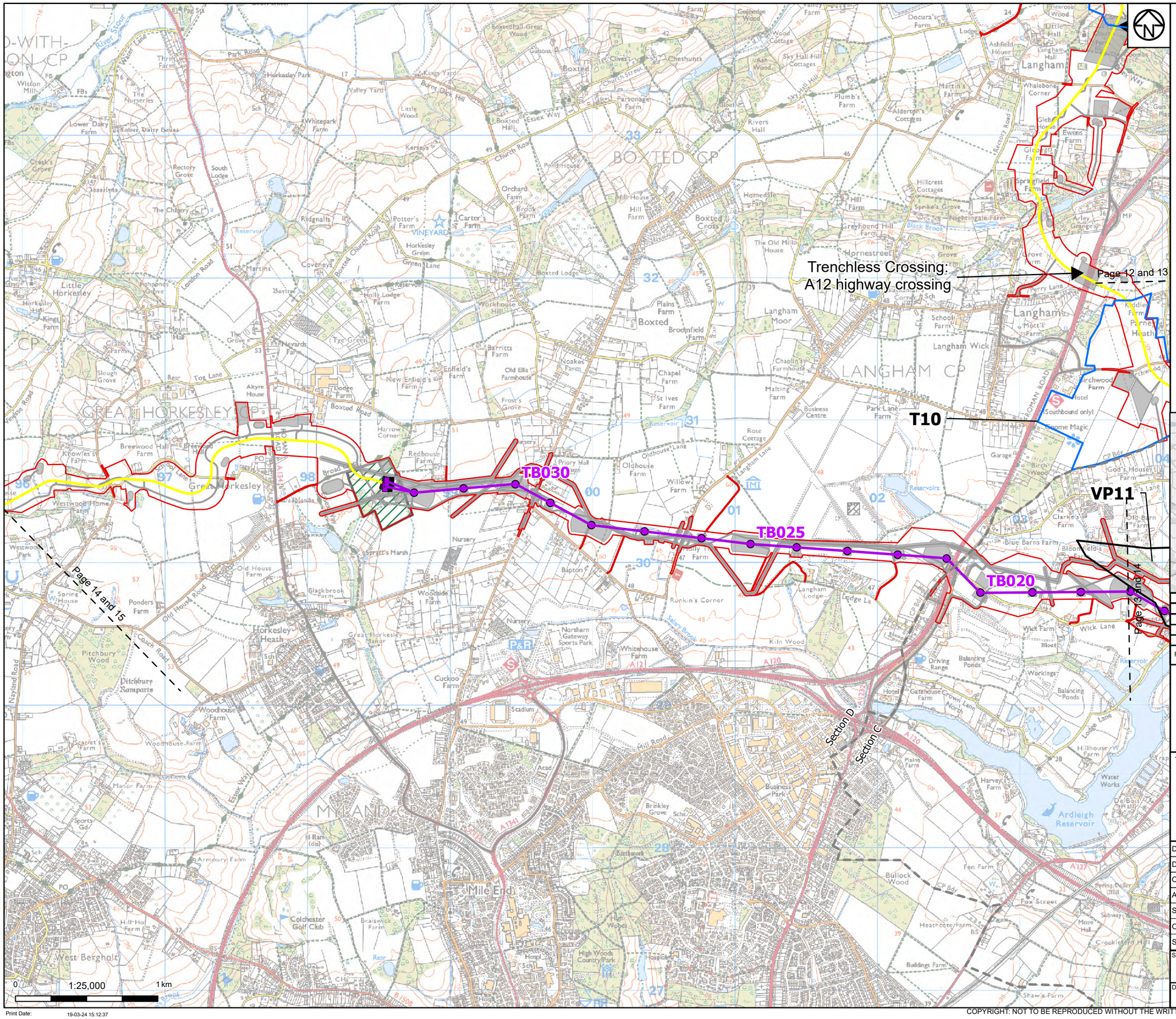
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Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Suitability Description: Accepted as Concept Stage

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
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- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Transect (T)
- Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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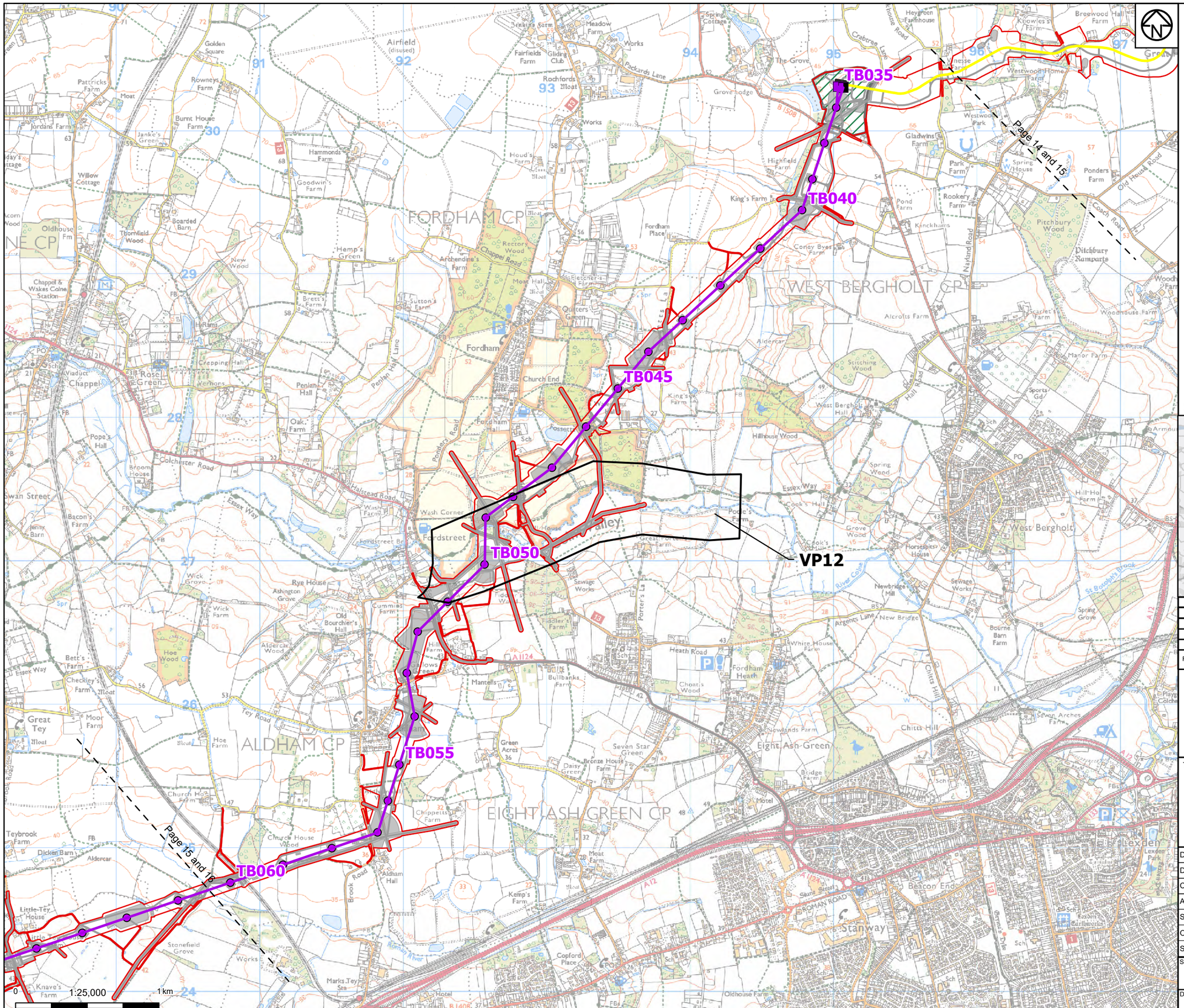
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
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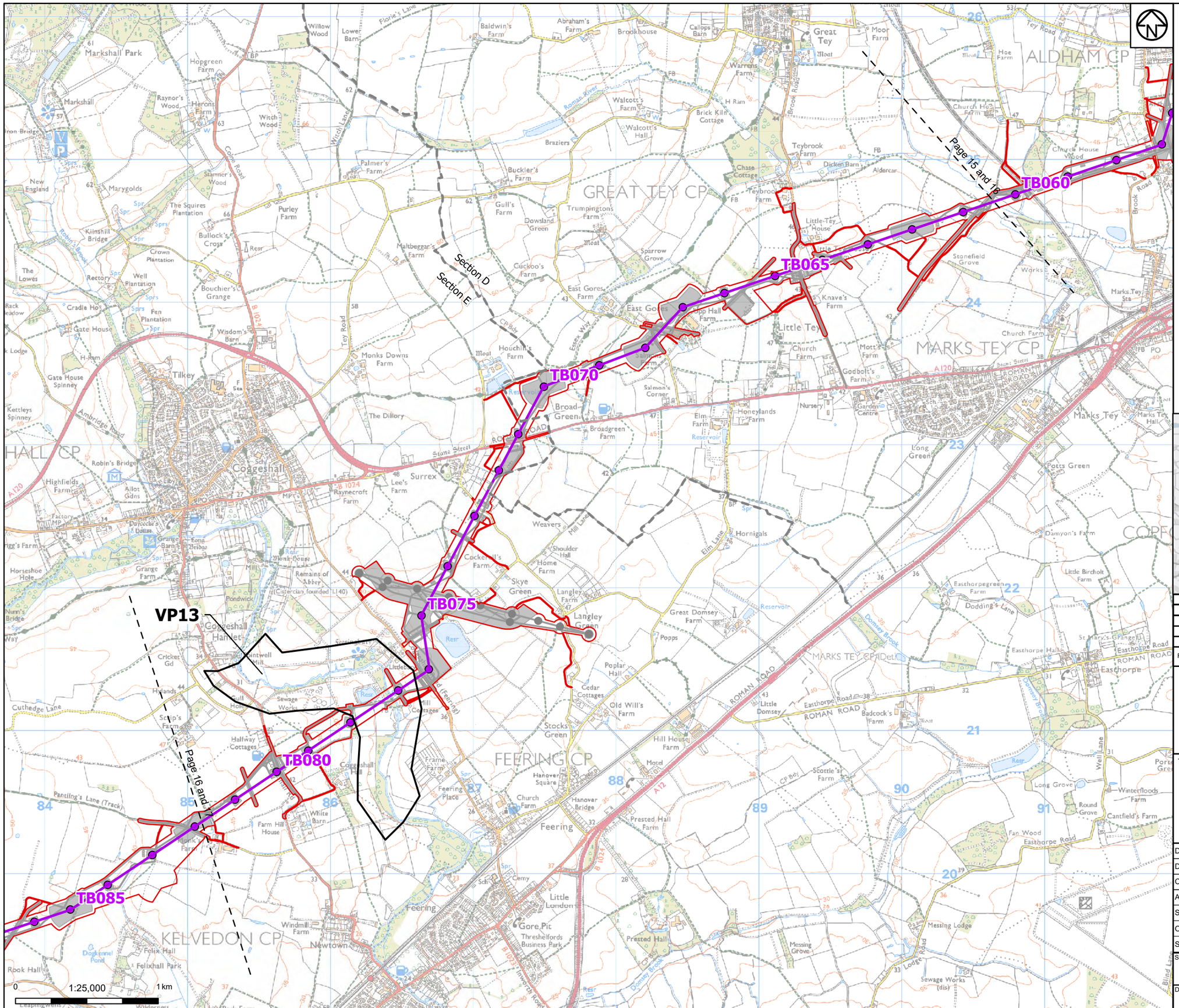
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
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Suitability Code:	A2	Project Number:	10059280

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VP13

VP14

VP15

TB080

TB085

TB090

TB095

TB100

TB105

Page 16 and 17

Page 17 and 18

CRESSING CP

SILVER END CP

KELVEDON CP

FAULKBOURNE CP

RIVENHALL CP

WITHAM

HOTLEY CP

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 17 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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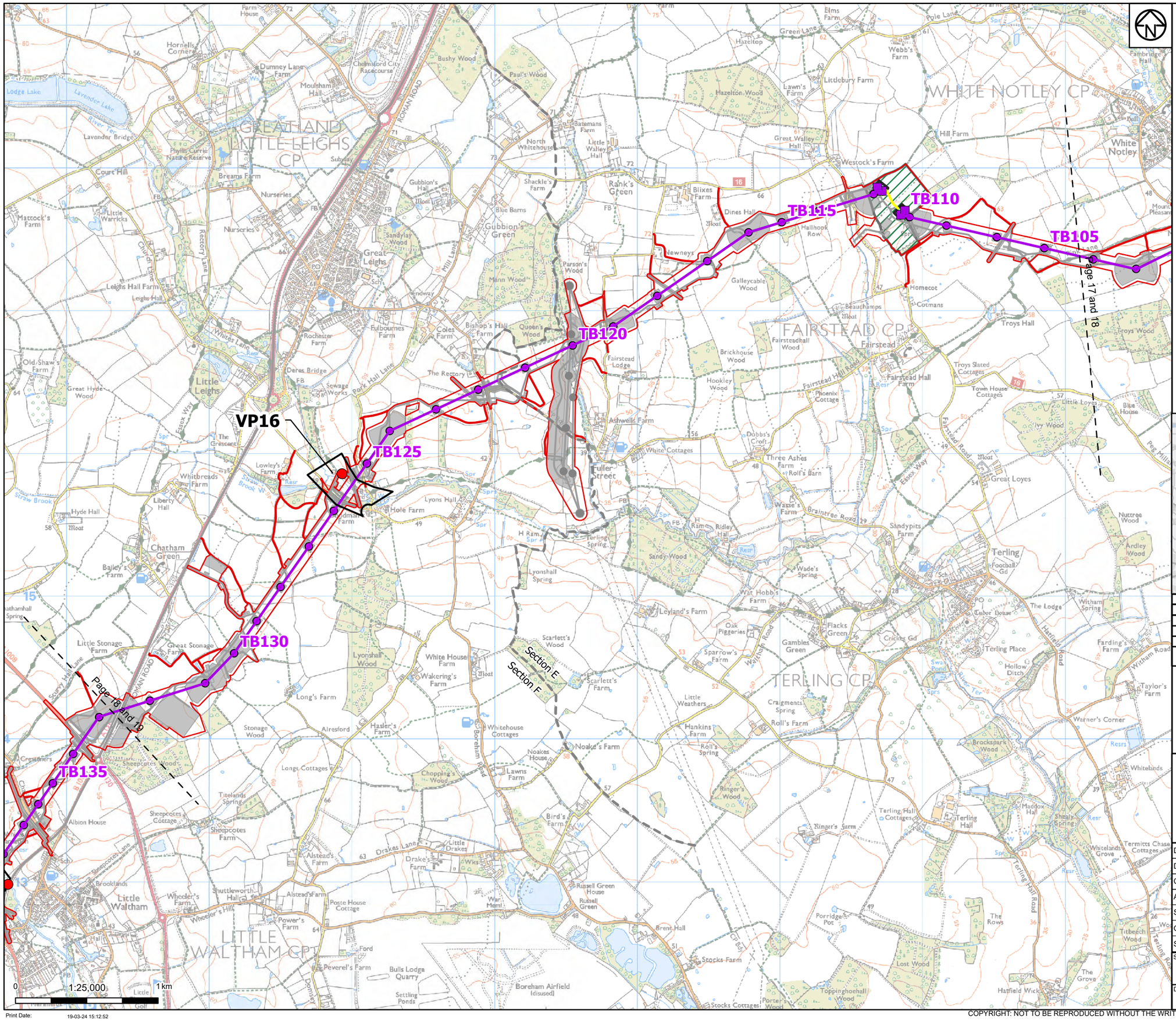
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Project sections

Proposed project design details

Proposed overhead line alignment
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Surveyor locations
Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

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Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview Page 18 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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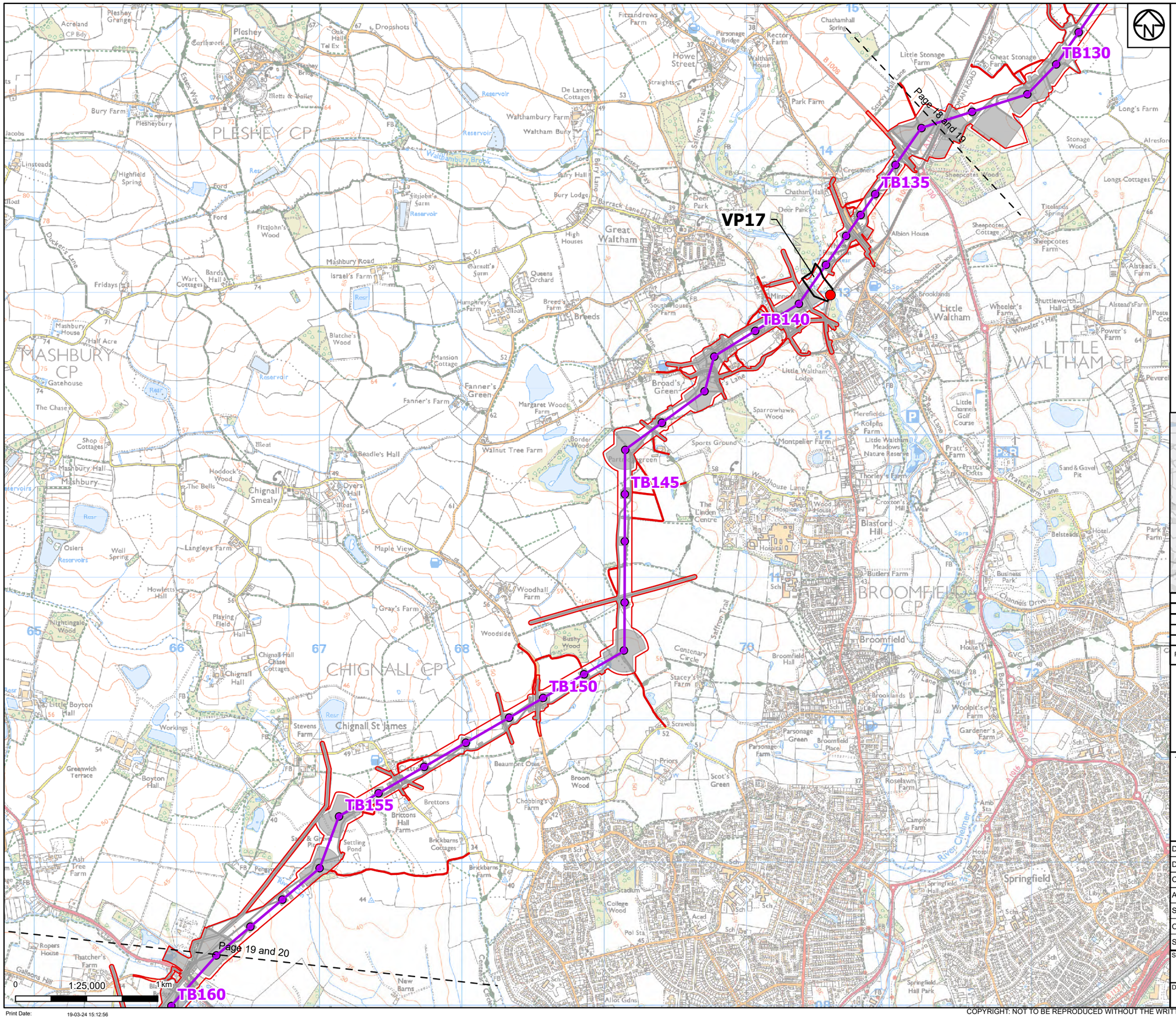
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 19 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
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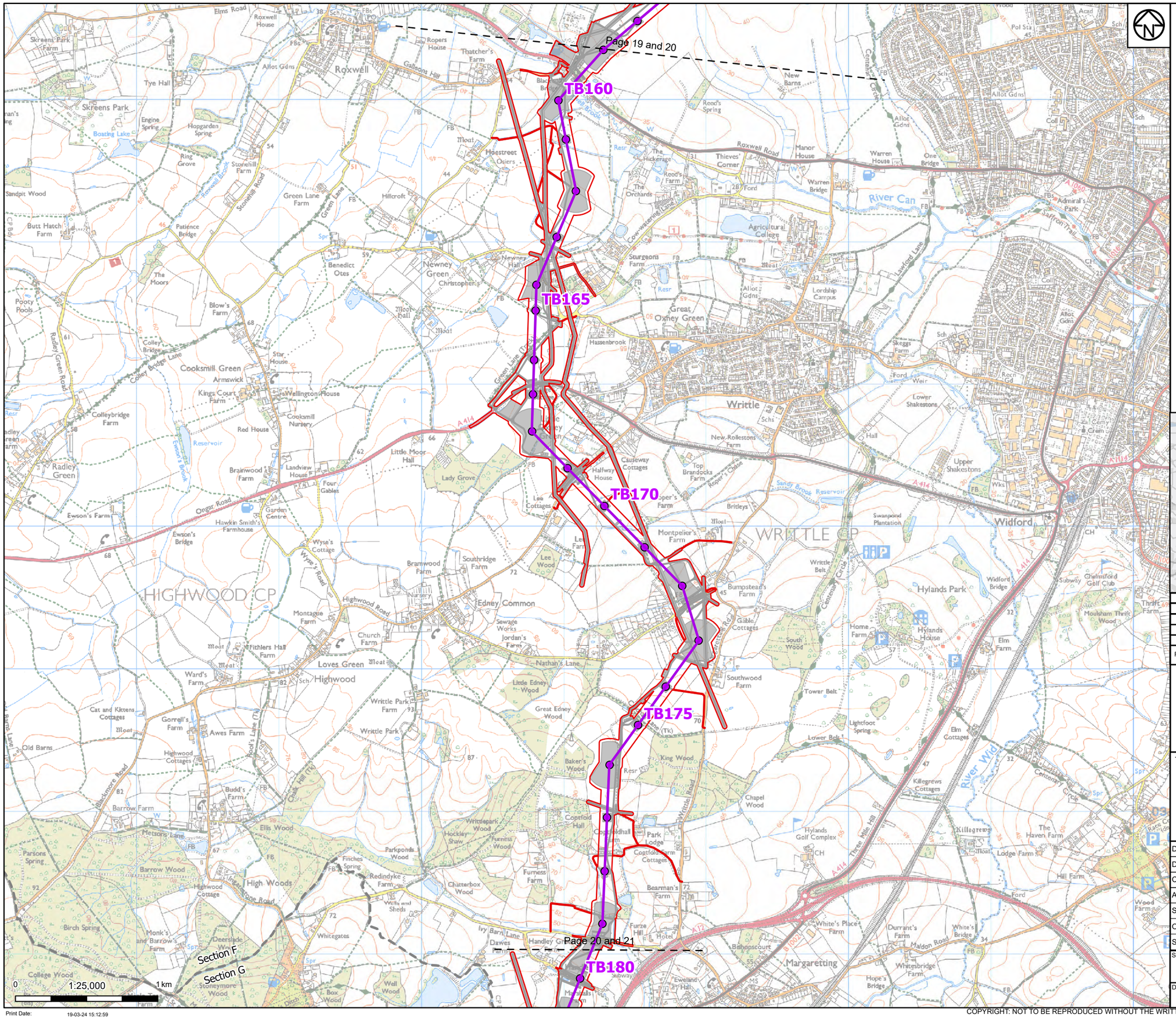
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 20 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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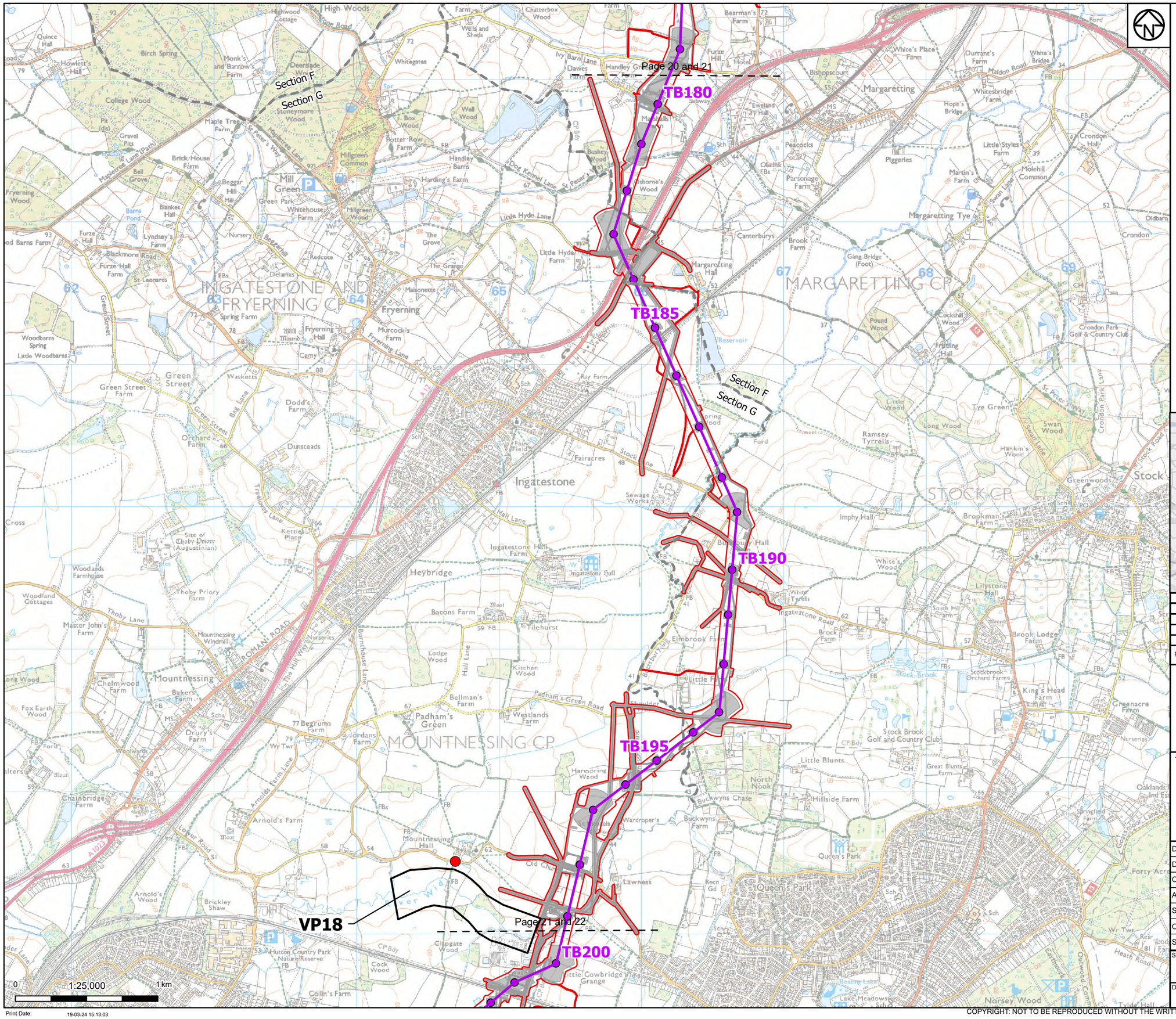
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

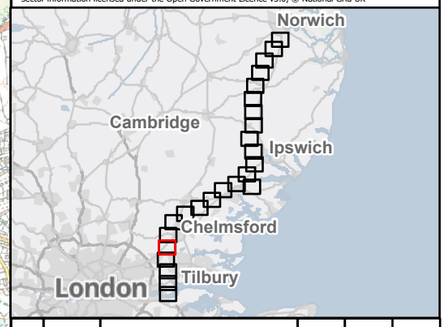
Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 21 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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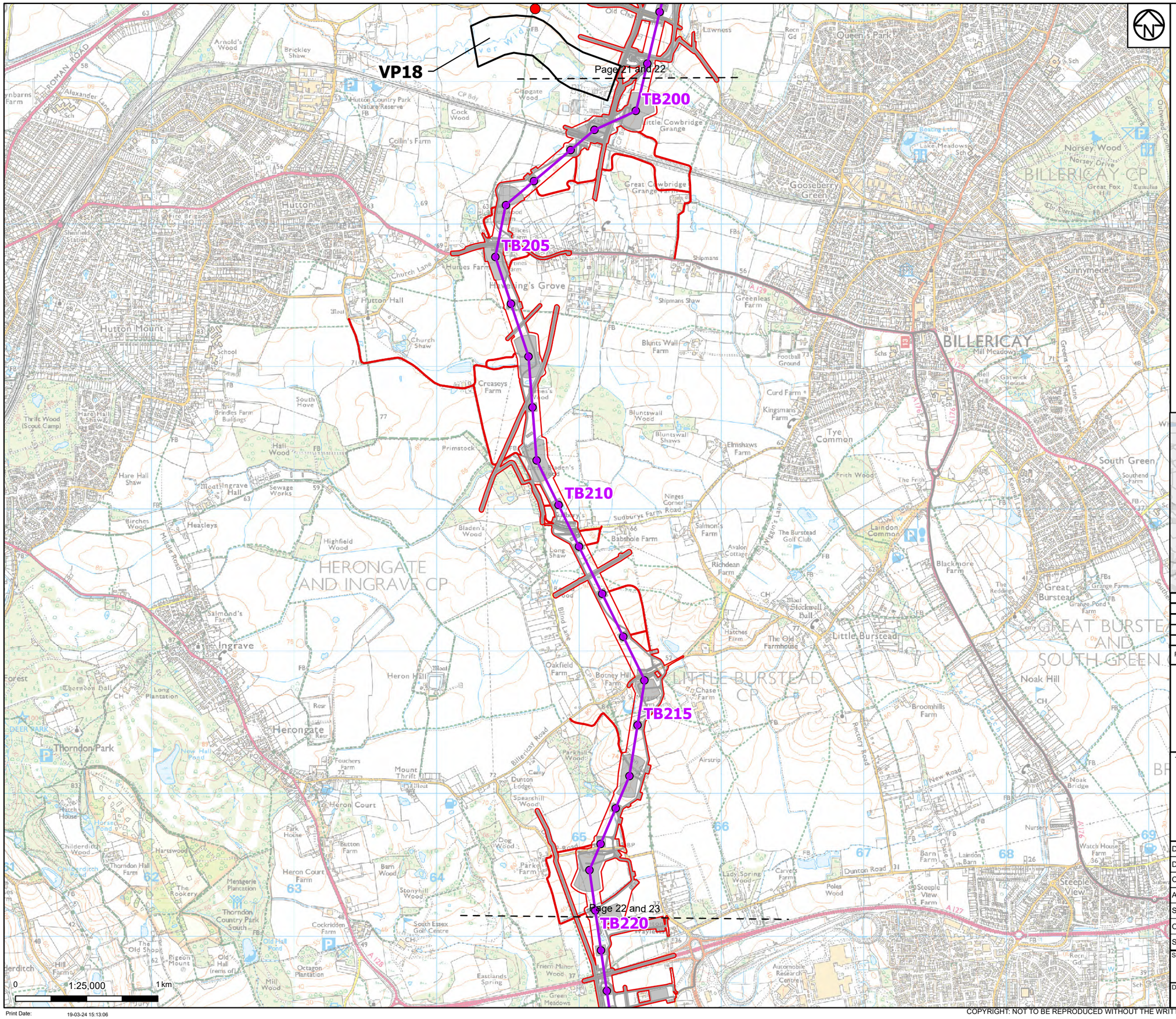
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Surveyor locations

Vantage point (VP) (2022/2023)

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 22 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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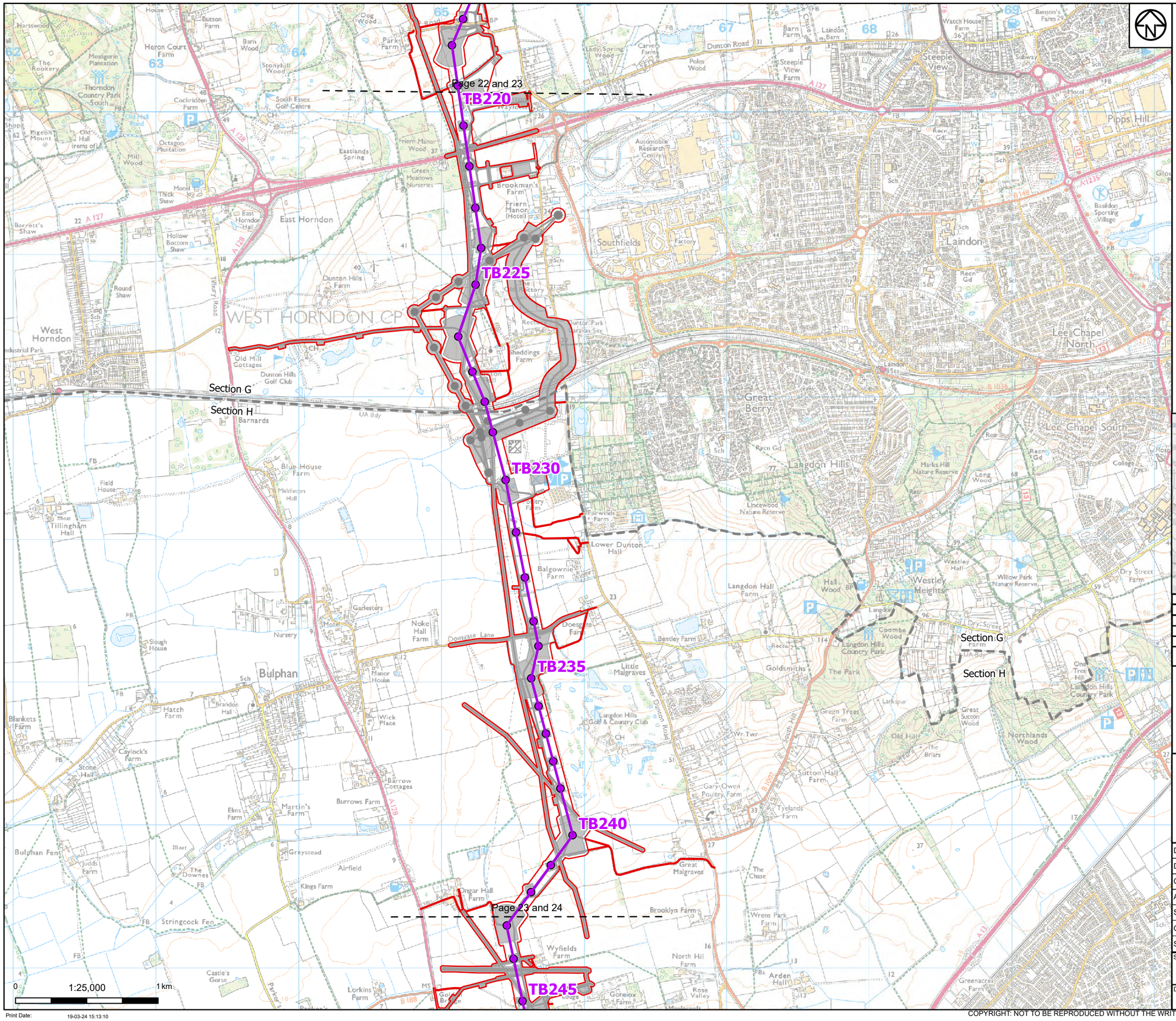
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
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Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

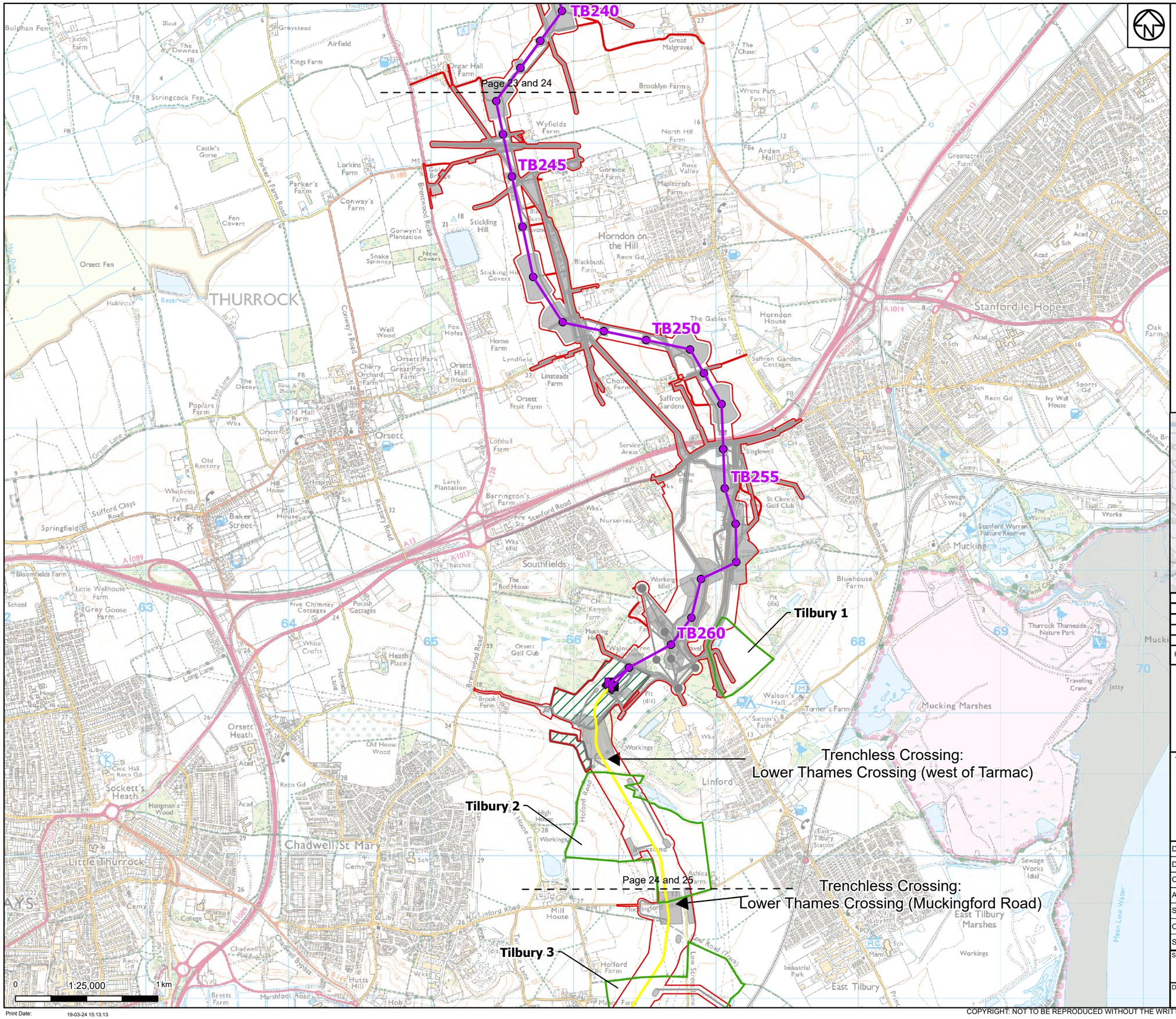
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Vantage point (VP) (2023/2024)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 24 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

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Tilbury 2

Page 24 and 25

Trenchless Crossing:
Lower Thames Crossing (Muckingford Road)

Tilbury 3

Trenchless Crossing:
Tilbury Loop Railway and existing overhead lines (NGET and DNO)

Tilbury 4

Tilbury 5

Tilbury Substation

Tilbury 6a

Tilbury 6b

0 1:25,000 1 km

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- Draft order limits
- Project sections

Proposed project design details

- Proposed underground cable alignment
- Existing substation
- Other temporary and permanent construction and operational works

Discipline specific constraints

- Vantage point (VP) (2023/2024)

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.1 - Ecology and Biodiversity - Full Route Overview
Page 25 of 25

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
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Approved	K. Burrows	Date	April 2024
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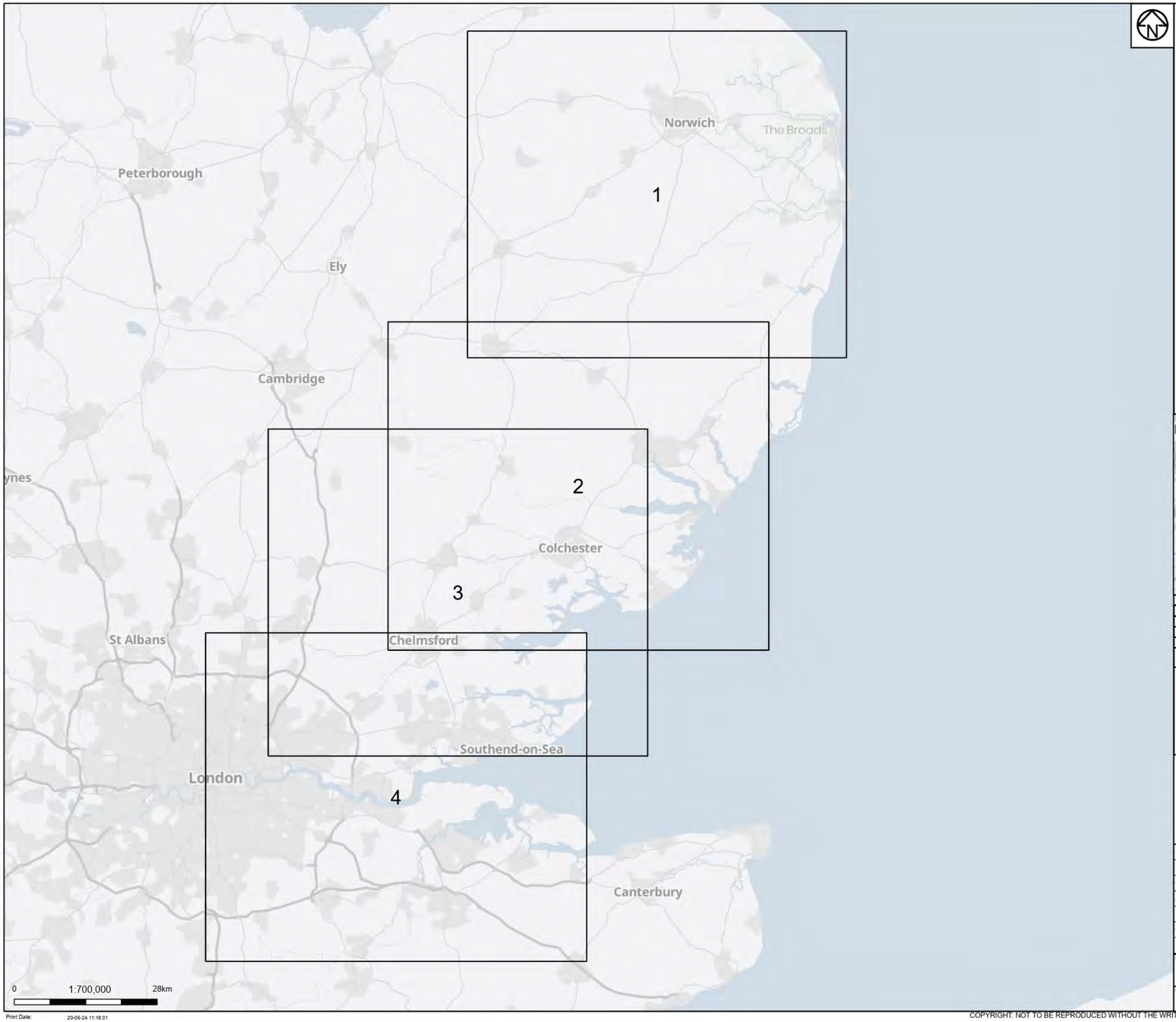
Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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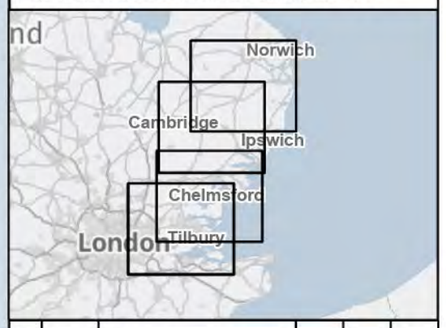
Figure A8.5.2: International and National Designated Sites of Ornithological Importance



Pages

Note: This figure has been revised. This does not affect the preliminary assessment in the PEIR. For more details we refer you to the Errata and Corrections Log (June 2024) on the Project website

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B	June 2024	FOR STATUTORY CONSULTATION	KF	AF	KB
A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.2 - Ecology and Biodiversity - International and National Designated Sites of Ornithological Importance Overview

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Approved	K. Burrows	Date	June 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Broadland

Broadland

Broadland

Broadland

Norwich

South Norfolk Council

Waveney Valley overhead line and Waveney Valley Alternative

Breckland

Redgrave and South Lopham Fens

Mid Suffolk District Council

VP1

VP2

VP3

VP4

Section A

Section B

Page 1 and 2

Reepham

Dereham

Swaffham

Hingham

Watton

Wymondham

Attleborough

Thetford

Harleston

Eye

Halesworth

Loddon

Beccles

Bungay

Southwold

Framlingham

Saxmundham

Bury St Edmunds

Stalham

Norwich Airport

A47

A11

A140

A143

A146

A1065

A1066

A12

A134

A14

0 1:225,000 8km

Print Date: 20-06-24 11:18:10

Draft order limits
Project sections
Local Planning Authority

Proposed project design details

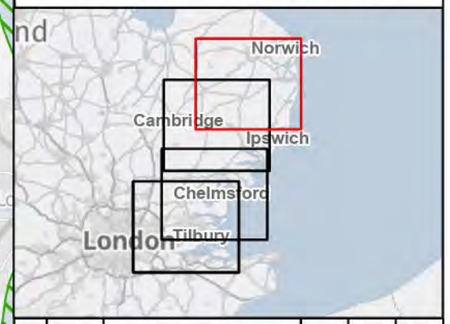
Proposed overhead line alignment

Discipline specific constraints

2km Study Area
20km Study Area
Vantage point (VP) (2022/2023)
Ramsar Site
Special Protection Areas

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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B	June 2024	FOR STATUTORY CONSULTATION	KF	AF	KB
A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

nationalgrid

PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.2 - Ecology and Biodiversity - International and National Designated Sites of Ornithological Importance Page 1 of 4

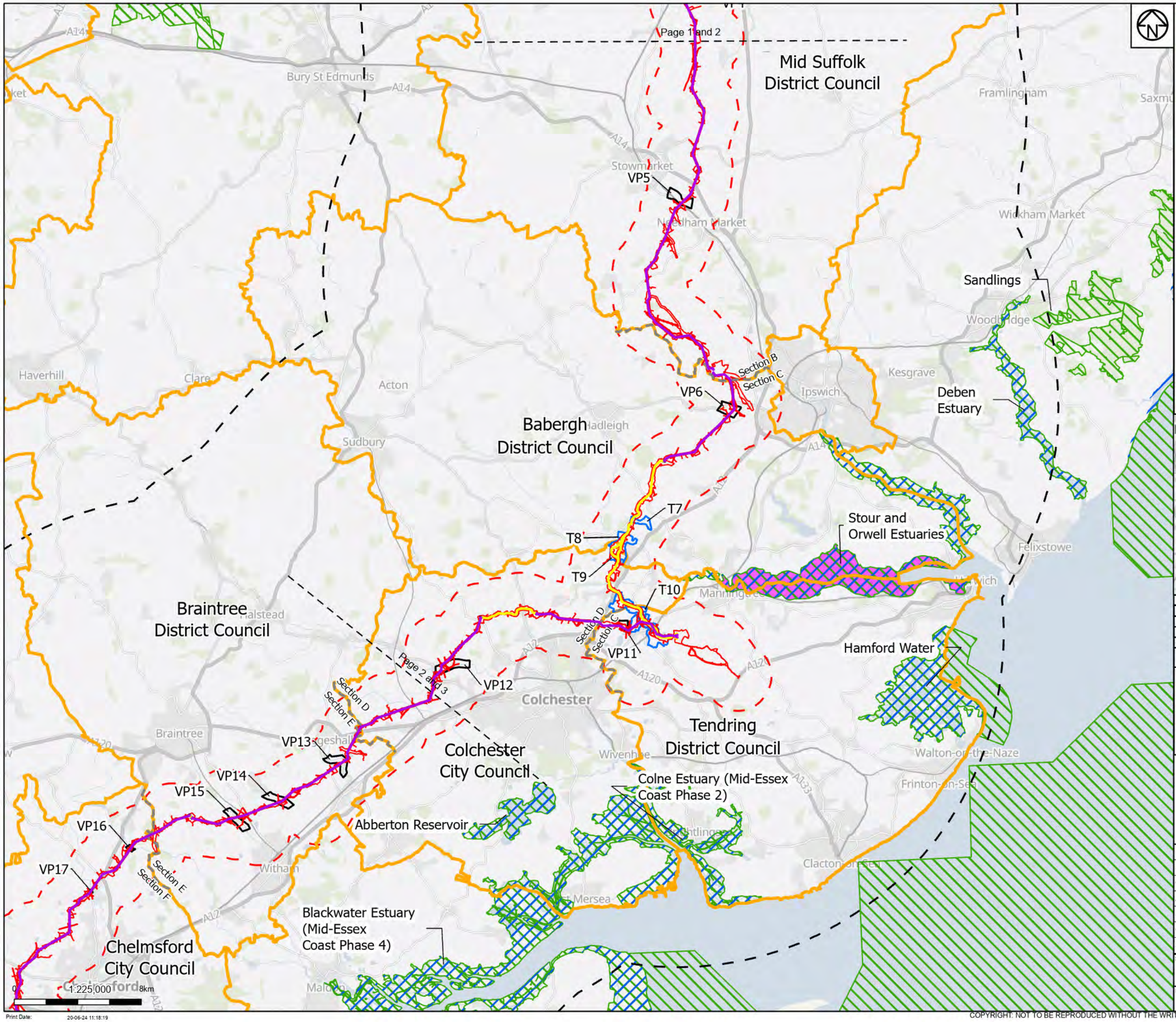
Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:225,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR--00102

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Draft order limits
Project sections
Local Planning Authority

Proposed project design details

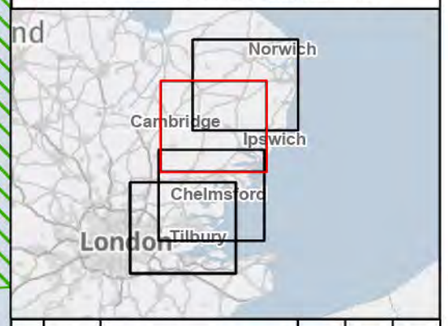
Proposed overhead line alignment
Proposed underground cable alignment
Proposed cable sealing end compound

Discipline specific constraints

2km Study Area
20km Study Area
Transect
Vantage point (VP) (2022/2023)
Ramsar Site
Special Sites of Scientific Interest
Special Protection Areas

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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nationalgrid

PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.2 - Ecology and Biodiversity - International and National Designated Sites of Ornithological Importance Page 2 of 4

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:225,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

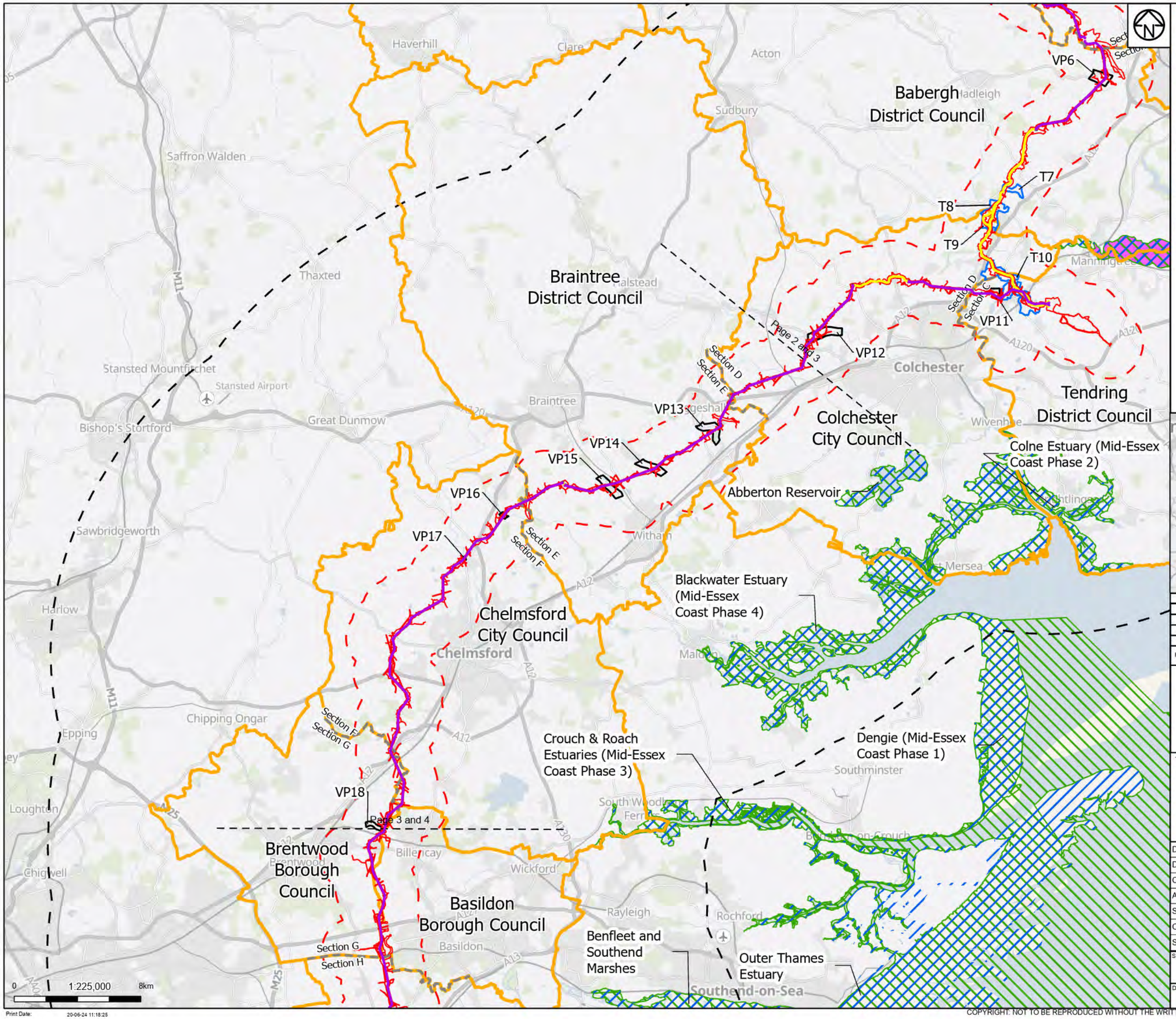
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Drawing Number: 10059280-ARC-ELS-ZZ-DR--00102

Revision: B

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.2 - Ecology and Biodiversity - International and National Designated Sites of Ornithological Importance
Page 3 of 4

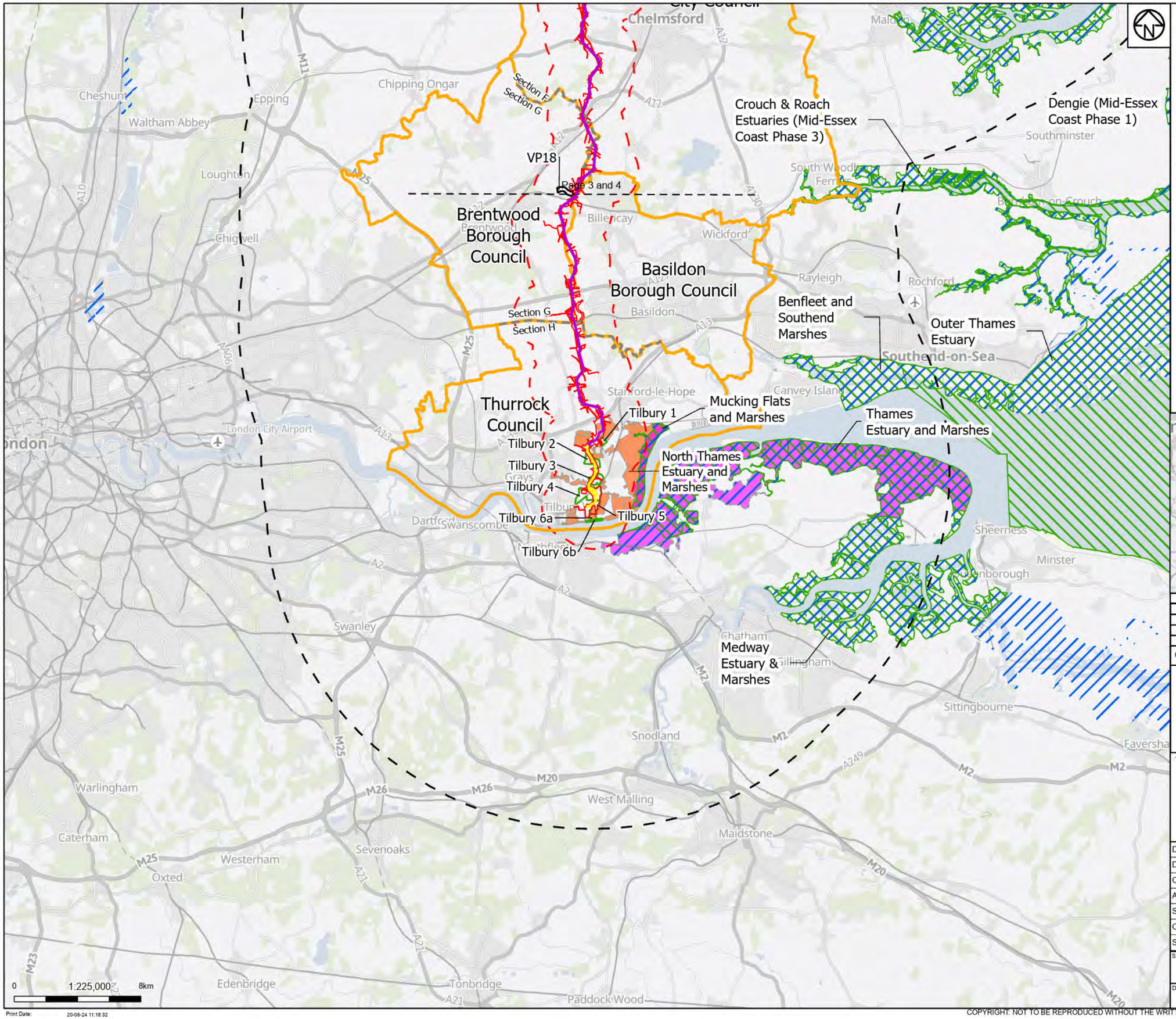
Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:225,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Drawing Number:
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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.2 - Ecology and Biodiversity - International and National Designated Sites of Ornithological Importance Page 4 of 4

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:225,000	Datum:	AOD
Original Size:	A3	Grid:	OS
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Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR--00102

Revision: B

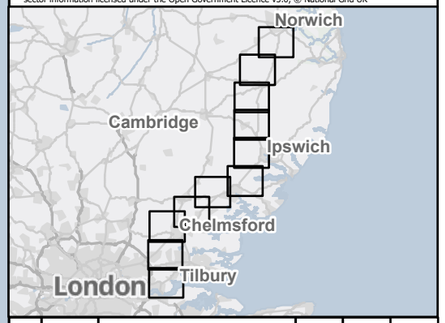
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Figure A8.5.3: NSN/ Ramsar Qualifying Features Data Search Records

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Overview

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Revision: A

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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

RG025

RG030

RG035

VP1

3

2515

2

6

1200

3000

2

Page 1 and 2

0 1:50,000 2 km

Print Date: 19-03-24 15:15:02

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

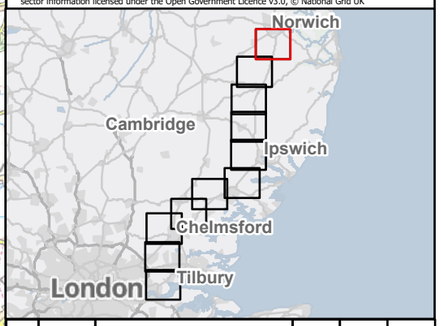
Sparse

Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Page 1 of 11

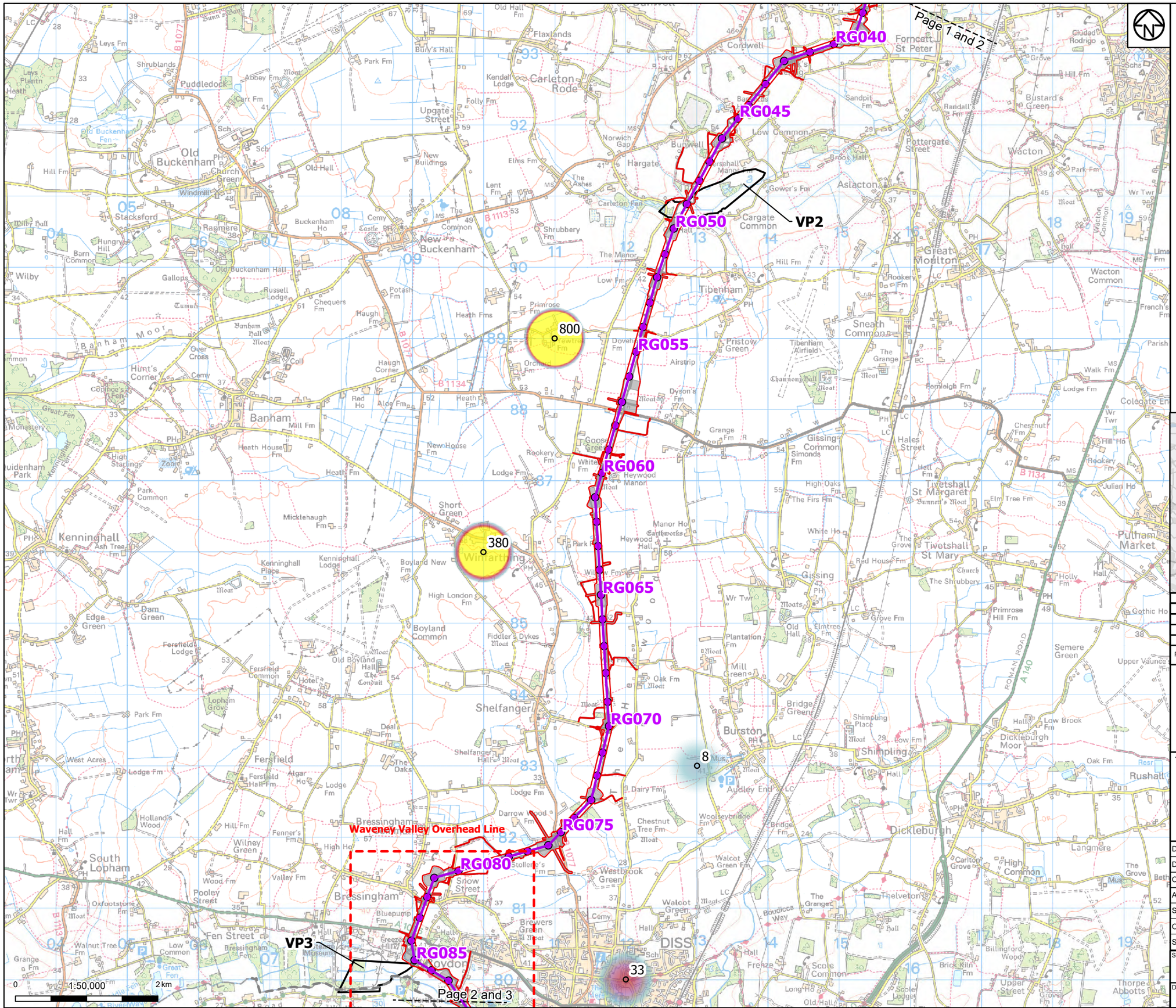
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Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

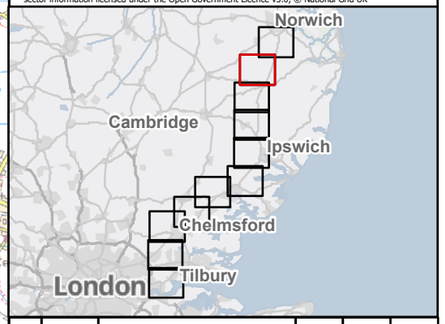
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Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Page 2 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
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Page 2 and 3

Section A

Section B

RG090

RG095

RG100

RG105

RG110

RG115

RG120

RG125

RG130

VP4

15

145

30

10

50

55

180

5

Page 3 and 4

0 1:50,000 2 km

Print Date: 19-03-24 15:15:14

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

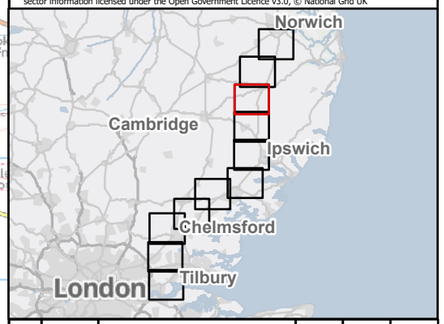
Sparse

Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Page 3 of 11

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Drawn	I. Singh	Date	April 2024
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Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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RG060
RG065
RG070
RG075
RG080
RG85
RG90
RG095
RG100
RG105
RG110
380
8
33
2
3
145
15
30
10
50
VP3
Waveney Valley Alternative
Trenchless Crossing:
Waveney Valley Alternative
(north channel)
Trenchless Crossing:
Waveney Valley Alternative
(south channel)
Section A
Section B
0
1:50,000
2 km
Print Date: 19-03-24 15:13:17

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density
Sparse
Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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London

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Norwich to Tilbury

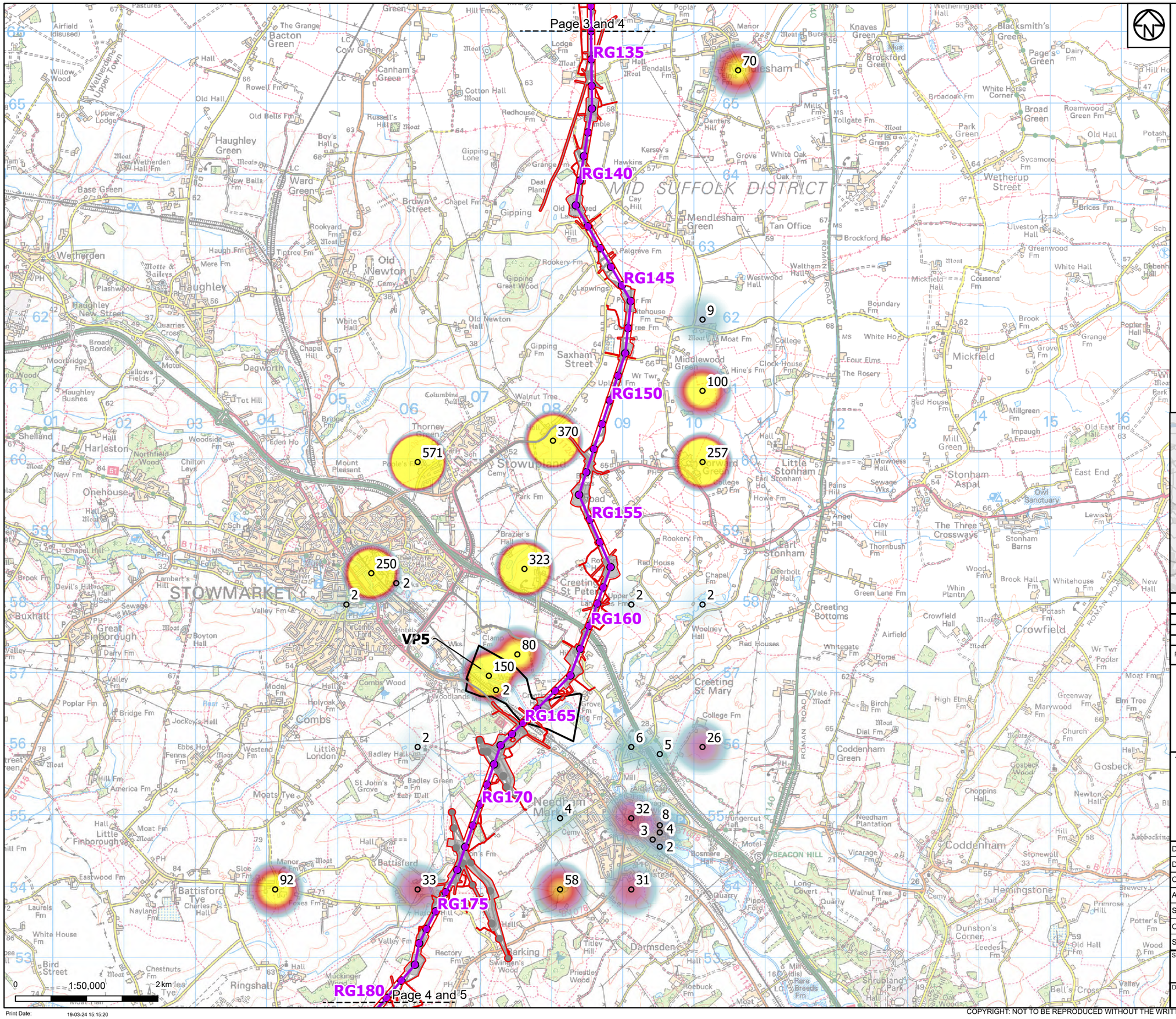
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Page 3a of 11

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Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

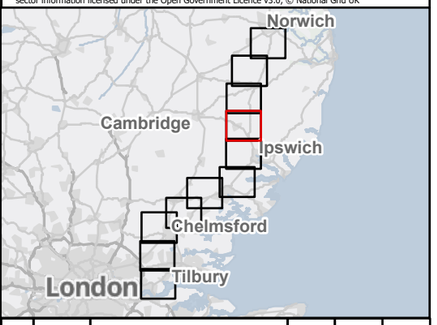
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Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records
Page 4 of 11

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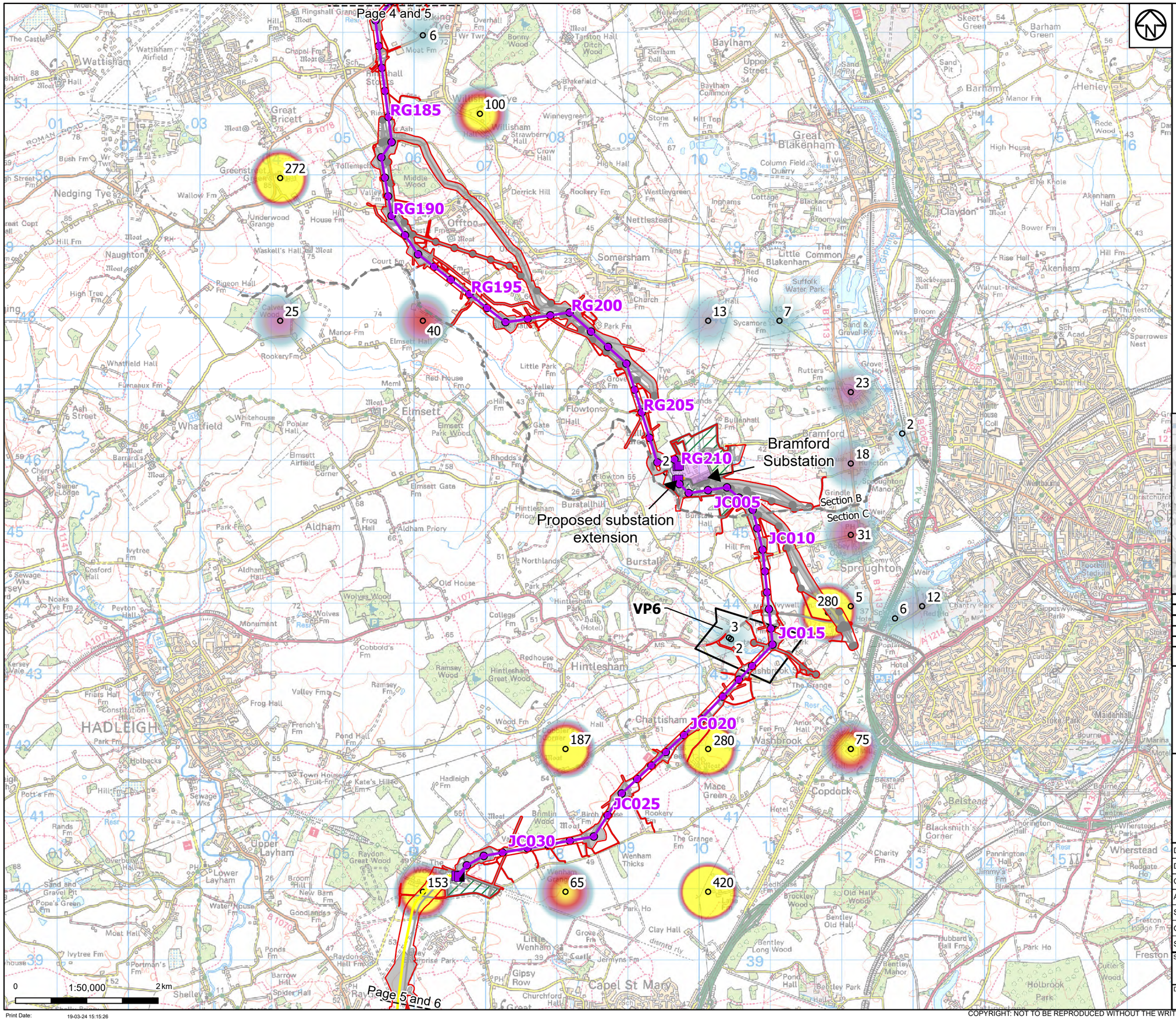
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed substation extension

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

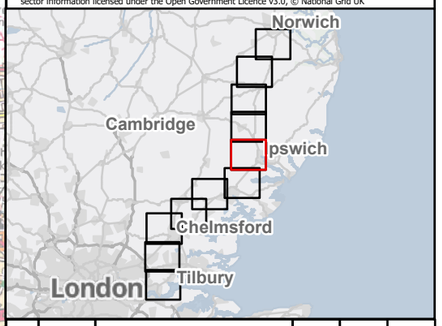
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Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records
Page 5 of 11

Designed	E. Pickering	Date	April 2024
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Approved	K. Burrows	Date	April 2024
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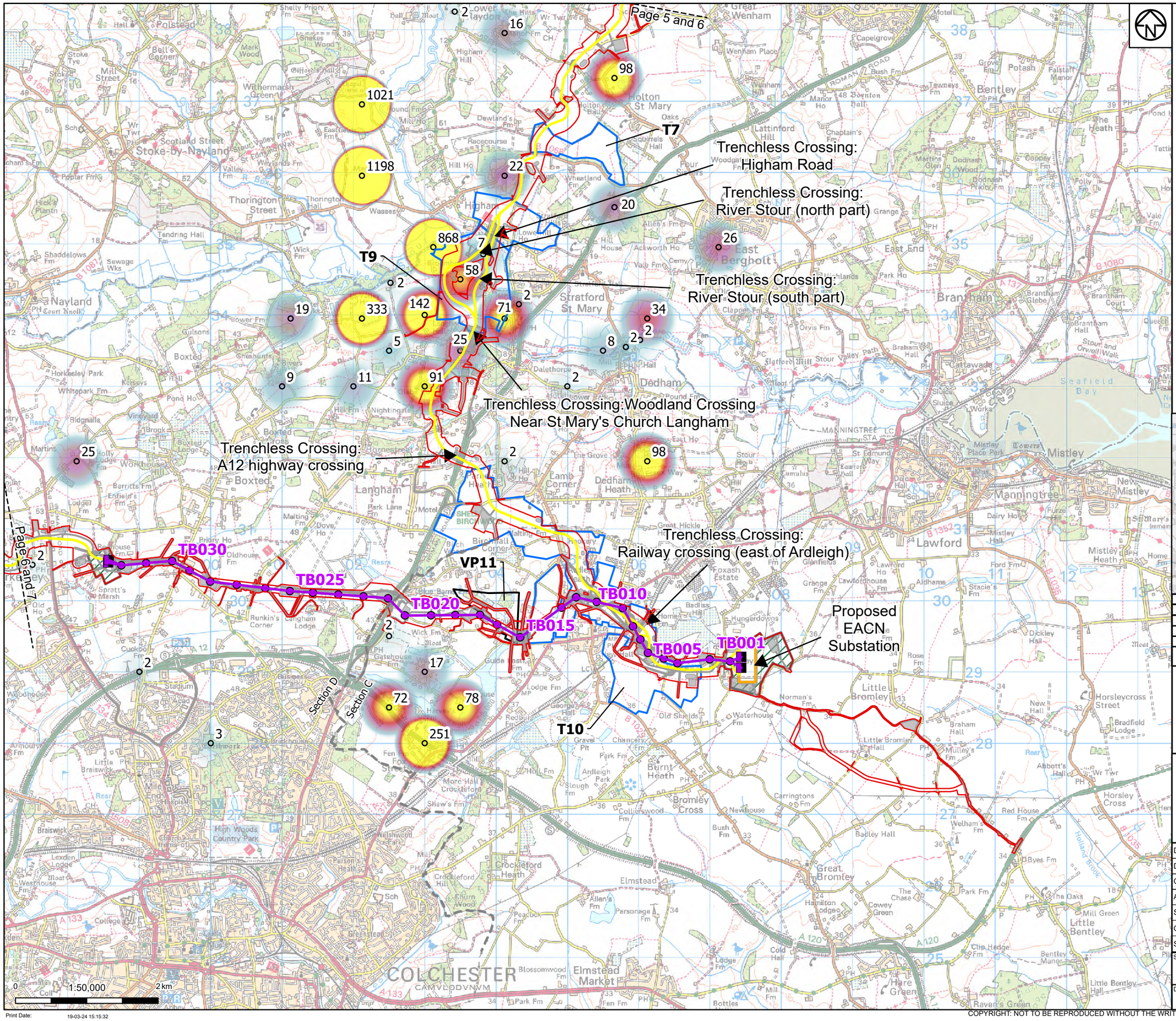
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed EACN substation

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

Sparse

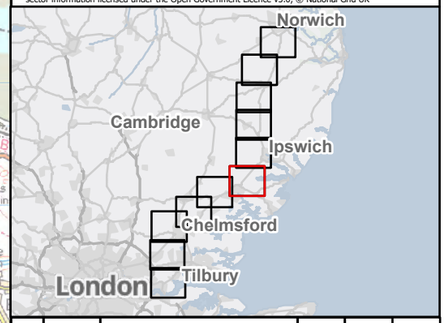
Dense

Transect (T)

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records

Page 6 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
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Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

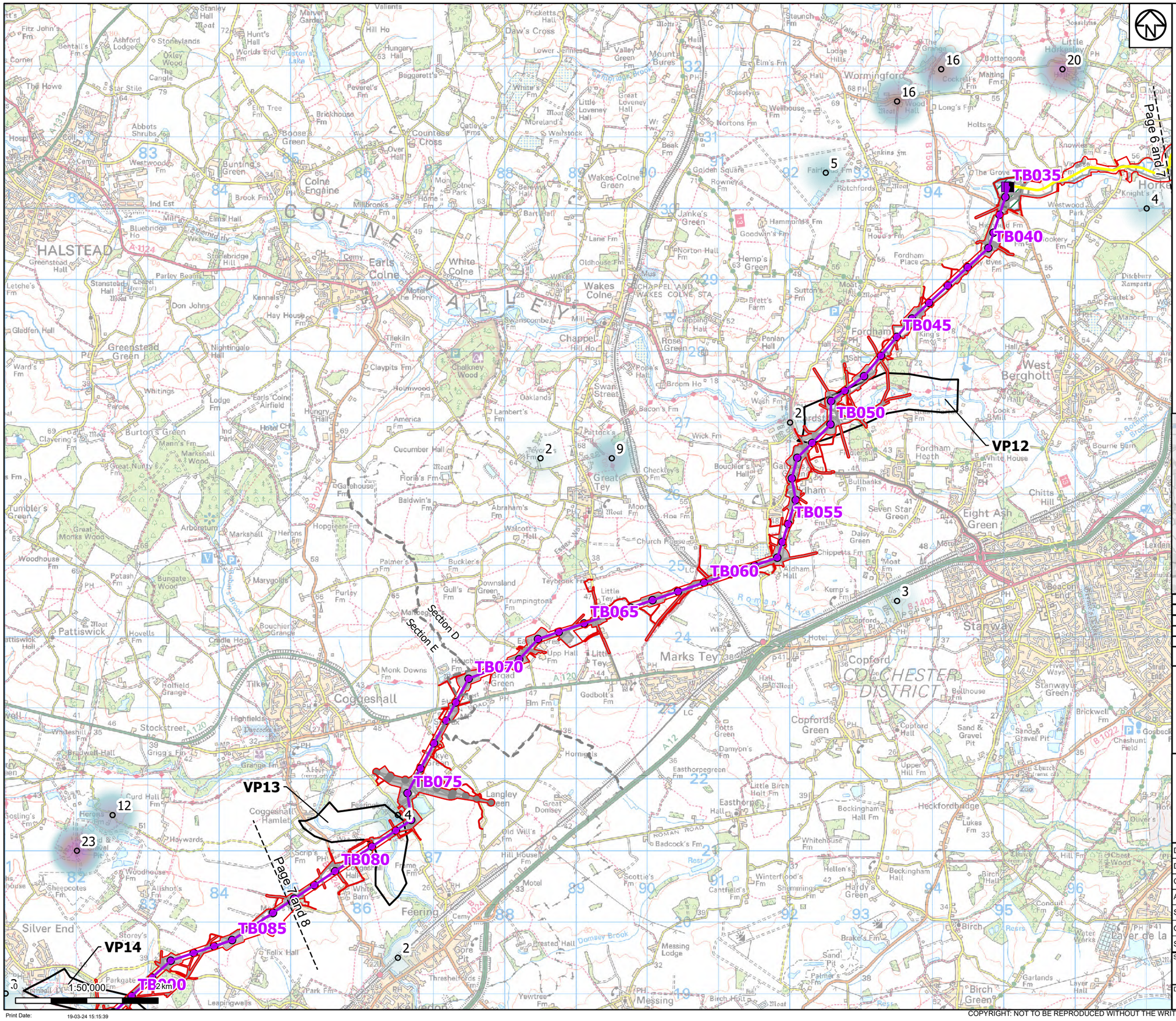
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

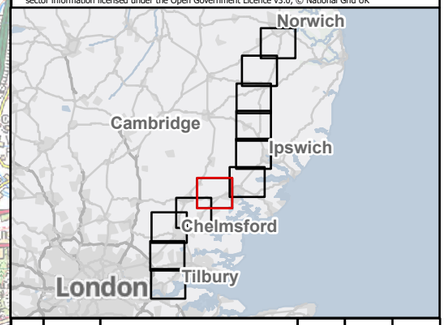
Sparse

Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title: Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Page 7 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

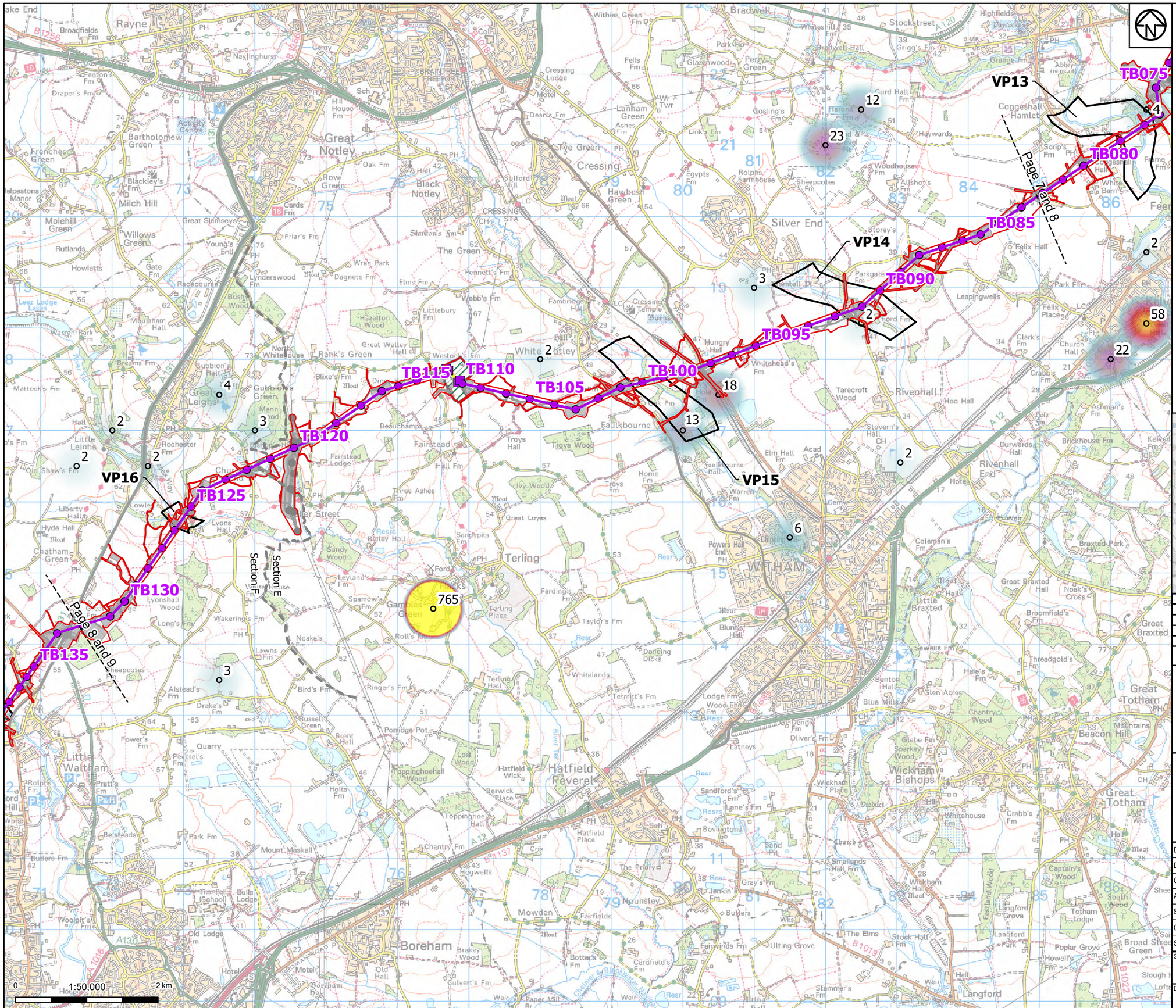
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

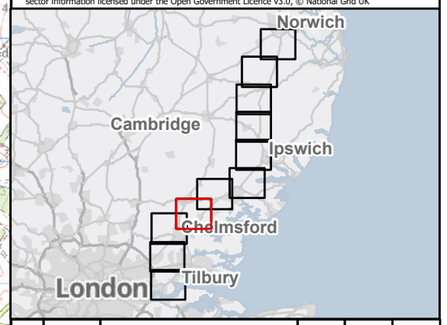
Sparse

Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records
Page 8 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:

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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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TB130
TB135
TB140
TB145
TB150
TB155
TB160
TB165
TB170
TB175
TB180
VP17
Page 8 and 9
Page 9 and 10
Section F
Section E
Section F
Section G
23
2
3
6
2
21
85
4
4
90
Draft order limits
Project sections
Proposed project design details
Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works
Discipline specific constraints
Other assemblage species count
The numbers on map signify the number of species records represented by each cluster.
Qualifying features density
Sparse
Dense
Vantage Point (VP) (2022/2023)
Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.
Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London
0
1:50,000
2 km
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PROJECT: Norwich to Tilbury

Title:
Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records
Page 9 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151
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Page 9 and 10

TB185

TB190

TB195

TB200

TB205

TB210

TB215

TB220

TB225

VP18

19

7

3

2

2

2

2

Section G

Section H

Page 10 and 11

0 1:50,000 2km

Print Date: 19-03-24 15:15:56

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

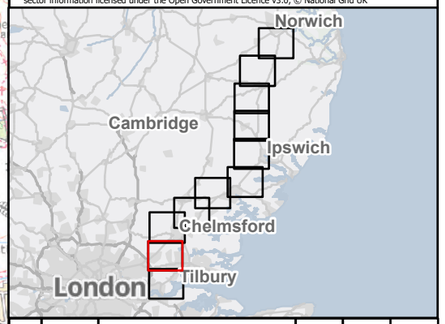
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Dense

Vantage Point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records
Page 10 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
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Suitability Code:	A2	Project Number:	10059280

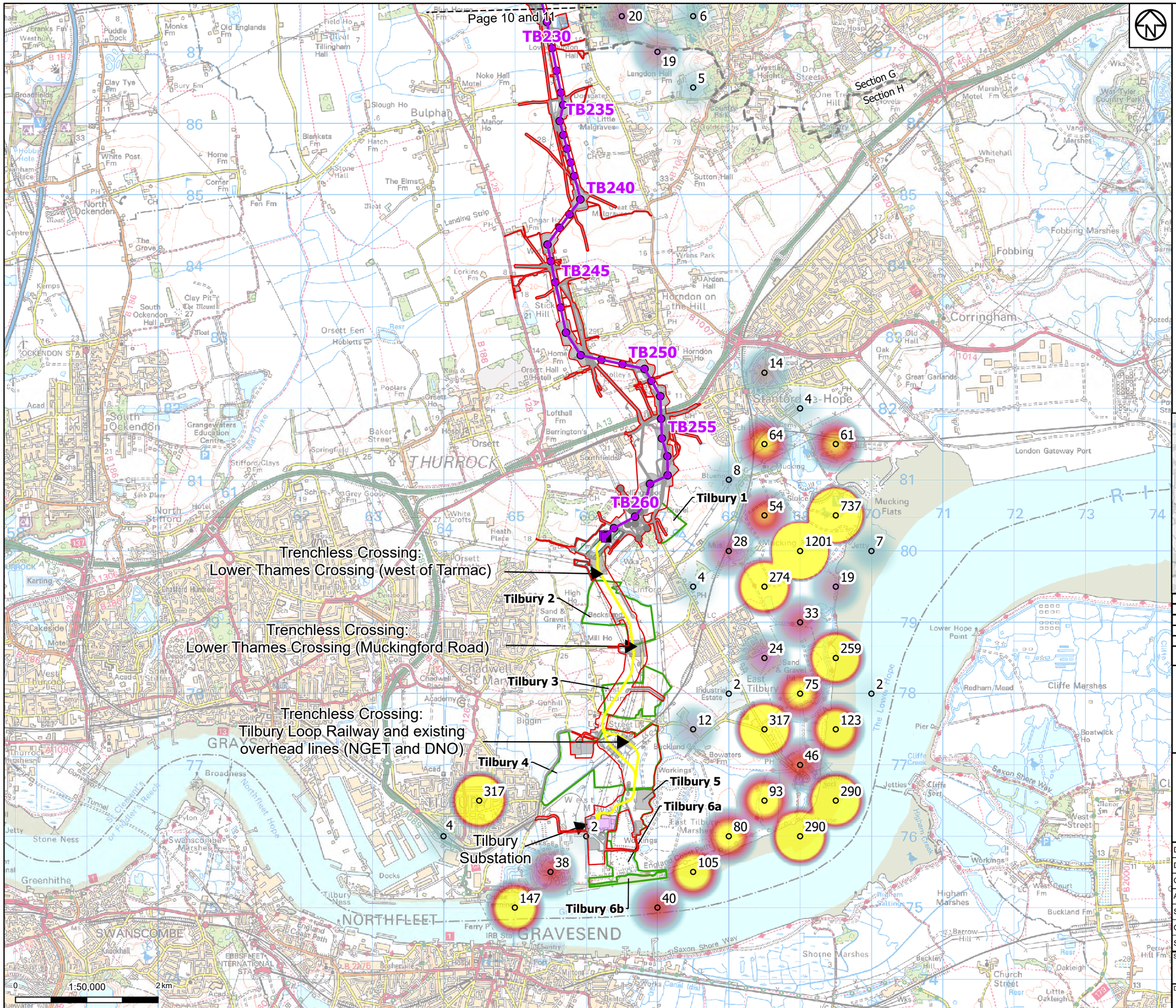
Suitability Description:

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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other assemblage species count

The numbers on map signify the number of species records represented by each cluster.

Qualifying features density

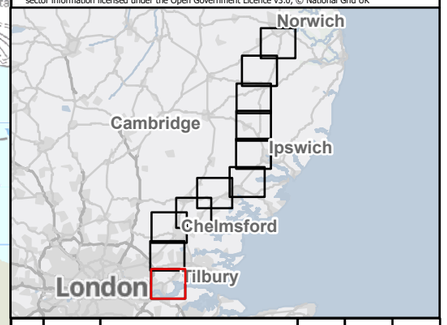
Sparse

Dense

Vantage Point (VP) (2023/2024)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title: Figure A.8.5.3 - Ecology and Biodiversity - National Site Networks/ Ramsar Qualifying Features Data Search Records Page 11 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

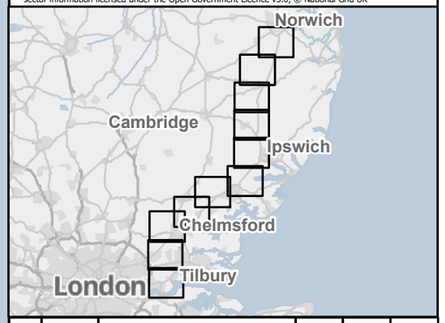
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Figure A8.5.4: Other NSN/ Ramsar Listed Waterbird Species Data Search Records

Pages

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Overview

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:500,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151
Revision: A

0 1:500,000 20 km

Print Date: 19-03-24 15:19:18

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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

RG025

RG030

RG035

VP1

3

2

6

2

Page 1 and 2

0 1:50,000 2 km

Print Date: 19-03-24 15:19:28

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

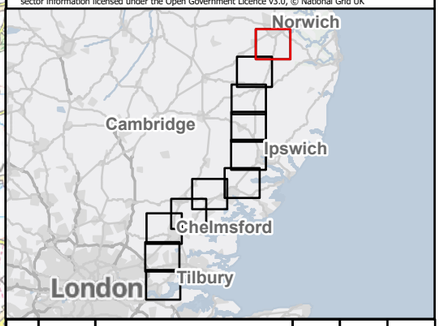
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 1 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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RG040
RG045
RG050
VP2
RG055
RG060
RG065
RG070
RG075
RG080
RG085
VP3
Waveney Valley Overhead Line
8
33
Page 1 and 2
Page 2 and 3
0 1:50,000 2km
Print Date: 19-03-24 15:19:33

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

Sparse
Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London

Rev	Date	Description	Drawn	Check	Approv
A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 2 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151 Revision: A

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Page 2 and 3

Section A

Section B

RG090

RG095

RG100

RG105

RG110

RG115

RG120

RG125

RG130

VP4

Page 3 and 4

0 1:50,000 2 km

Print Date: 19-03-24 15:19:39

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

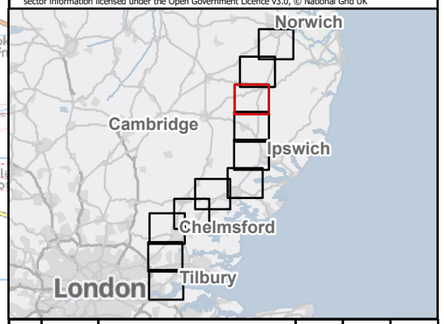
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 3 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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RG060
RG065
RG070
RG075
RG080
RG85
RG90
RG095
RG100
RG105
RG110
Waveney Valley Alternative
VP3
Trenchless Crossing:
Waveney Valley Alternative
(north channel)
Trenchless Crossing:
Waveney Valley Alternative
(south channel)
Section A
Section B
8
33
2
5
3
10

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Vantage point (VP) (2022/2023)

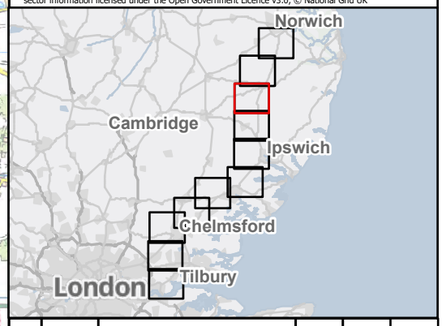
Data search record density

Sparse

Dense

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 3a of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151
Revision: A

0 1:50,000 2 km

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Page 3 and 4

RG135

RG140

RG145

RG150

RG155

RG160

RG165

RG170

RG175

RG180

Page 4 and 5

VP5

MID SUFFOLK DISTRICT

STOWMARKET

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

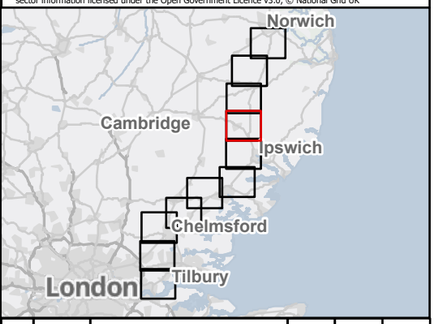
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Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records
Page 4 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
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Suitability Description: Accepted as Concept Stage

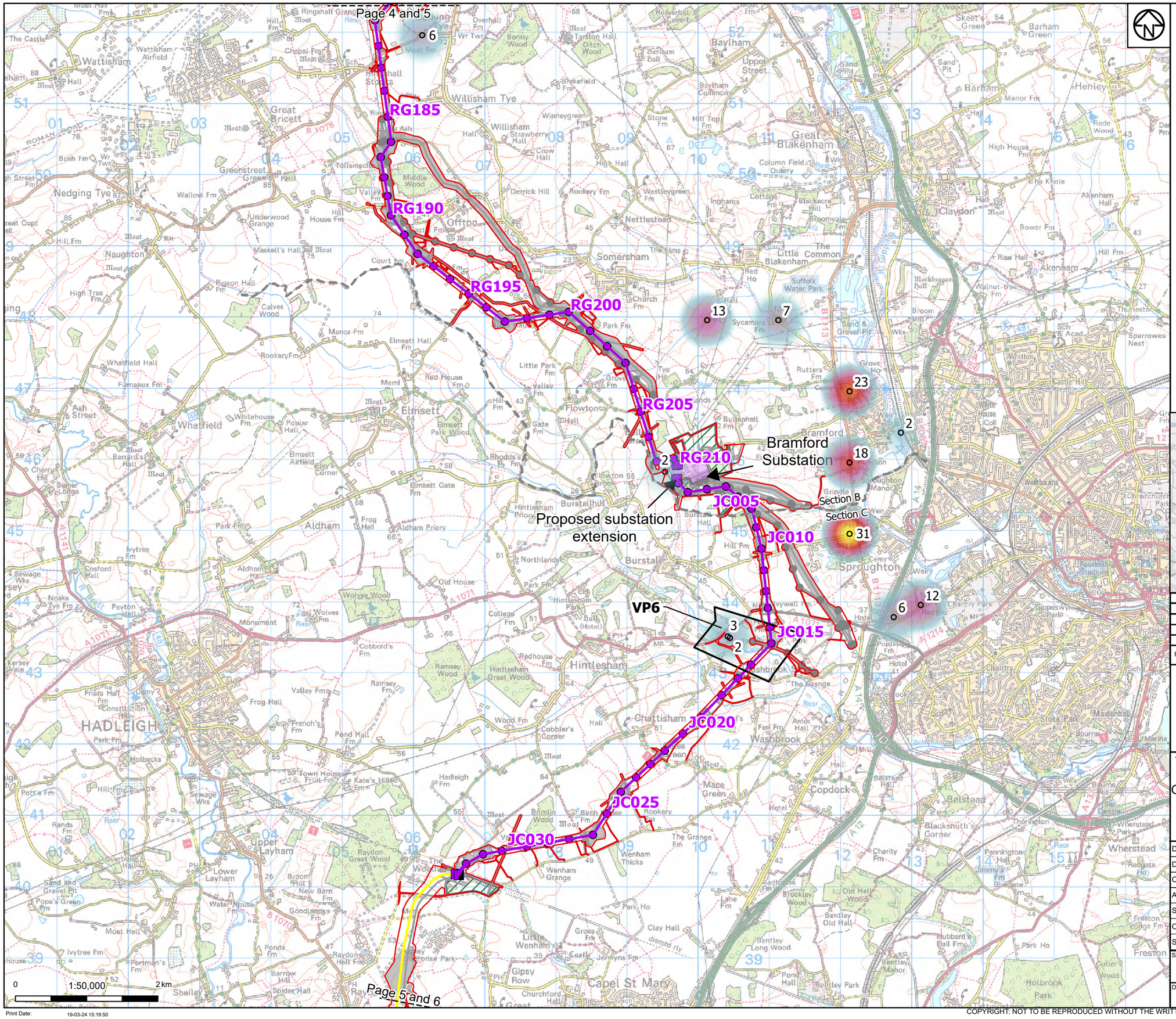
Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Existing substation
Proposed substation extension
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

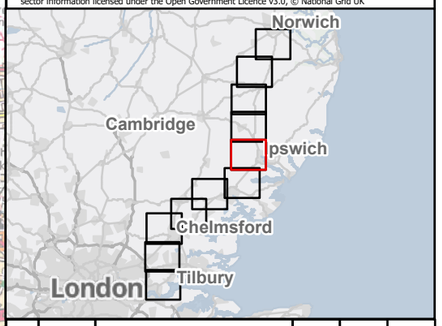
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Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records
Page 5 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

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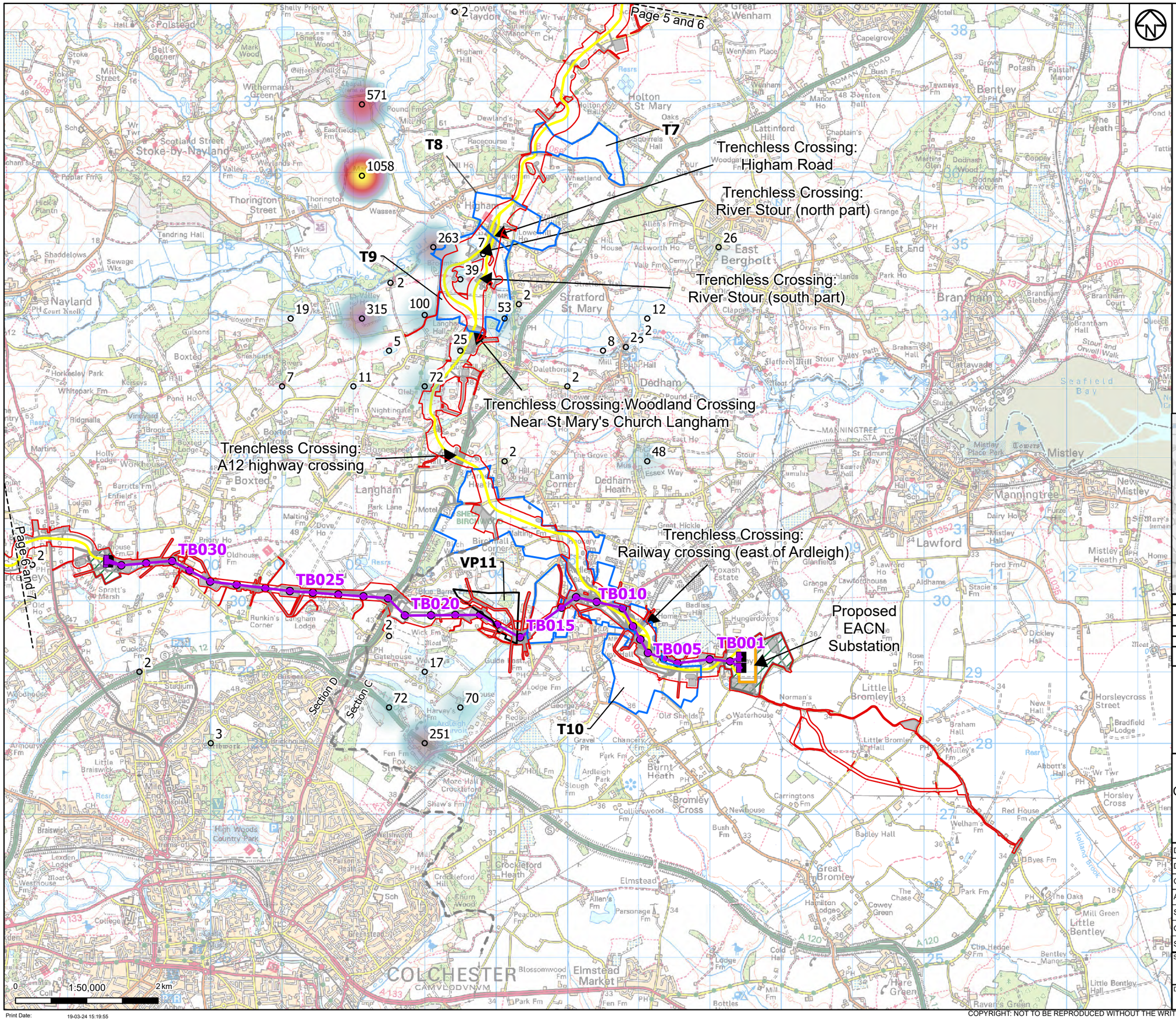
Accepted as Concept Stage

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed EACN substation

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

Sparse

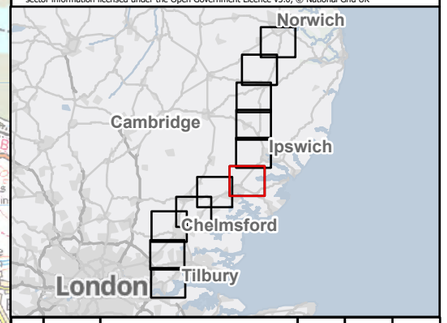
Dense

Transect (T)

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records
Page 6 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

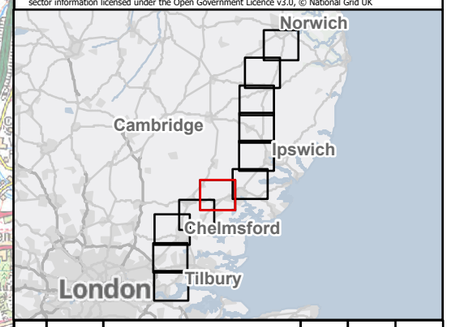
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 7 of 11

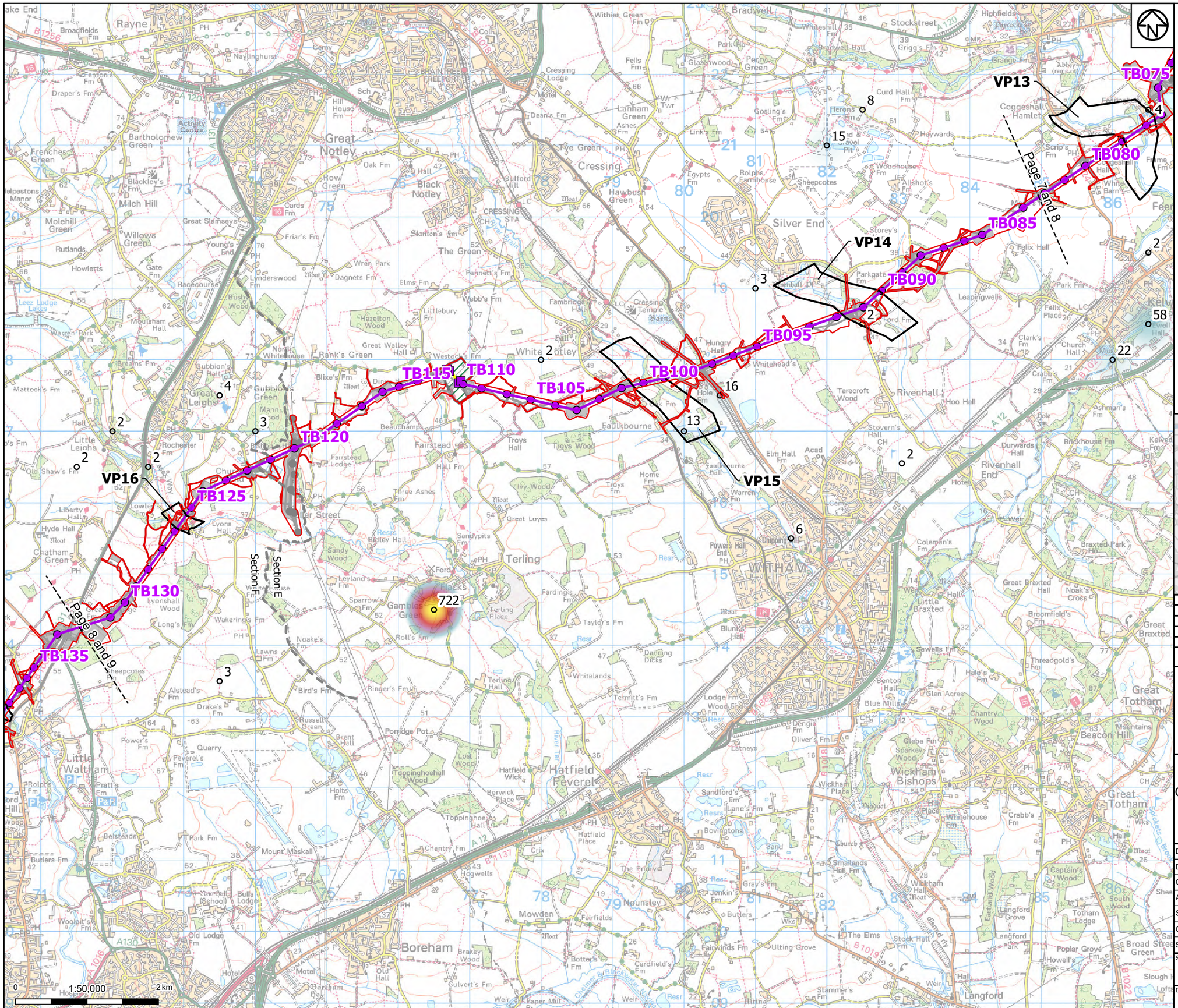
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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151
Revision: A

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Draft order limits

Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed low duty gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 8 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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TB130
TB135
TB140
TB145
TB150
TB155
TB160
TB165
TB170
TB175
TB180
VP17
Section E
Section F
Section G
Page 8 and 9
Page 9 and 10
23
2
3
6
2
21
62
4
4
76

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

Sparse
Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London

0 2 km
1:50,000

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Norwich to Tilbury

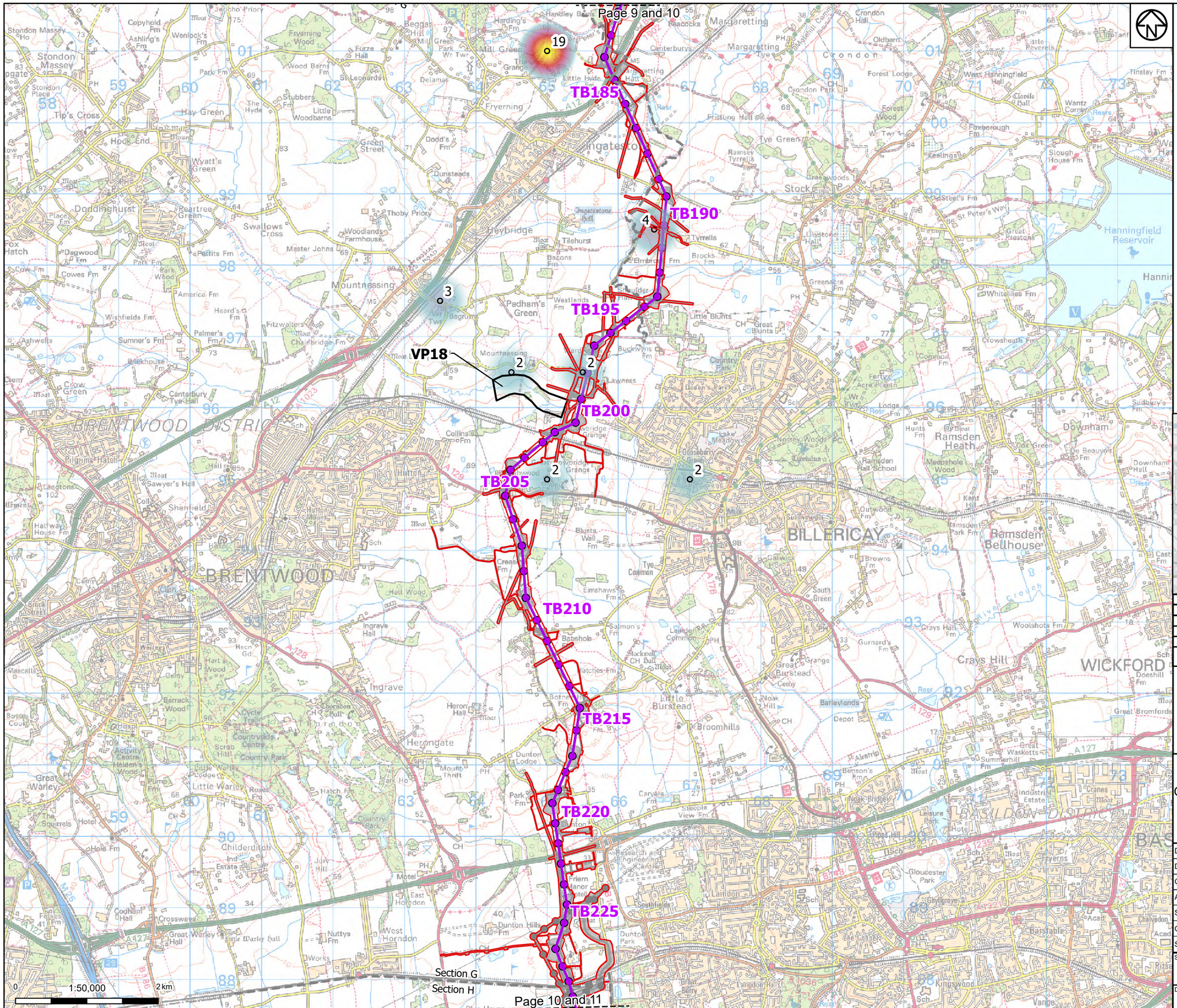
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Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records
Page 9 of 11

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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

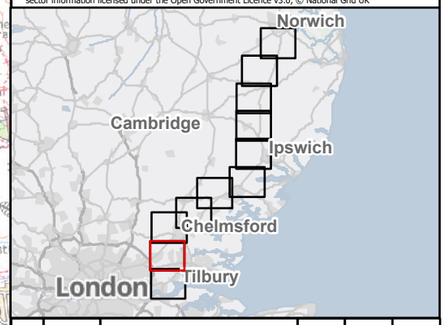
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Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 10 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
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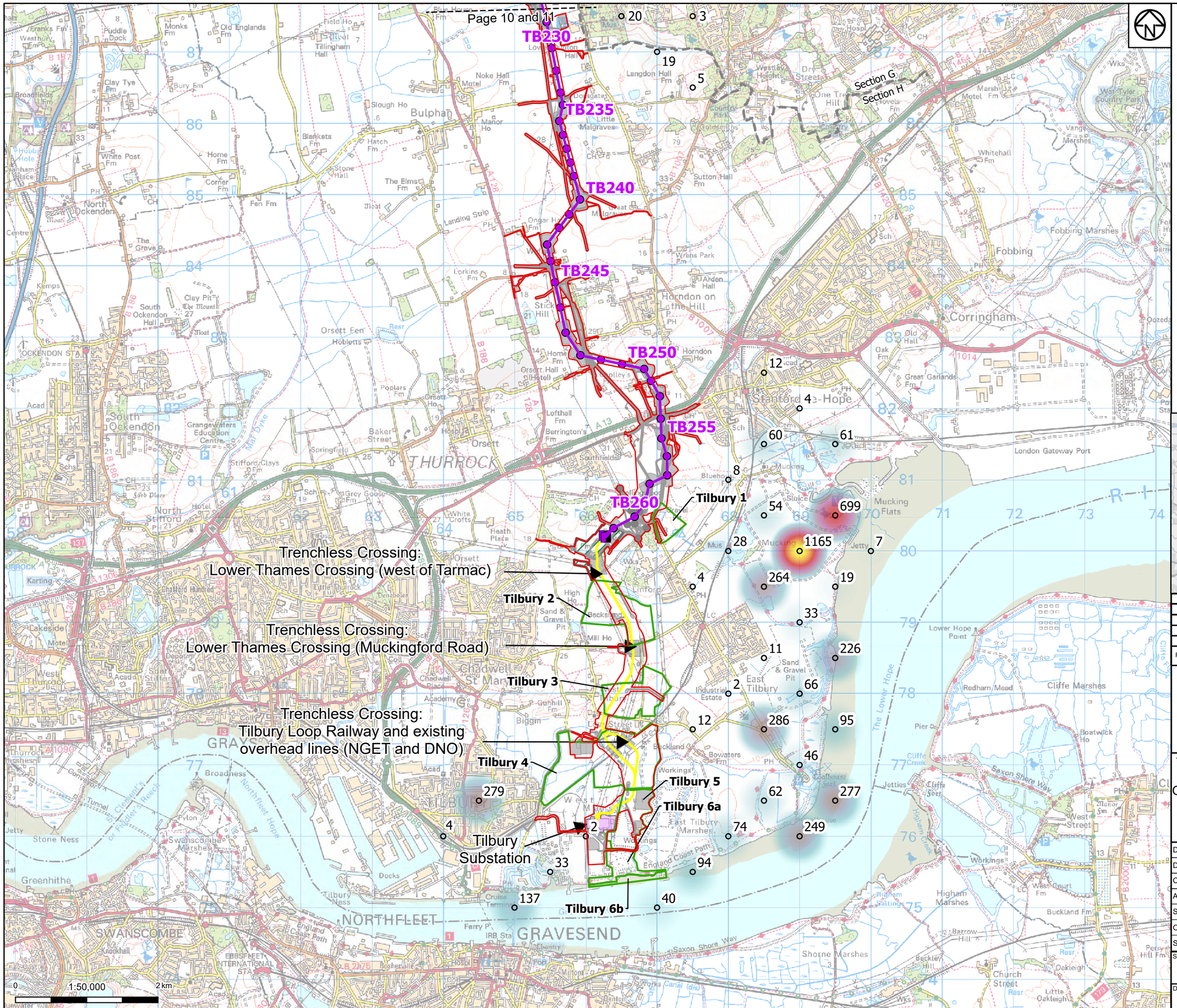
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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Other listed species count

The numbers on map signify the number of species records represented by each cluster.

Data search record density

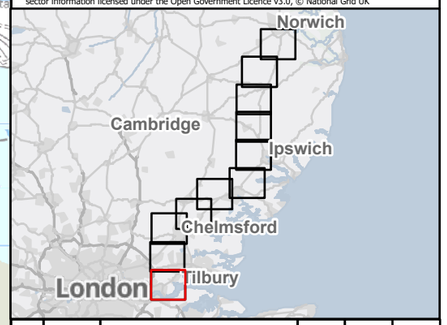
Sparse

Dense

Vantage point (VP) (2023/2024)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title: Figure A.8.5.4 - Ecology and Biodiversity - Other National Site Networks/ Ramsar Listed Waterbird Species Data Search Records Page 11 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
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Suitability Description: Accepted as Concept Stage

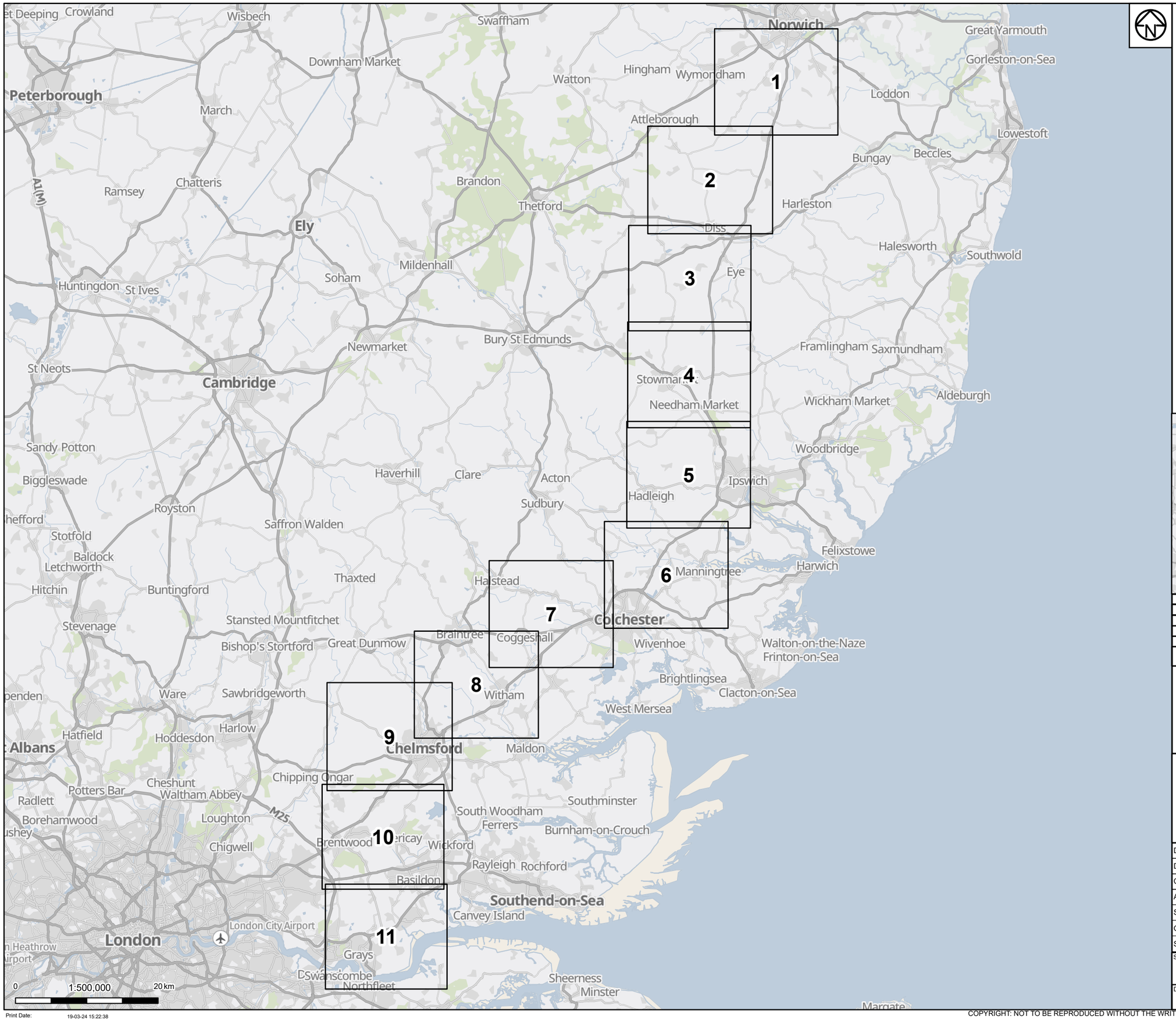
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Figure A8.5.5: Lapwing and Golden Plover Data Search Records



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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover Overview

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:500,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

RG025

RG030

RG035

2515

1200

3000

VP1

Page 1 and 2

0 1:50,000 2km

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Existing substation
- Proposed substation extension
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Species record point count

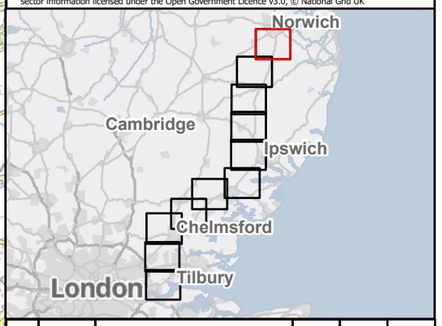
  The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

- Sparse
- Dense
- Vantage point (VP) (2022/2023)

  Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 1 of 11

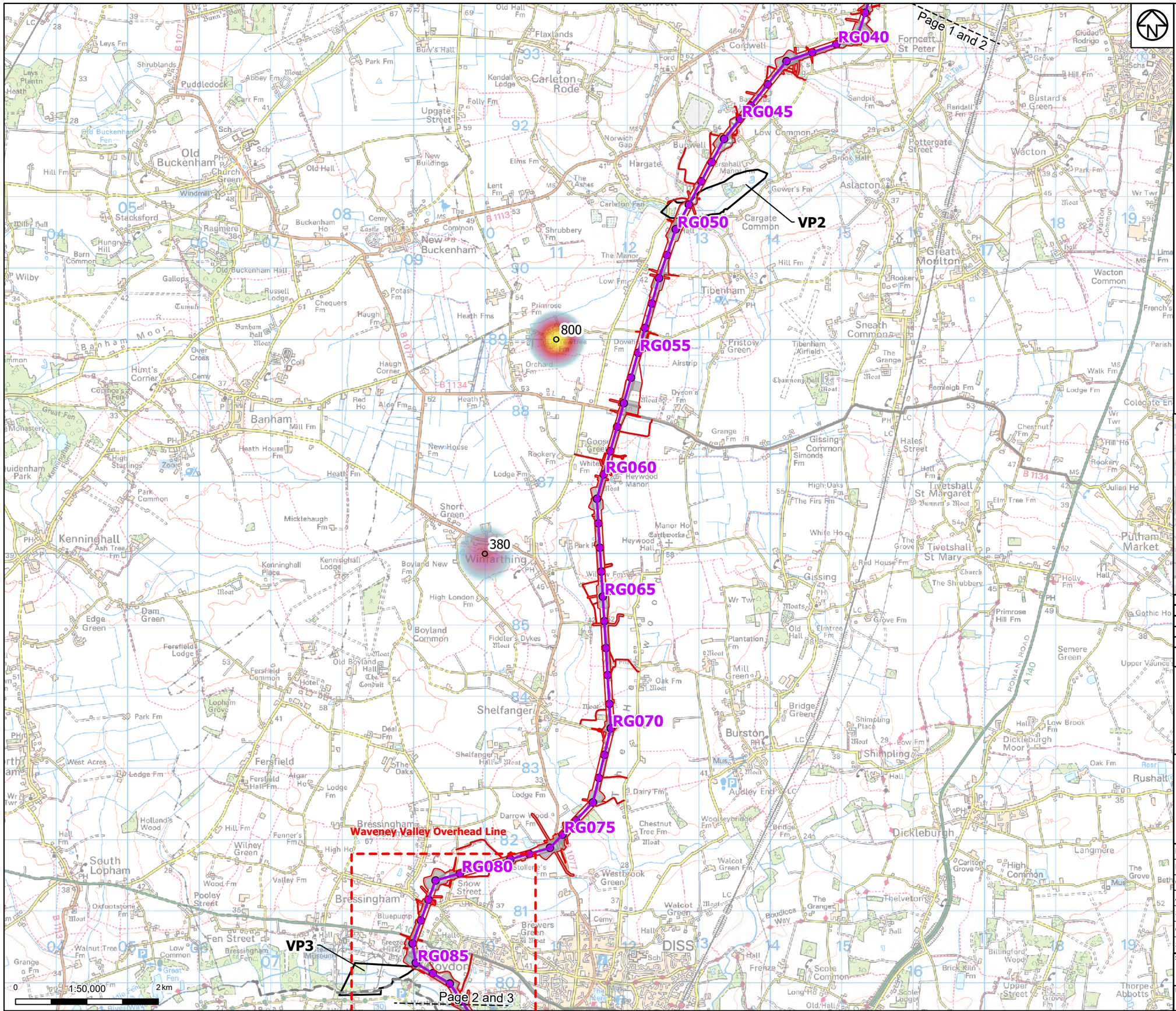
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Drawn	I. Singh	Date	April 2024
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Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

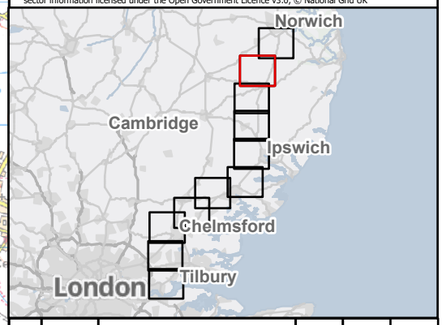
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Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 2 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
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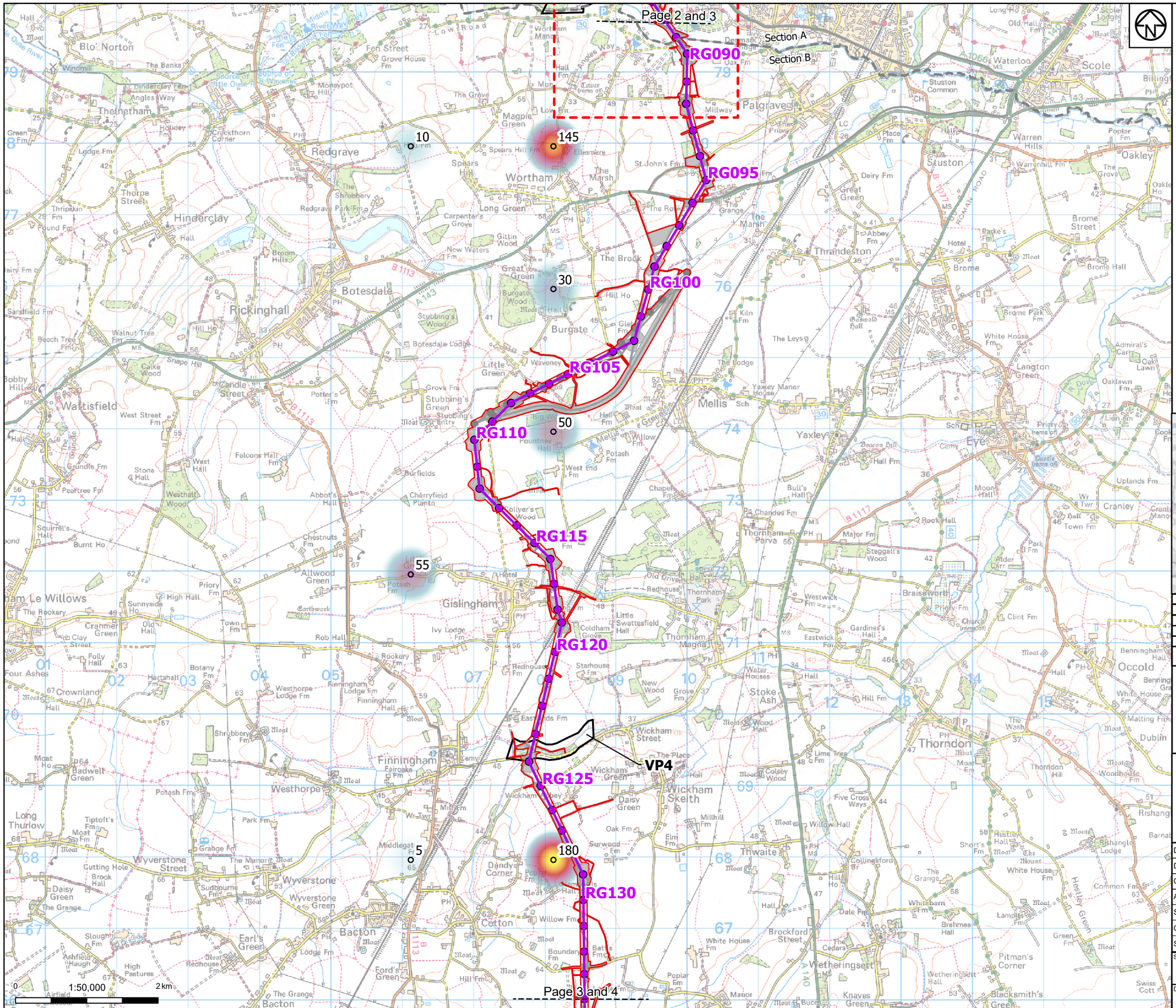
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Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

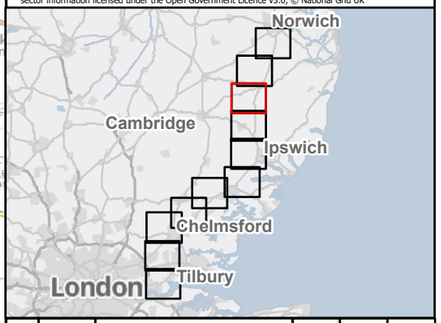
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 3 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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RG060
RG065
RG070
RG075
RG080
RG085
RG90
RG095
RG100
RG105
RG110
380
145
30
10
50
VP3
Waveney Valley Alternative
Trenchless Crossing:
Waveney Valley Alternative
(north channel)
Trenchless Crossing:
Waveney Valley Alternative
(south channel)
Section A
Section B

0 1:50,000 2 km

Print Date: 19-03-24 15:20:29

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

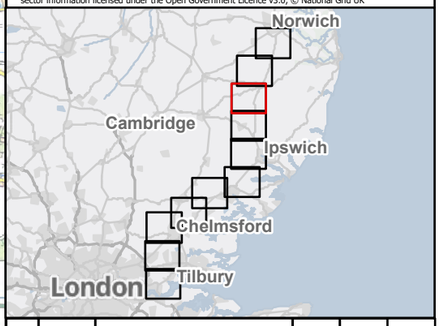
Lapwing and golden plover density

Sparse
Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

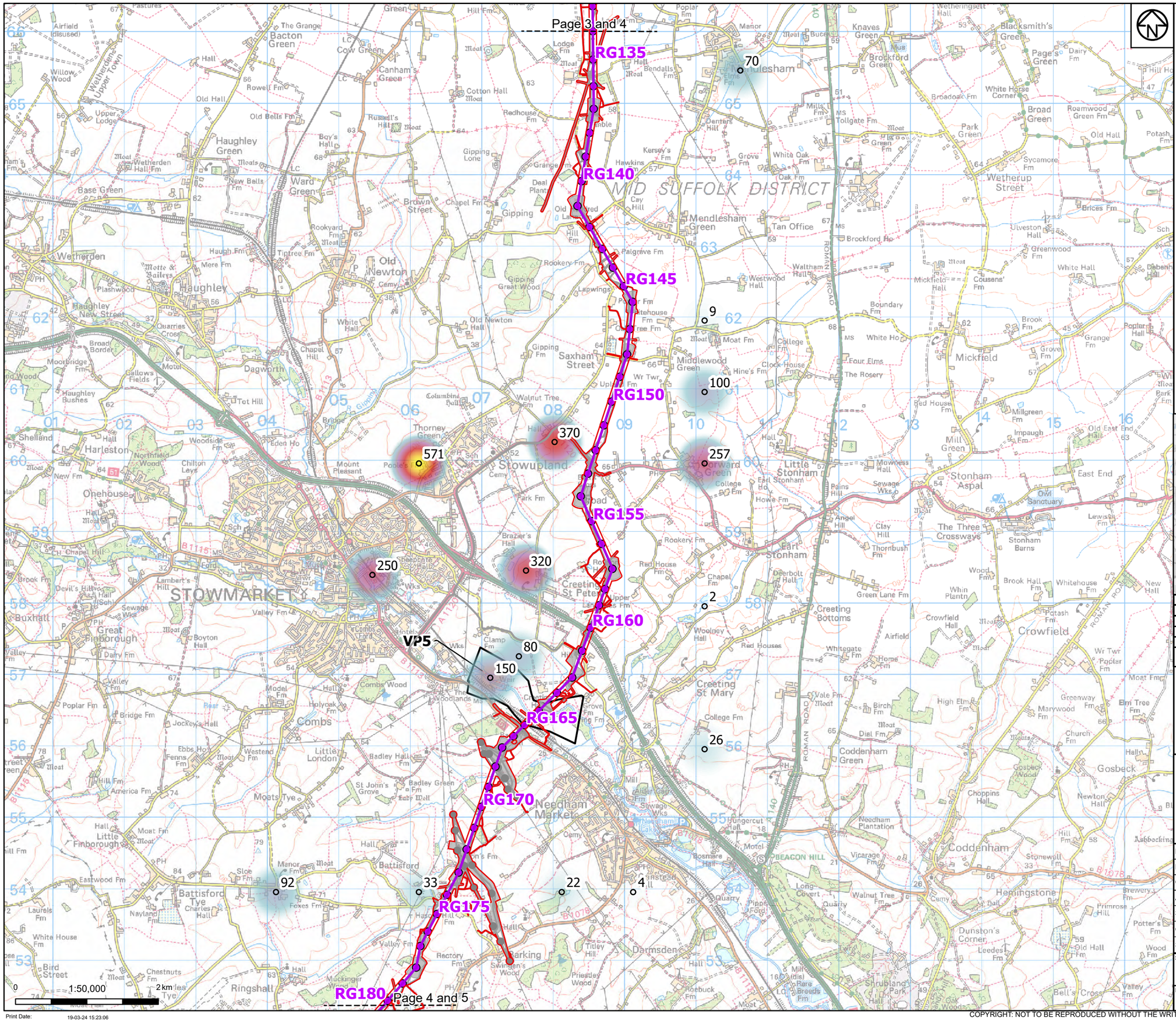
Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 3a of 11

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Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 4 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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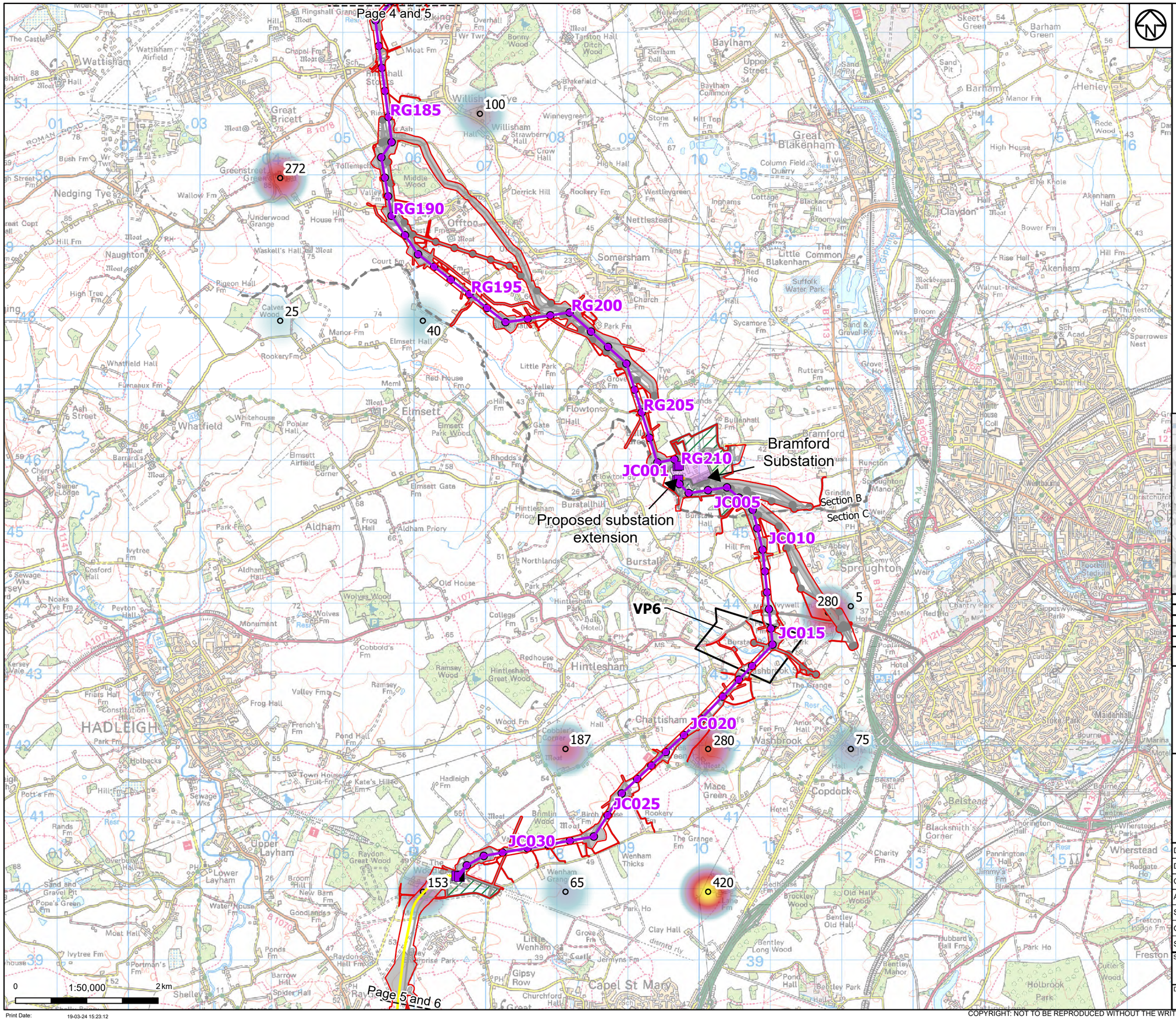
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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Existing substation
Proposed substation extension
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

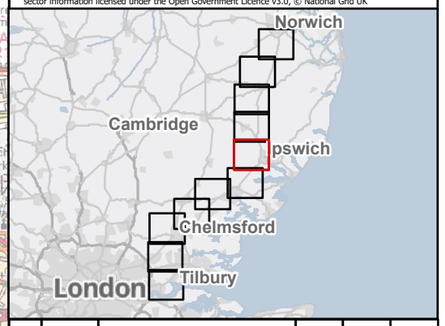
Lapwing and golden plover density

Sparse
Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 5 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

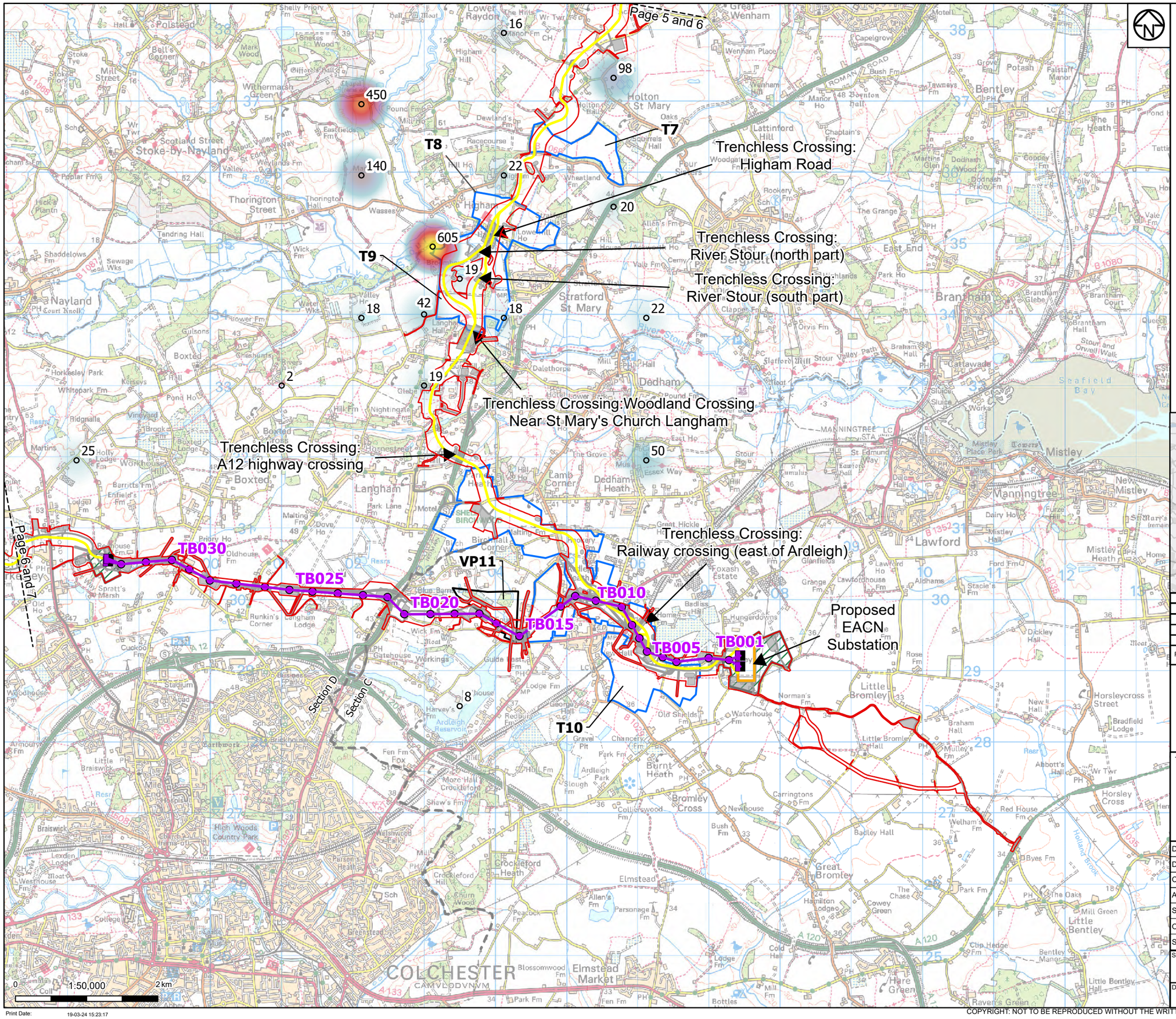
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

Revision: A

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed EACN substation
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Species record point count

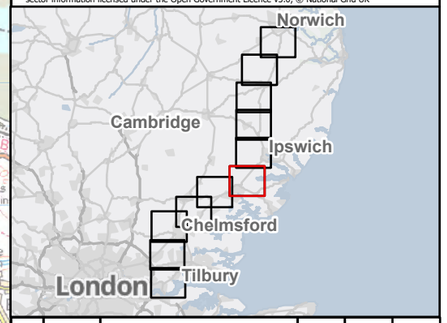
  The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

- Sparse
- Dense
- Transect (T)
- Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 6 of 11

Designed	E. Pickering	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

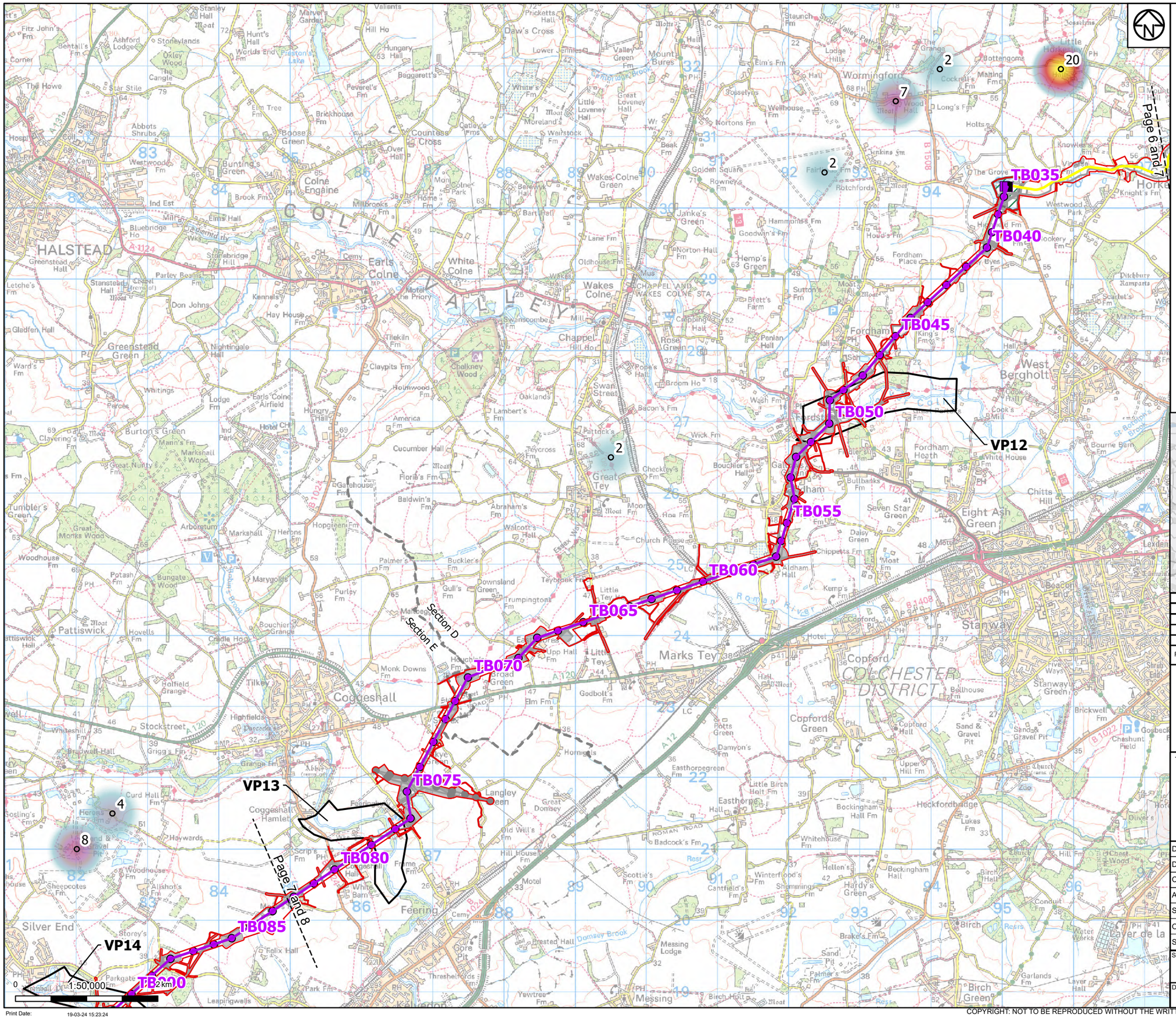
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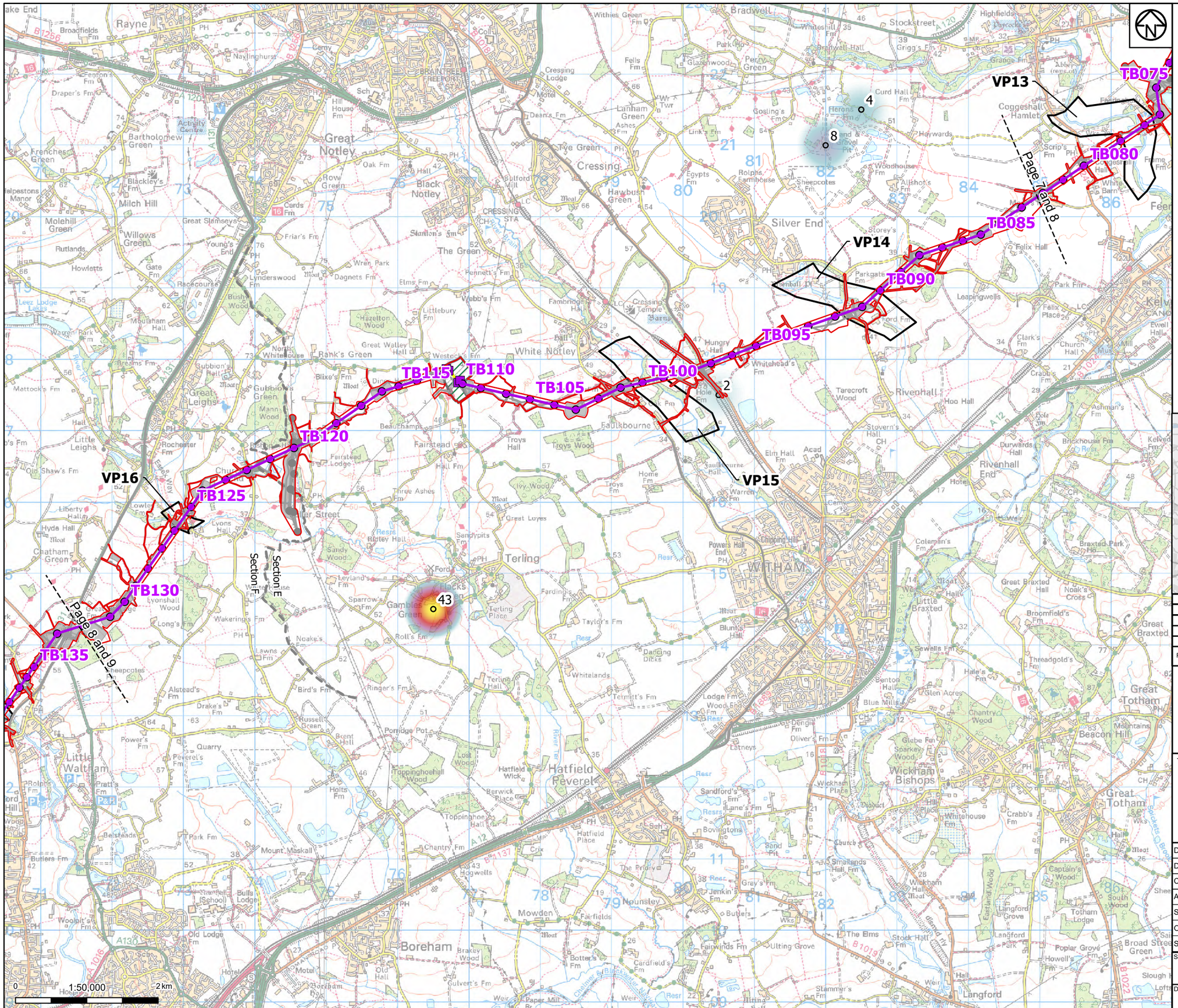
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TB035
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TB075
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TB085
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VP12
VP13
VP14
Page 6 and 7
Page 7 and 8
Section D
Section E
COLNE VALLEY
CHAPPEL AND WAKES COLNE STA
COLCHESTER DISTRICT
HALSTEAD
Coggeshall
Marks Tey
Wakes Colne
Chappel
Great Tey
Feering
Silver End
Earls Colne
White Colne
Colne Engaine
Greenstead Green
Fordham
Wormingford
Stanway
Eight Ash Green
West Berghott
Fordham Heath
Copford
Copford Green
Easthorpe
Langley
Pattiswick
Gosling's Fm
Herons Fm
Curd Hall Fm
Sand & Gravel Pit
Woodhouse Fm
Sheepcotes Fm
Allshot's Fm
Haywards
Scrip's Fm
Felix Hall
Parkgate
Leapingwells
Park Fm
Gore Pit
Messing Lodge
Messing
Birch Green
Layer de la Haye
Layer Hall
Birch
Brake's Fm
Sand Pit
Palmer's Fm
Garlands Fm
Water Works
Conduit Fm
Bourne Barn Fm
Cook's Mill
Cook Hall
Chest Wood
Birch Hall
Hill Fm
Church (rems of)
Zoo
Cheshunt Field
Gosbeck's Fm
Brickwell Fm
Stanway Green
Five Ways
Shrub End
Bellhouse Fm
Sand & Gravel Pit
Upper Hill Fm
Heckfordbridge
Lukes Fm
Oliver's
Bockingham Hall Fm
Beckingham Hall
Hardy's Green
Shemmings Fm
Winterflood's Fm
Cantfield's Fm
Scottie's Fm
Hellen's
Whitehouse Fm
Badcock's Fm
ROMAN ROAD
Old Will's Fm
Hill House Fm
Great Domsey
Little Birch Holt Fm
Holt Fm
Potts Green
Damyon's Fm
Easthorpegreen Fm
Godbolt's Fm
Elm Fm
Broad Green
Upp Hall Fm
Little Tey
Trumpingtons Fm
Downsland Green
Gull's Fm
Buckler's Fm
Palmer's Fm
Walcott's Hall
Teybrook
Church House
Daisy Green
Chippetts Fm
Aldham Hall
Kemp's Fm
Bullbanks Fm
Seven Star Green
Bouchier's Hall
Pattock's
Swan Street
Oaklands
Lambert's
Bacon's Fm
Broom Ho
Pope's Hall
Rose Green
Penlan Hall
Clapping Hall
Wick Fm
Fairstead Fm
Golden Square
Rowney's Fm
Rotchfords
Jenkins Fm
Josselyns
Nortons Fm
Wellhouse Fm
Long's Fm
Cockrell's Fm
Malting Fm
Bottengoms
Little Horkesley
Horkesley Park
Knowles's
Knight's Fm
Westwood Park
Lookery Fm
Byes Fm
Hood's Fm
Fordham Place
Sutton's Fm
Brett's Farm
Hemp's Green
Goodwin's Fm
Hammond's Fm
Janke's Green
Norton Hall Fm
Lane Fm
Oldhouse Fm
Wakes Hall
Swancombe's Fm
Chalkney Wood
Motel
Tilekiln Fm
Claypits Fm
Holmwood Fm
Lodge Fm
Earls Colne Airfield
Hungry Hall
America Fm
Cucumber Hall
Florie's Fm
Gatehouse Fm
Baldwin's Fm
Abraham's Fm
Moors
Hoe Fm
Church House
Arboretum
Marshall
Herons Fm
Hopgreen Fm
Great Monks Wood
Woodhouse Fm
Potash Fm
Bungate Wood
Purley Fm
Gull's Fm
Marygolds
Cradle Hoo
Bouchiers Grange
Holfield Grange
Monk Downs Fm
Tilkey
Highfields
Stockstreet
Whiteshill
Bradwell Hall
Grigg's Fm
Grange Fm
Abbey (rems of)
Hornells
Kye Green
Langley Green
Coggeshall Hamlet
Motel
Scottie's Fm
Cantfield's Fm
Winterflood's Fm
Shemmings Fm
Hardy's Green
Hellen's
Beckingham Hall



Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 8 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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TB130
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Section F
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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

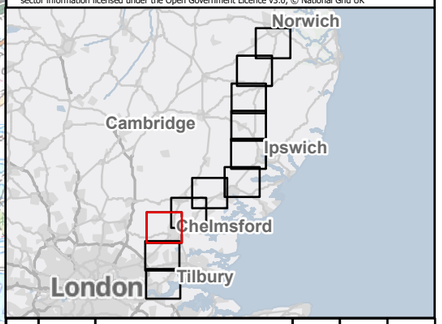
Lapwing and golden plover density

Sparse
Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

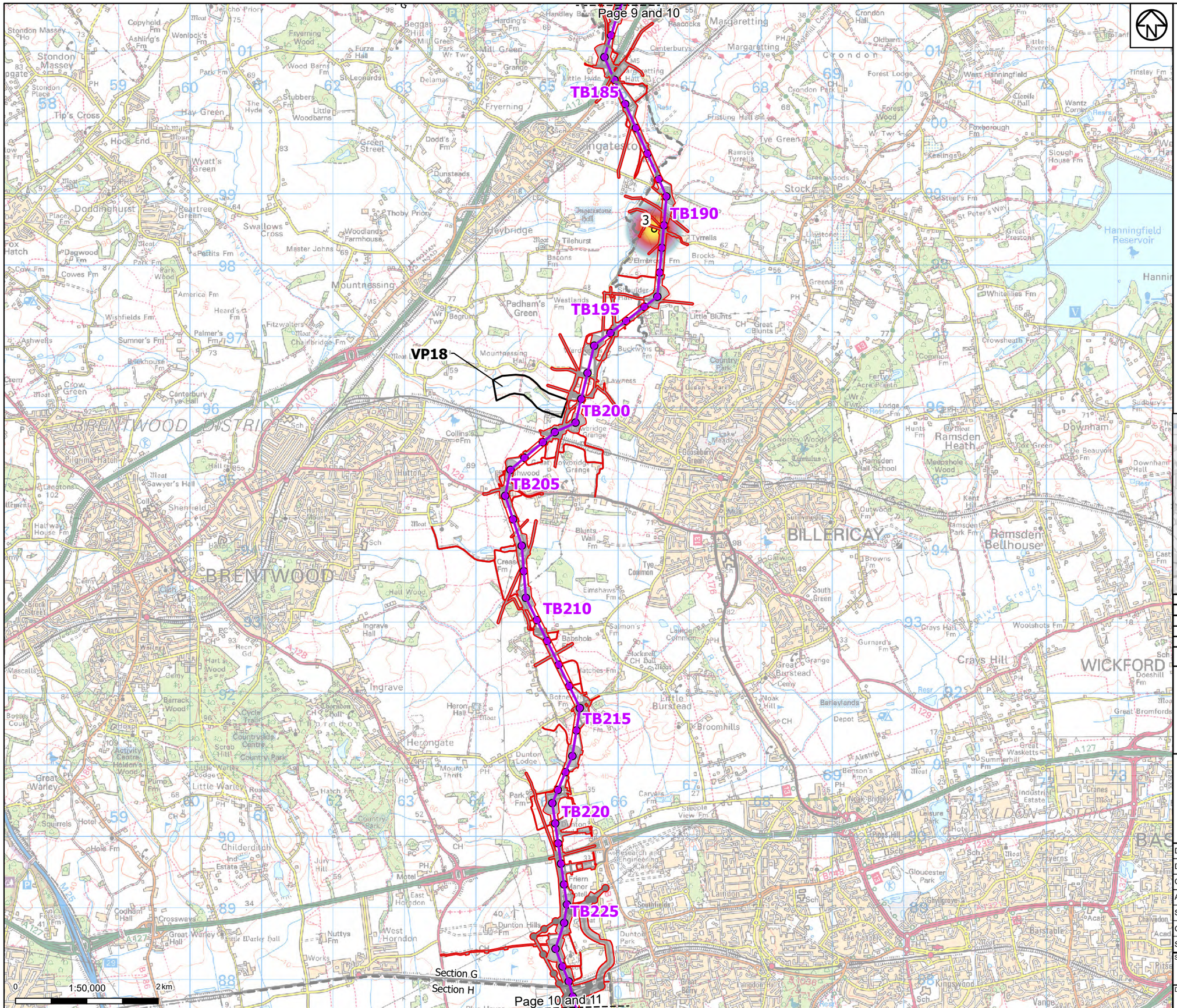
Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 9 of 11

Designed	E. Pickering	Date	April 2024
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Suitability Description:
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

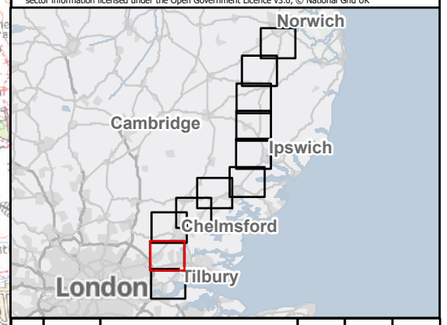
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover
Page 10 of 11

Designed	E. Pickering	Date	April 2024
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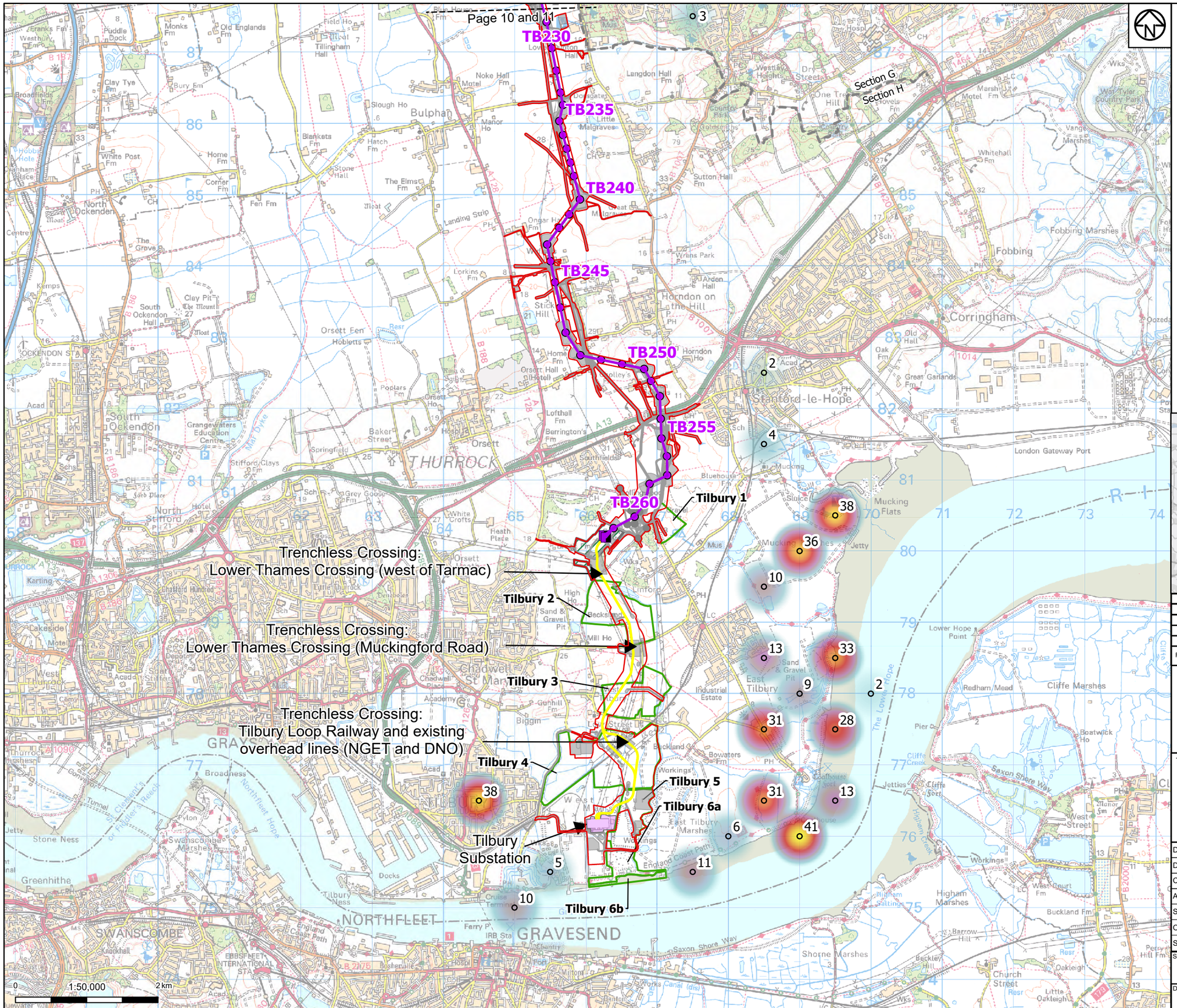
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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Existing substation
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Species record point count

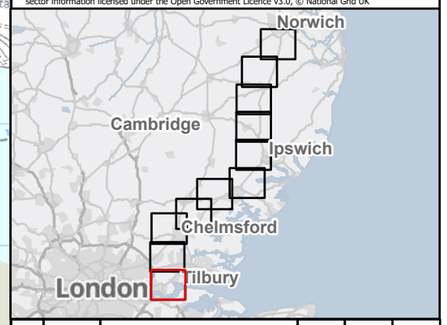
  The numbers on map signify the number of species records represented by each cluster.

Lapwing and golden plover density

- Sparse
- Dense
- Vantage point (VP) (2023/2024)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.5 - Ecology and Biodiversity - Lapwing and Golden Plover

Page 11 of 11

Designed	E. Pickering	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00151

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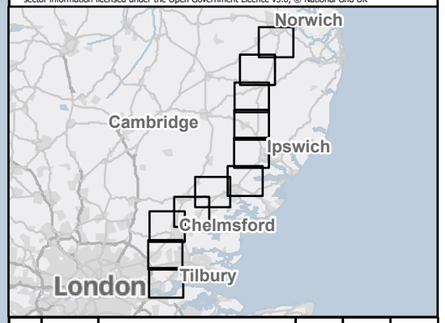
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Figure A8.5.6: Species at Potential Collision Risk Data Search Records

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision Overview

Designed	E. Pickering	Date	April 2024
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Scale:	1:500,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

RG025

RG030

RG035

VP1

2515

1200

3000

3

2

6

2

Page 1 and 2

0 1:50,000 2 km

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
Page 1 of 11

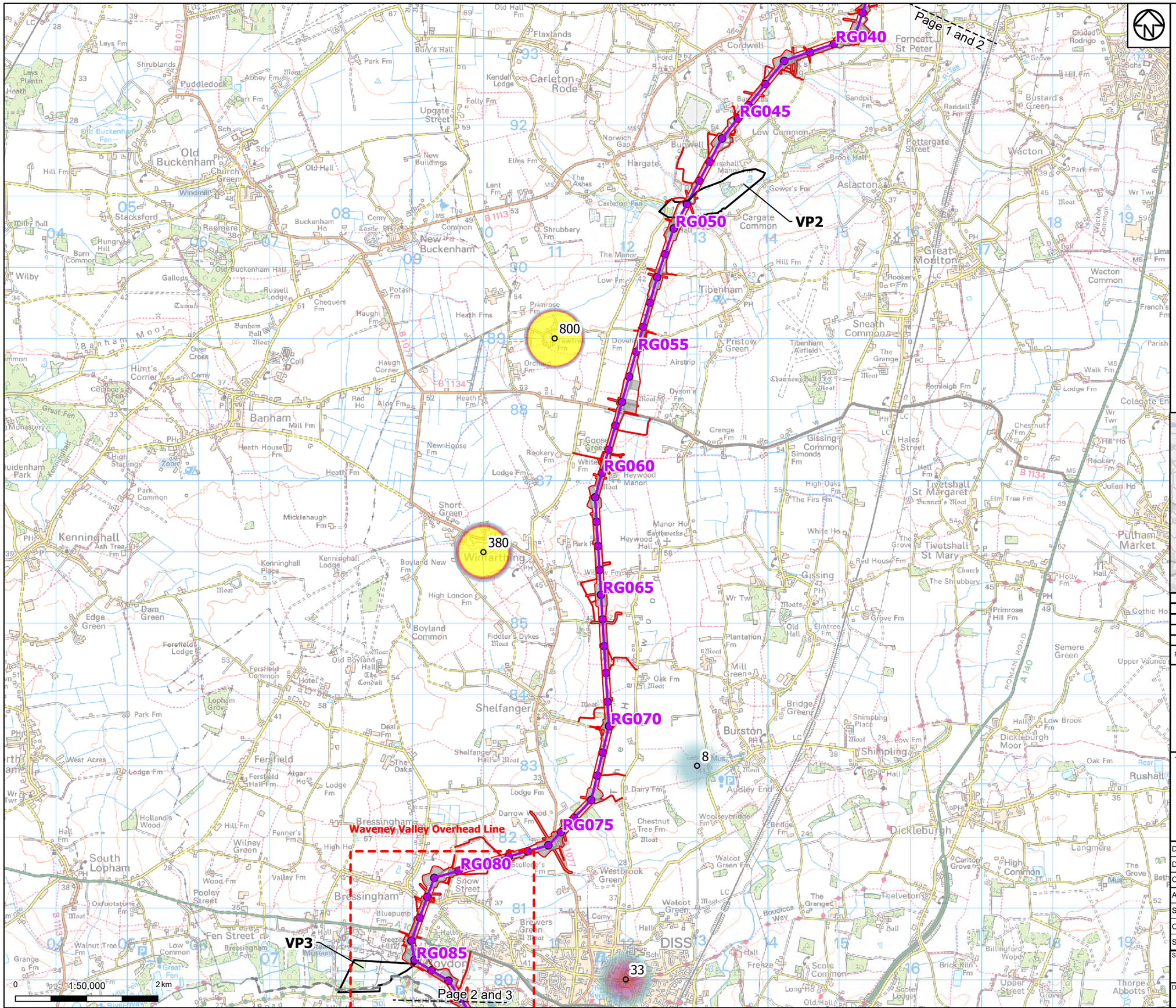
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Proposed pylon position

Discipline specific constraints

Species record point count

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Primary focal species density

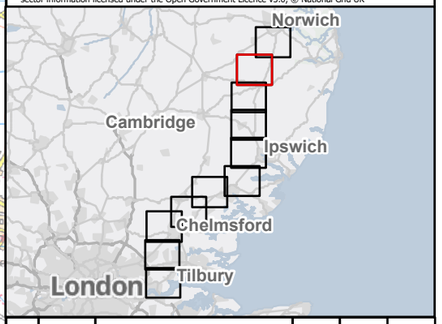
Sparse

Dense

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
Page 2 of 11

Designed	E. Pickering	Date	April 2024
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Approved	K. Burrows	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

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Section B

RG090

RG095

RG100

RG105

RG110

RG115

RG120

RG125

RG130

VP4

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Page 3 and 4

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

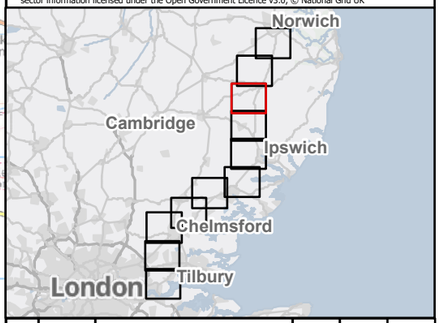
Sparse

Dense

Vantage point (VP) (2022/2023)

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Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
Page 3 of 11

Designed	E. Pickering	Date	April 2024
Drawn	I. Singh	Date	April 2024
Checked	A. Fell	Date	April 2024
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Original Size:	A3	Grid:	OS
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Suitability Description: Accepted as Concept Stage

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RG075
RG080
RG85
RG90
RG095
RG100
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RG110
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30
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Waveney Valley Alternative
VP3
Trenchless Crossing:
Waveney Valley Alternative
(south channel)
Trenchless Crossing:
Waveney Valley Alternative
(north channel)
Section A
Section B
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1:50,000
2 km
Print Date: 19-03-24 15:23:49

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Vantage point (VP) (2022/2023)

Primary focal species density

Sparse

Dense

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Norwich
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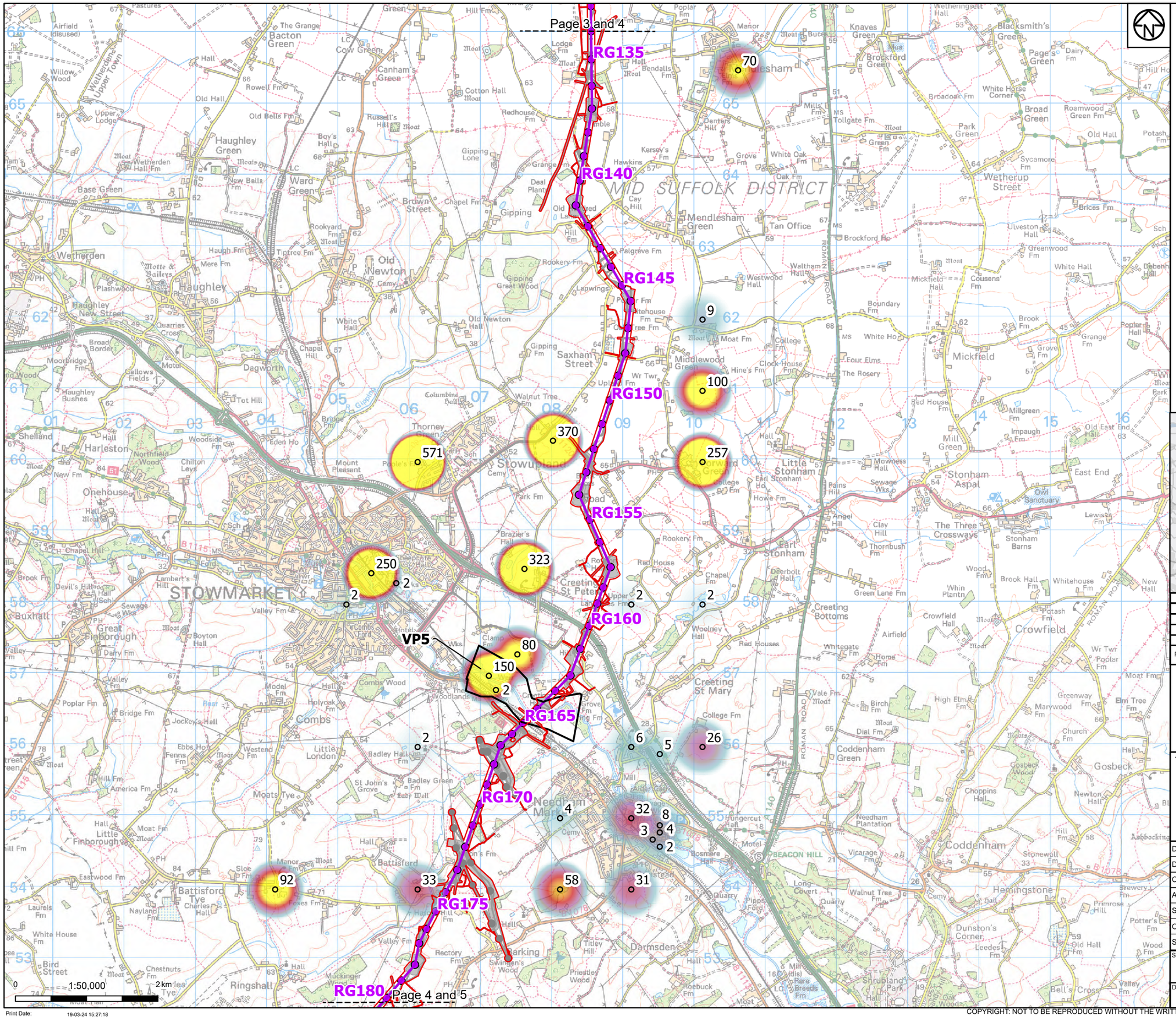
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Discipline specific constraints

Species record point count

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Primary focal species density

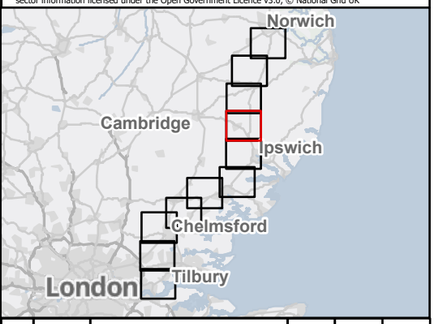
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Dense

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Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
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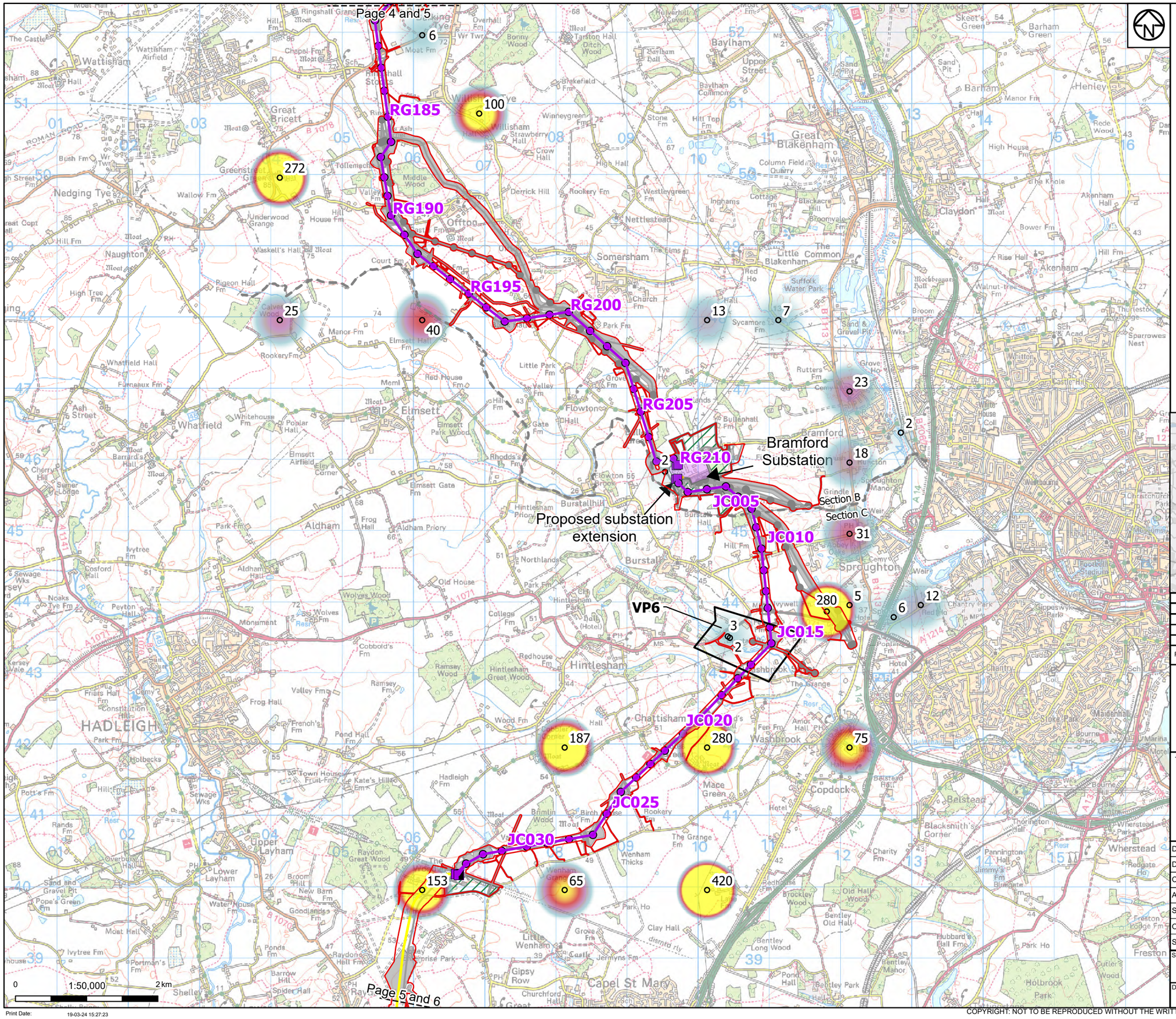
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed substation extension

Proposed cable sealing end compound

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

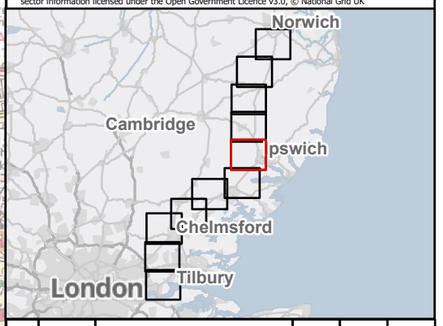
Sparse

Dense

Vantage point (VP) (2022/2023)

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
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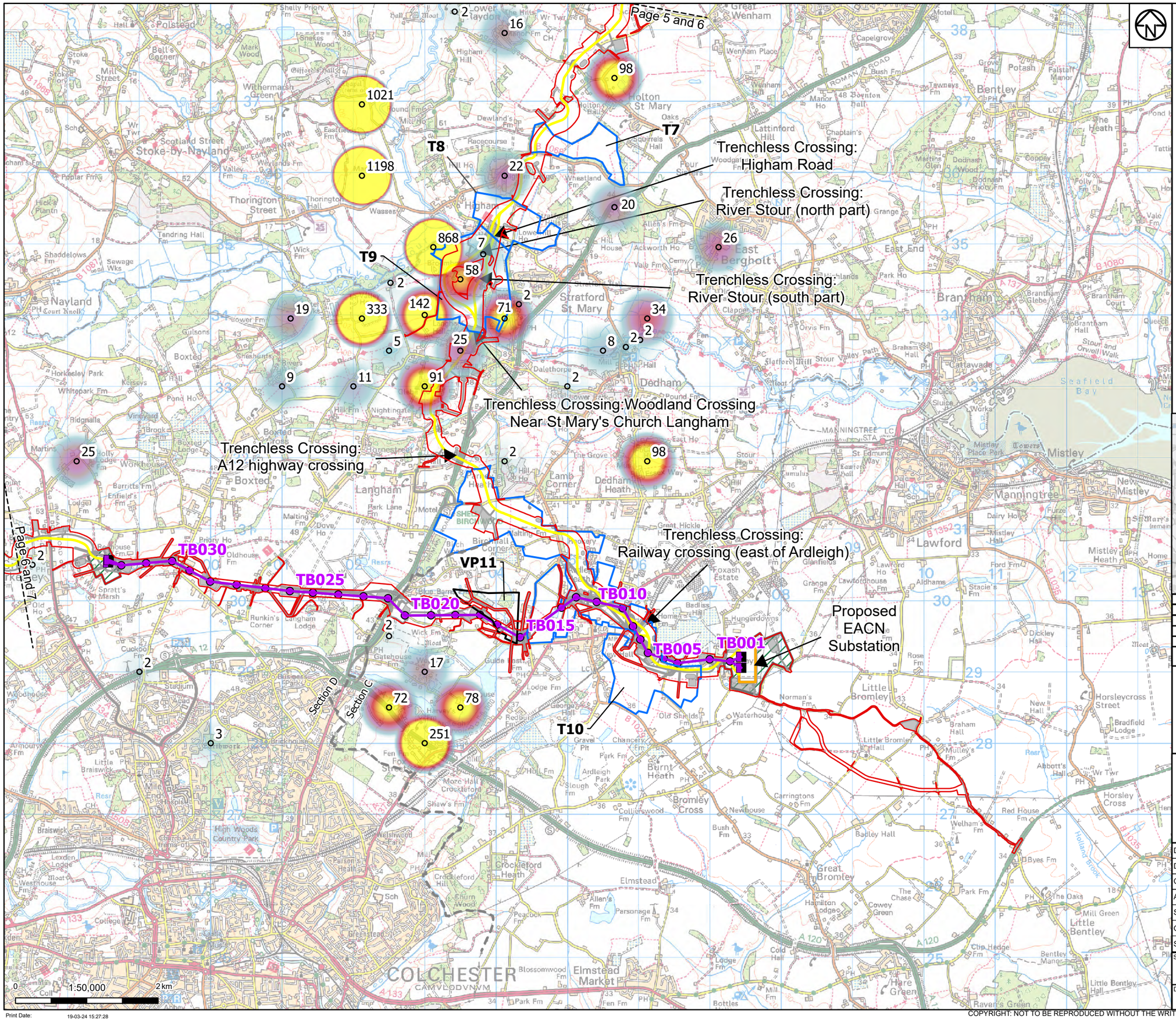
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed EACN substation

Proposed cable sealing end compound

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

Sparse

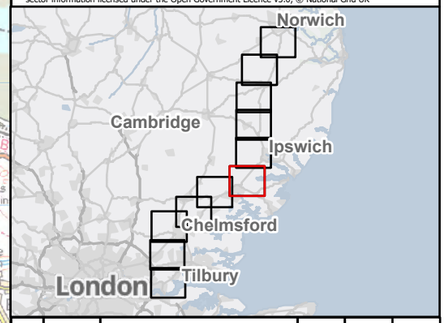
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Vantage point (VP) (2022/2023)

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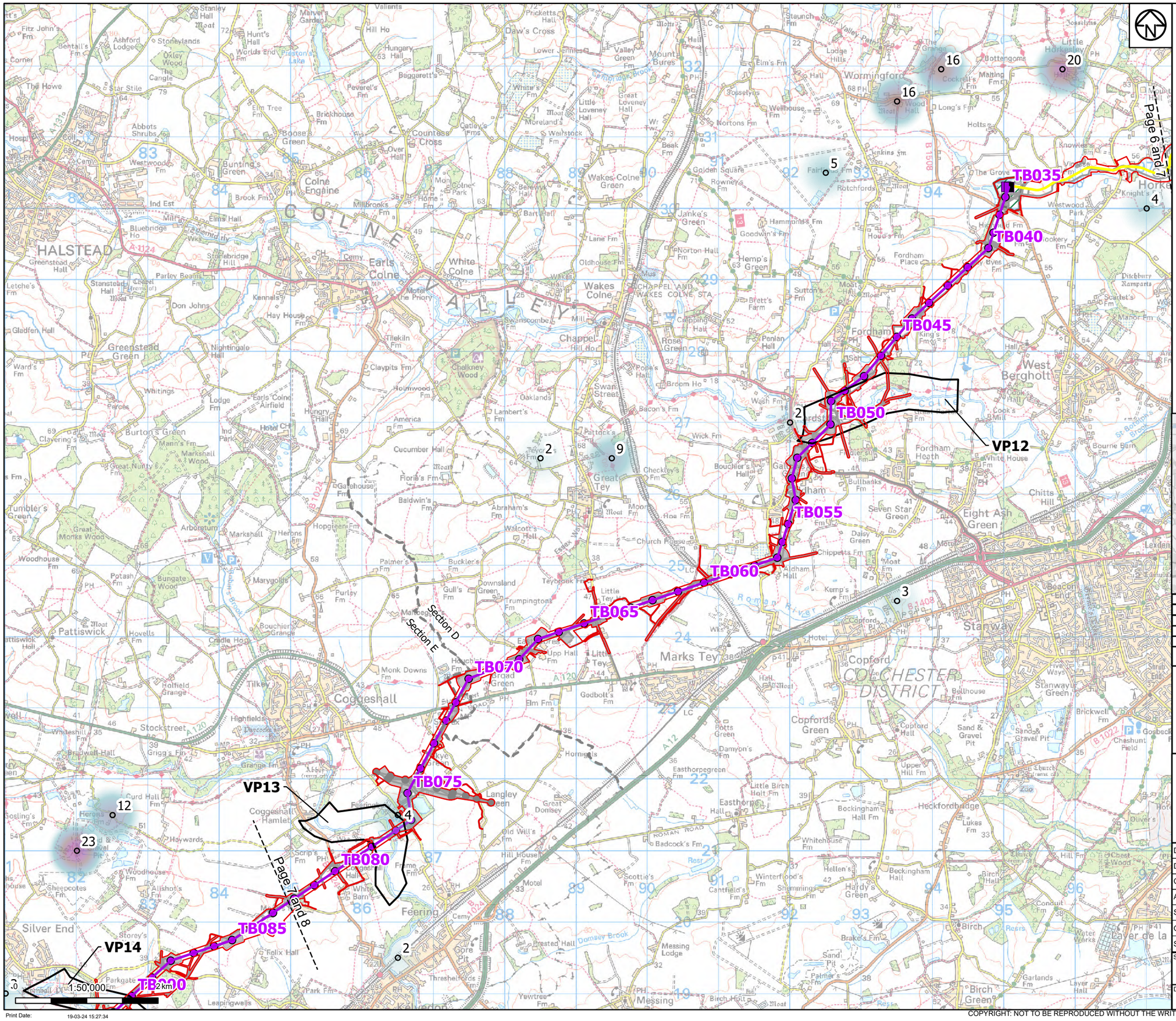
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

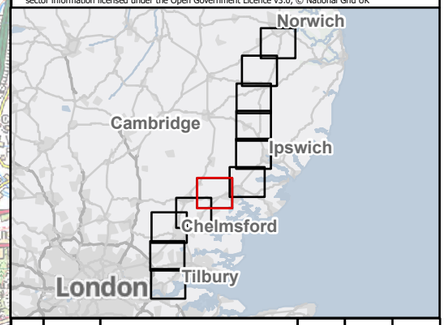
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Dense

Vantage point (VP) (2022/2023)

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Figure A.8.5.6 - Ecology and Biodiversity - Species at Risk From Collision
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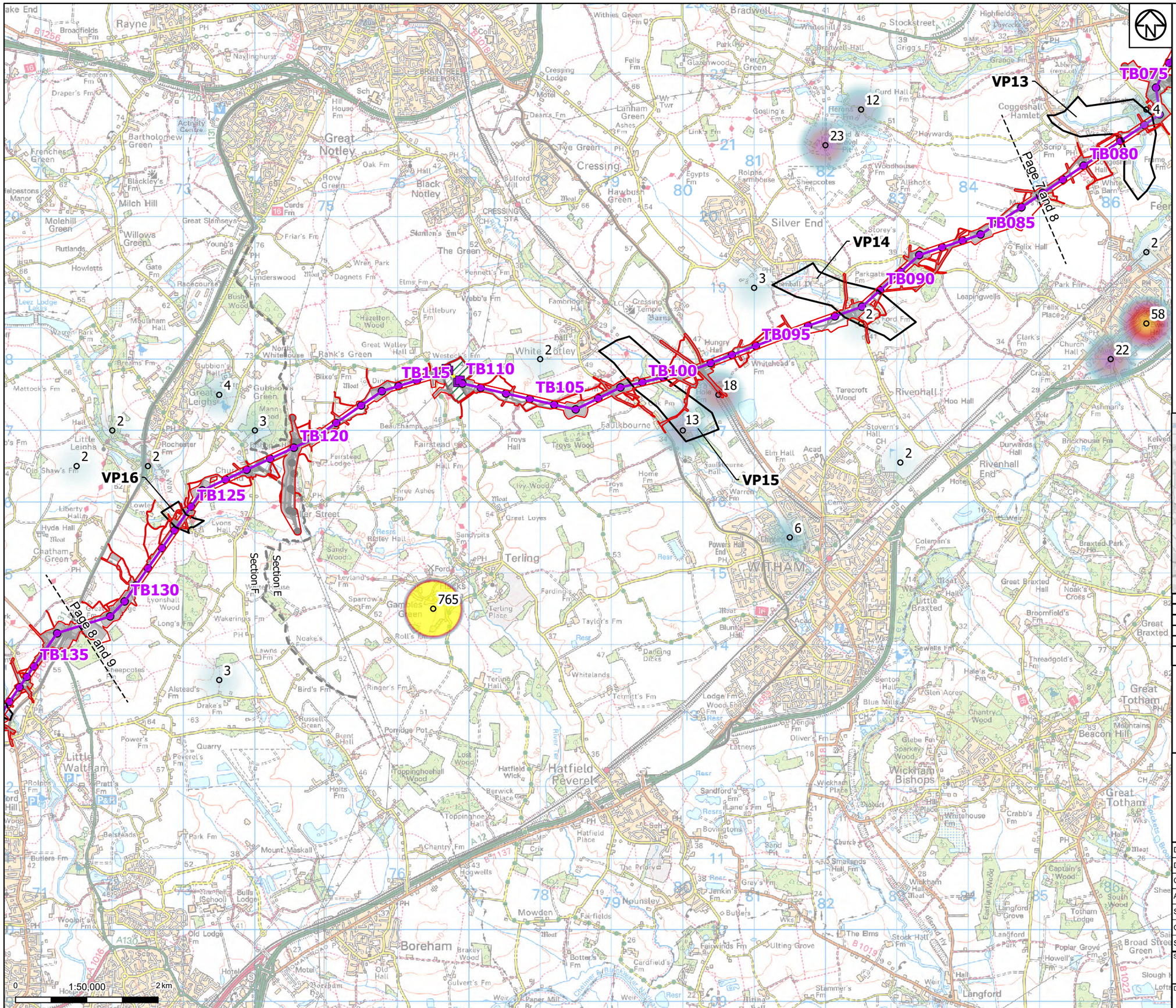
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Suitability Code:	A2	Project Number:	10059280

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

Sparse

Dense

Vantage point (VP) (2022/2023)

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position

Discipline specific constraints

Species record point count

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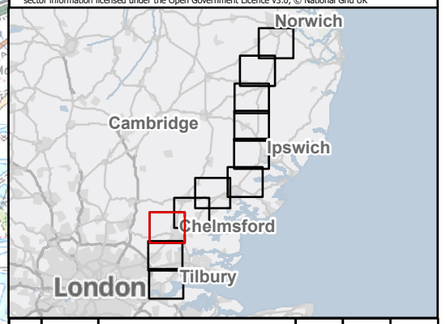
Primary focal species density

Sparse
Dense

Vantage point (VP) (2022/2023)

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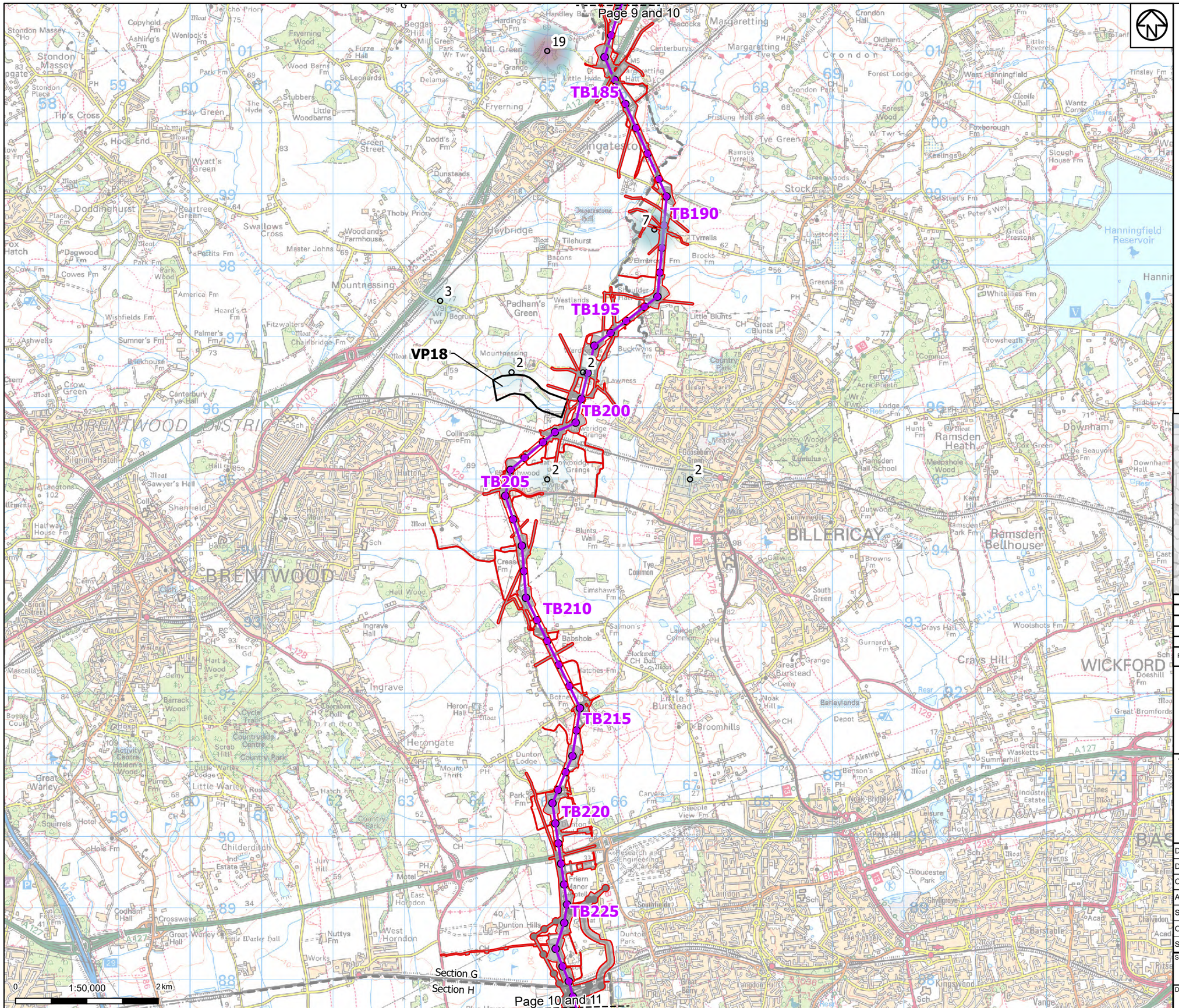
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Discipline specific constraints

Species record point count

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Primary focal species density

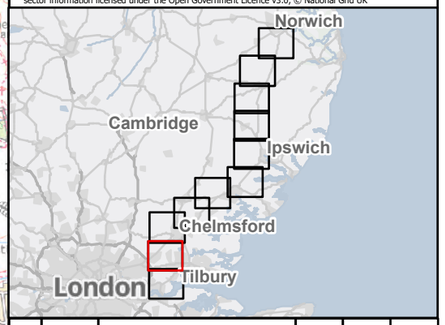
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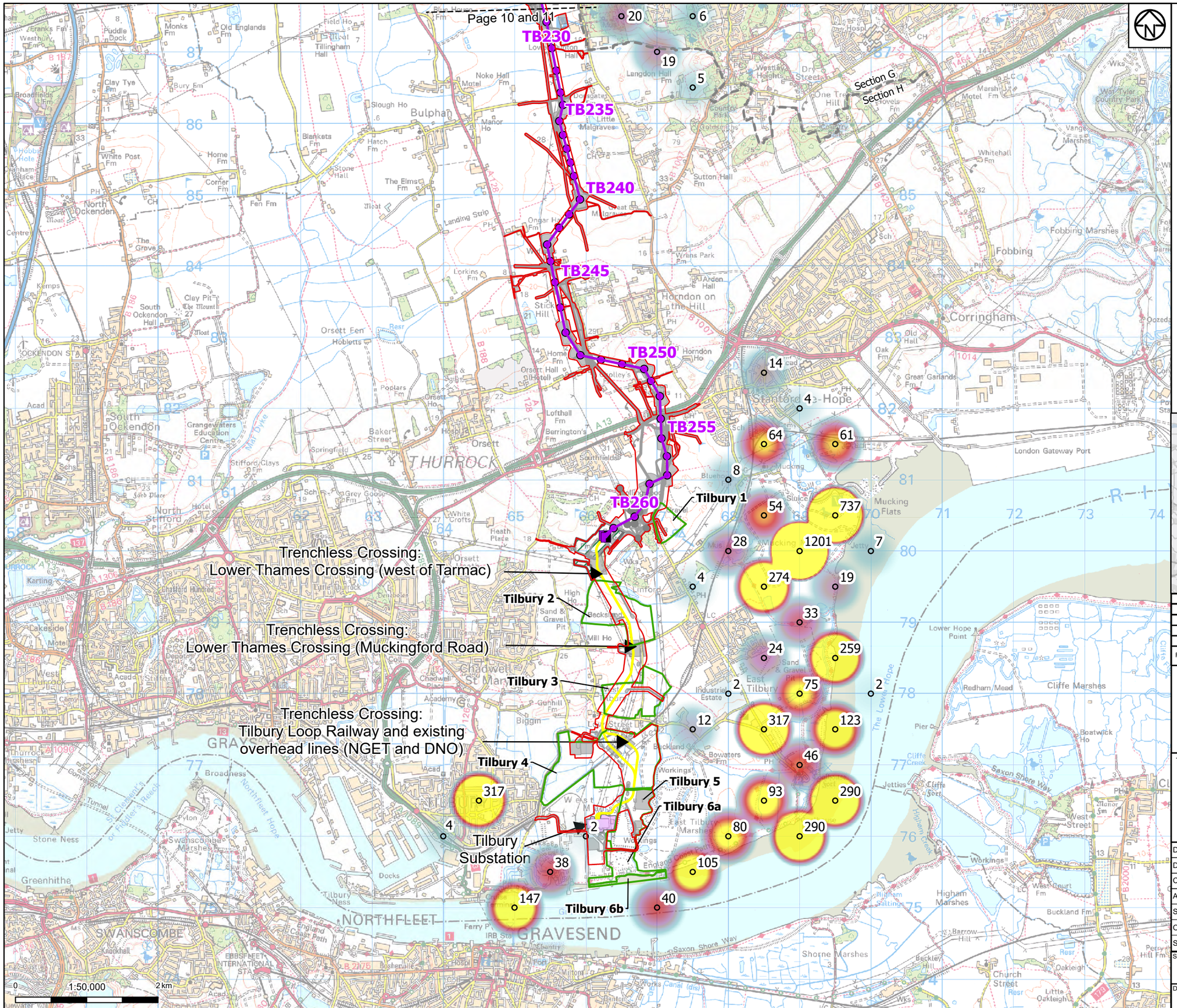
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed cable sealing end compound

Proposed environmental areas

Discipline specific constraints

Species record point count

The numbers on map signify the number of species records represented by each cluster.

Primary focal species density

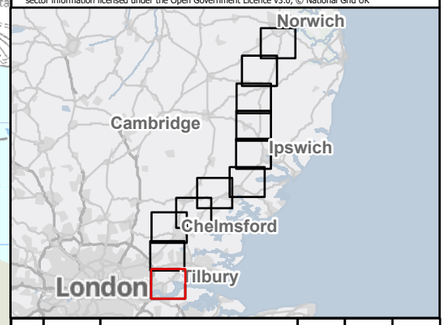
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Vantage point (VP) (2023/2024)

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Annex B: Designated Sites Information

Table A8.5.5 -Summary of other NSN and Ramsar sites within the Bird Study Area

Site Name	Details (including qualifying features)
Abberton Reservoir SPA and Ramsar	Abberton reservoir regularly supports a nationally important breeding population of cormorant, more than 20,000 wintering waterfowl. The site regularly supports internationally or nationally important wintering populations of wigeon, gadwall, great crested grebe, mute swan, shoveler, teal, pochard, tufted duck, goldeneye, and coot. In addition, the site regularly supports substantial concentrations of migratory mute swan, gadwall, shoveler, pochard and tufted duck in the late summer
Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar	The Colne Estuary supports nationally important breeding populations of little tern and regularly supports a nationally important wintering population hen harrier. In summer, it supports nationally important populations of pochard, ringed plover. In winter, the site regularly supports over 20,000 waterfowl including dark-bellied brent goose and redshank. The Colne Estuary also supports nationally important wintering populations of a further ten species: cormorant, mute swan, shelduck, goldeneye, ringed plover, grey plover, sanderling, dunlin, black-tailed godwit, and curlew.
Broadland SPA & Ramsar	During the breeding season, the SPA regularly supports important populations of bittern and marsh harrier. During the wintering or passage seasons, the SPA supports important populations of Bewick's Swan, whooper swan, hen harrier, ruff, wigeon, gadwall and shoveler.
Breckland SPA	Dry heath and grassland designated for internationally important populations of stone curlew, nightjar, and woodlark.
Blackwater Estuary (Mid-Essex Coast Phase 4) SPA & Ramsar	The Blackwater Estuary supports important breeding populations of little tern, pochard and ringed plover. It supports important wintering populations of hen harrier, dark-bellied brent geese, grey plover, dunlin, black-tailed godwit, cormorant, shelduck, gadwall, teal, goldeneye, ringed plover, curlew, and redshank. The estuary also regularly supports, in winter over, 20,000 waterfowl.

Site Name	Details (including qualifying features)
Benfleet & Southend Marshes SPA & Ramsar	Over winter the Benfleet & Southend Marshes SPA regularly supports important populations of dark-bellied brent goose, dunlin, knot, and grey plover as well as over 20,000 waterbirds.
Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA & Ramsar	Crouch & Roach Estuaries SPA is classified for its importance for wintering dark-bellied brent goose and supporting an assemblage of over 20,000 waterbirds in winter.
Medway Estuary & Marshes SPA & Ramsar	The Medway Estuary & Marshes SPA regularly supports important breeding populations of avocet and little tern and wintering population of avocet. It also supports over 20,000 waterbirds in winter and a diverse assemblage of breeding migratory waterfowl.
Hamford Water SPA & Ramsar	Little terns' nest on sand and shingle to the northeastern corner of Horsey Island. Extensive intertidal mudflats provide an abundant food resource for wintering waterbirds and areas of seagrass are exploited by large flocks of brent geese on their autumn arrival. Ducks, grebes and cormorants feed within the sub-tidal waters and little terns are frequently recorded foraging in the shallower water, along the edges and mouths of creeks and channels. There are shingle spits along the coastline between Pewit Island and Dovercourt and between Walton-on-the-Naze and Stone Point. Ringed plovers use these areas for nesting. The site qualifies for breeding populations of little tern and wintering populations of dark-bellied brent goose, shelduck, Teal, avocet, ringed plover, grey plover, black-tailed godwit, and common redshank.
Deben Estuary SPA	The site regularly supports important numbers of avocet, golden plover, hen harrier, short-eared owl, dark-bellied geese, in winter. In addition, the site supports important numbers of migratory waterfowl including shelduck, grey plover, black-tailed godwit, and redshank. The site also supports a notable assemblage of breeding and wintering wetland birds. Breeding species include shelduck, gadwall, teal, shoveler, redshank, oystercatcher, ringed plover, and snipe. Wintering species include cormorant, teal, pintail, wigeon, goldeneye, coot, oystercatcher, ringed plover, dunlin, snipe, curlew, turnstone and twite.

Site Name	Details (including qualifying features)
Dengie (Mid-Essex Coast Phase 1) SPA & Ramsar	The Dengie regularly supports a nationally important winter population of hen harrier. The Dengie qualifies as a wetland of international importance by regularly supporting, in winter, over 20,000 waterfowl including internationally important numbers of dark-bellied brent geese, grey plover and knot.
Outer Thames Estuary SPA (Marine)	The Outer Thames Estuary SPA is classified for the protection of the largest aggregation of wintering red-throated diver in the UK; it also protects foraging areas for common tern and little tern during the breeding season.
Sandlings SPA	The heaths support both acid grassland and heather-dominated plant communities, with dependant invertebrate and bird communities of conservation value including nationally important populations of woodlark and nightjar.

Table A8.5.6 - SSSI within 2km of the Draft Order Limits

Designated Site	Criteria
Mucking Flats and Marshes SSSI	The mudflats form the largest intertidal feeding area for wintering wildfowl and waders west of Canvey Island on the north bank of the Thames. Ringed plovers occur in internationally important numbers, with nationally important populations of shelduck, grey plover, dunlin, black-tailed godwit, and redshank. Other species occur in good numbers, with avocet regularly present, sometimes in nationally important numbers. The mudflats and saltmarsh are also an important staging post for passage migrants, with significant numbers of waders such as curlew sandpiper and an important late summer flock of yellow-legged gulls. The saltmarshes provide important high tide roosts, as do the disused silt lagoons at Coalhouse Fort. The value of the site is enhanced by its proximity to Cliffs and Cooling Marshes SSSI and Higham Marshes SSSI across the Thames in Kent, with which there is an interchange of roosting and feeding birds.

Designated Site	Criteria
South Thames Estuary and Marshes SSSI	**Wintering birds** The mudflats attract large numbers of feeding waders and wildfowl; the site being regularly used by redshank in internationally important numbers. There is evidence from recent winter low-water counts that knot and dunlin exceed internationally important numbers. These counts also indicate that avocet and ringed plover regularly exceed nationally important numbers. During the high tide period, waterfowl disperse to roosts in marshes in north Kent and Essex. Nevertheless, high tide counts for this site clearly reveal species regularly reaching nationally important numbers in winter including European white-fronted goose, shelduck, gadwall, teal, pintail, shoveler, grey plover, curlew, and black tailed godwit. In addition, nationally important numbers of grey plover, curlew, black-tailed godwit, redshank, and greenshank occur during autumn passage with redshank maintaining their nationally important numbers on spring passage. **Breeding birds** During the breeding season the South Thames Marshes support an outstanding assemblage of breeding birds including rare species such as garganey, pintail, avocet, and bearded tit. Specially protected birds found within the site include hen harrier, short-eared owl, ruff, common tern, avocet, and golden plover.
Stour Estuary SSSI	**Wintering and autumn passage birds** Thirteen species of wintering wildfowl and wader occur in qualifying numbers within the Stour Estuary: grey plover, knot, dunlin, redshank, black-tailed godwit, great crested grebe, cormorant, mute swan, dark-bellied brent goose, shelduck, pintail, ringed plover, and curlew. Ringed plover, dunlin and redshank are regularly found using the Stour Estuary on autumn passage in nationally important numbers.

Annex C: Scientific names of species mentioned in text.

Table A8.5.7 - Scientific names of species

Species	Scientific name		Species	Scientific name
Arctic Tern	*Sterna paradisaea*		Curlew	*Numenius arquata*
Avocet	*Recurvirostra avosetta*		Curlew Sandpiper	*Calidris ferruginea*
Barn Owl	*Tyto alba*		Dotterel	*Charadrius morinellus*
Barnacle Goose	*Branta leucopsis*		Dunlin	*Calidris alpina*
Bar-tailed Godwit	*Limosa lapponica*		Ferruginous Duck	*Aythya nyroca*
Bewick's Swan	*Cygnus columbianus*		Gadwall	*Mareca strepera*
Bittern	*Botaurus stellaris*		Garganey	*Spatula querquedula*
Black Kite	*Milvus migrans*		Golden Plover	*Pluvialis apricaria*
Black Tern	*Chlidonias niger*		Goldeneye	*Bucephala clangula*
Black-headed Gull	*Chroicocephalus ridibundus*		Goosander	*Mergus merganser*
Black-tailed Godwit	*Limosa limosa*		Goshawk	*Accipiter gentilis*
Black-throated Diver	*Gavia arctica*		Great Black-backed Gull	*Larus marinus*
Brent Goose	*Branta bernicla*		Great Crested Grebe	*Podiceps cristatus*
Buzzard	*Buteo buteo*		Great White Egret	*Ardea alba*
Canada Goose	*Branta canadensis*		Green Sandpiper	*Tringa ochropus*
Caspian Gull	*Larus cachinnans*		Greenshank	*Tringa nebularia*
Collared Dove	*Streptopelia decaocto*		Grey Heron	*Ardea cinerea*
Common Gull	*Larus canus*		Grey Plover	*Pluvialis squatarola*
Common Sandpiper	*Actitis hypoleucos*		Greylag Goose	*Anser anser*
Common Scoter	*Melanitta nigra*		Hen Harrier	*Circus cyaneus*
Common Tern	*Sterna hirundo*		Herring Gull	*Larus argentatus*

Species	Scientific name		Species	Scientific name
Coot	*Fulica atra*		Hobby	*Falco subbuteo*
Cormorant	*Phalacrocorax carbo*		Honey-buzzard	*Pernis apivorus*
Corncrake	*Crex crex*		Jack Snipe	*Lymnocryptes minimus*
Crane	*Grus grus*		Kestrel	*Falco tinnunculus*
Cuckoo	*Cuculus canorus*		Kittiwake	*Rissa tridactyla*
Knot	*Calidris canutus*		Oystercatcher	*Haematopus ostralegus*
Lapwing	*Vanellus vanellus*		Peregrine	*Falco peregrinus*
Lesser Black-backed Gull	*Larus fuscus*		Pink-footed Goose	*Anser brachyrhynchus*
Little Egret	*Egretta garzetta*		Pintail	*Anas acuta*
Little Grebe	*Tachybaptus ruficollis*		Pochard	*Aythya ferina*
Little Gull	*Hydrocoloeus minutus*		Quail	*Coturnix coturnix*
Little Owl	*Athene noctua*		Razorbill	*Alca torda*
Little Ringed Plover	*Charadrius dubius*		Red Kite	*Milvus milvus*
Little Stint	*Calidris minuta*		Red-breasted Merganser	*Mergus serrator*
Little Tern	*Sternula albifrons*		Red-crested Pochard	*Netta rufina*
Long-eared Owl	*Asio otus*		Red-necked Grebe	*Podiceps grisegena*
Long-tailed Skua	*Stercorarius longicaudus*		Redshank	*Tringa totanus*
Mallard	*Anas platyrhynchos*		Red-throated Diver	*Gavia stellata*
Mandarin Duck	*Aix galericulata*		Ringed Plover	*Charadrius hiaticula*
Manx Shearwater	*Puffinus puffinus*		Rock Dove	*Columba livia*
Marsh Harrier	*Circus aeruginosus*		Rook	*Corvus frugilegus*
Mediterranean Gull	*Ichthyaetus melanocephalus*		Roseate Tern	*Sterna dougallii*
Merlin	*Falco columbarius*		Rough-legged Buzzard	*Buteo lagopus*

Species	Scientific name		Species	Scientific name
Montagu's Harrier	*Circus pygargus*		White-fronted Goose	*Anser albifrons*
Moorhen	*Gallinula chloropus*		White-tailed Eagle	*Haliaeetus albicilla*
Mute Swan	*Cygnus olor*		Whooper Swan	*Cygnus cygnus*
Osprey	*Pandion haliaetus*		Ruddy Duck	*Oxyura jamaicensis*
Sanderling	*Calidris alba*		Ruddy Shelduck	*Tadorna ferruginea*
Sandwich Tern	*Thalasseus sandvicensis*		Ruff	*Calidris pugnax*
Scaup	*Aythya marila*		Sabine's Gull	*Xema sabini*
Shag	*Gulosus aristotelis*		Wigeon	*Mareca penelope*
Shelduck	*Tadorna tadorna*		Wood Sandpiper	*Tringa glareola*
Short-eared Owl	*Asio flammeus*		Woodcock	*Scolopax rusticola*
Shoveler	*Spatula clypeata*		Woodpigeon	*Columba palumbus*
Slavonian Grebe	*Podiceps auritus*		Yellow-legged Gull	*Larus michahellis*
Smew	*Mergellus albellus*			
Snipe	*Gallinago gallinago*			
Snowy Owl	*Bubo scandiacus*			
Sparrowhawk	*Accipiter nisus*			
Spoonbill	*Platalea leucorodia*			
Spotted Redshank	*Tringa erythropus*			
Starling	*Sturnus vulgaris*			
Stock Dove	*Columba oenas*			
Tawny Owl	*Strix aluco*			
Teal	*Anas crecca*			
Tufted Duck	*Aythya fuligula*			
Turnstone	*Arenaria interpres*			
Turtle Dove	*Streptopelia turtur*			
Velvet Scoter	*Melanitta fusca*			
Water Rail	*Rallus aquaticus*			
Whimbrel	*Numenius phaeopus*			
White Stork	*Ciconia ciconia*			

Annex D: Desk Study Data sets

Table A8.5.8 - Section A - South Norfolk District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Barn Owl	*Tyto alba*	WCA1	21	21	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Bewick's Swan	*Cygnus columbianus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	3	320	150	2011	No	Yes	Not qualifying features in NSN/Ramsar
Black Redstart	*Phoenicurus ochruros*	BoCC5: Amber, WCA1, RBBP	2	2	1	2012	No	No	Not qualifying features in NSN/Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	2	1450	800	2012	No	Yes	Not qualifying features in NSN/Ramsar
Blue Tit	*Cyanistes caeruleus*		1	1	1	2008	No	No	Not qualifying features in NSN/Ramsar
Brambling	*Fringilla montifringilla*	WCA1, RBBP	8	189	100	2016	No	No	Not qualifying features in NSN/Ramsar
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	45	107	9	2012	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		19	49	4	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Canada Goose	*Branta canadensis*		1	1	1	2008	No	Yes	Not qualifying features in NSN/Ramsar
Cetti's Warbler	*Cettia cetti*	WCA1	3	3	1	2019	No	No	Not qualifying features in NSN/Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	3	3250	1500	2012	No	Yes	Not qualifying features in NSN/Ramsar
Coot	*Fulica atra*		10	80	12	2016	No	Yes	Not qualifying features in NSN/Ramsar
Crossbill	*Loxia curvirostra*	WCA1	10	66	17	2012	No	No	Not qualifying features in NSN/Ramsar
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	9	10	2	2019	No	No	Not qualifying features in NSN/Ramsar
Dotterel	*Charadrius morinellus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2006	No	Yes	Not qualifying features in NSN/Ramsar
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	16	2090	400	2017	No	No	Not qualifying features in NSN/Ramsar
Firecrest	*Regulus ignicapilla*	WCA1, RBBP	2	2	1	2007	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Golden Plover	*Pluvialis apricaria*	BirdsDir: A1	4	4645	2265	2010	Yes	Yes	Redgrave & South Lopham Fens (8.03km)
Goldfinch	*Carduelis carduelis*		2	75	40	2012	No	No	Not qualifying features in NSN/Ramsar
Great Crested Grebe	*Podiceps cristatus*		12	35	4	2016	Yes	Yes	Redgrave & South Lopham Fens (8.7km)
Great Grey Shrike	*Lanius excubitor*	RBBP	3	3	1	2011	No	No	Not qualifying features in NSN/Ramsar
Great Spotted Woodpecker	*Dendrocopos major*		3	11	7	2016	No	No	Not qualifying features in NSN/Ramsar
Great White Egret	*Ardea alba*	BoCC5: Amber, RBBP, BirdsDir: A1	1	1	1	2007	No	Yes	Not qualifying features in NSN/Ramsar
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	1	1	1	2005	No	Yes	Not qualifying features in NSN/Ramsar
Green Woodpecker	*Picus viridis*		4	10	5	2012	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	7	588	149	2011	No	No	Not qualifying features in NSN/Ramsar
Greenshank	*Tringa nebularia*	BoCC5: Amber, WCA1, RBBP	1	1	1	2008	Yes	Yes	Redgrave & South Lopham Fens (8.03km)
Grey Partridge	*Perdix perdix*	BoCC5: Red, S41	6	9	2	2012	No	No	Not qualifying features in NSN/Ramsar
Grey Plover	*Pluvialis squatarola*	BoCC5: Amber	1	1	1	2008	Yes	Yes	Redgrave & South Lopham Fens (11.03km)
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	23	33	6	2013	No	No	Not qualifying features in NSN/Ramsar
Hawfinch	*Coccothraustes coccothraustes*	BoCC5: Red, RBBP	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	3	5	3	2010	No	Yes	Not qualifying features in NSN/Ramsar
Hobby	*Falco subbuteo*	WCA1, RBBP	13	16	3	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Honey-buzzard	*Pernis apivorus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	2	4	2	2008	No	Yes	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	2	17	15	2012	No	No	Not qualifying features in NSN/Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	5	418	150	2015	No	No	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	8	10	2	2013	No	No	Not qualifying features in NSN/Ramsar
Lapland Bunting	*Calcarius lapponicus*	BoCC5: Amber, WCA1, RBBP	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	2	3250	3000	2007	Yes	Yes	Equal distance to Broadland SPA and Broadland Ramsar (18.57km)
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	5	3440	2000	2011	No	Yes	Not qualifying features in NSN/Ramsar
Lesser Redpoll	*Acanthis cabaret*	BoCC5: Red, S41	2	2	1	2013	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	298	705	12	2021	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	18	9277	1774	2012	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	27	34	3	2014	Yes	yes	Redgrave & South Lopham Fens (10.65km)
Little Owl	*Athene noctua*		53	68	4	2013	No	Yes	Not qualifying features in NSN/Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	231	230	2008	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	5	5	1	2021	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	19	28	5	2013	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	3	52	50	2009	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Mediterranean Gull	*Ichthyaetus melanocephalus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	2	2	1	2010	No	Yes	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	2	2	1	2006	No	Yes	Not qualifying features in NSN/Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	2	2	1	2009	No	No	Not qualifying features in NSN/Ramsar
Montagu's Harrier	*Circus pygargus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2011	No	Yes	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	25	343	48	2016	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		5	12	8	2011	Yes	Yes	Redgrave & South Lopham Fens (10.65km)
Nuthatch	*Sitta europaea*		7	10	4	2013	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	3	3	1	2016	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	5	8	3	2014	No	Yes	Not qualifying features in NSN/Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	9	9	1	2012	No	Yes	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		4	202	100	2014	No	No	Not qualifying features in NSN/Ramsar
Pink-footed Goose	*Anser brachyrhynchus*	BoCC5: Amber, RBBP	1	10	10	2007	No	Yes	Not qualifying features in NSN/Ramsar
Quail	*Coturnix coturnix*	BoCC5: Amber, WCA1, RBBP	3	3	1	2015	No	No	Not qualifying features in NSN/Ramsar
Red Kite	*Milvus milvus*	WCA1	12	13	2	2015	No	Yes	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	8	552	250	2011	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	7	77	44	2019	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Ring Ouzel	*Turdus torquatus*	BoCC5: Red, S41	3	3	1	2016	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		1	1	1	2008	No	No	Not qualifying features in NSN/Ramsar
Rough-legged Buzzard	*Buteo lagopus*	RBBP	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Sand Martin	*Riparia riparia*		1	1	1	2008	No	No	Not qualifying features in NSN/Ramsar
Shag	*Gulosus aristotelis*	BoCC5: Red	1	1	1	2005	No	Yes	Not qualifying features in NSN/Ramsar
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Siskin	*Spinus spinus*		2	26	25	2009	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	9	516	240	2011	No	No	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	9	9	2005	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Snow Bunting	*Plectrophenax nivalis*	BoCC5: Amber, WCA1, RBBP	1	1	1	2016	No	No	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	15	15	1	2008	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	2	2	1	2021	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	17	17	1	2013	No	No	Not qualifying features in NSN/Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	5	9140	6000	2012	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	8	116	60	2016	No	Yes	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		6	23	10	2011	No	No	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	160	1925	250	2021	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	31	32	2	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Tree Sparrow	*Passer montanus*	BoCC5: Red, S41	19	224	30	2013	No	No	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		6	8	3	2013	No	No	Not qualifying features in NSN/Ramsar
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	69	77	2	2016	No	Yes	Not qualifying features in NSN/Ramsar
Waxwing	*Bombycilla garrulus*	RBBP	16	114	20	2016	No	No	Not qualifying features in NSN/Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	6	16	11	2011	No	No	Not qualifying features in NSN/Ramsar
Whimbrel	*Numenius phaeopus*	BoCC5: Red, WCA1, RBBP	1	1	1	2005	No	Yes	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	3	4	2	2009	No	No	Not qualifying features in NSN/Ramsar
Willow Tit	*Poecile montanus*	BoCC5: Red, S41, RBBP	1	1	1	2009	No	No	Not qualifying features in NSN/Ramsar
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	4	7	4	2010	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	23	41	7	2016	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	2	2	1	2005	No	No	Not qualifying features in NSN/Ramsar
Wryneck	*Jynx torquilla*	WCA1, RBBP	2	2	1	2008	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	4	5	2	2014	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	22	2023	400	2012	No	No	Not qualifying features in NSN/Ramsar

Table A8.5.9 - Mid Suffolk District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Arctic Tern	*Sterna paradisaea*	BoCC5: Amber, BirdsDir: A1	1	6	6	2015	No	Yes	Not qualifying **features** in NSN/Ramsar
Barn Owl	*Tyto alba*	WCA1	57	71	6	2020	No	Yes	Not qualifying features in NSN/Ramsar
Barnacle Goose	*Branta leucopsis*	BoCC5: Amber, BirdsDir: A1	1	1	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Bewick's Swan	*Cygnus columbianus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	4	86	73	2013	No	Yes	Not qualifying features in NSN/Ramsar
Bittern	*Botaurus stellaris*	BoCC5: Amber, S41, WCA1, RBBP, BirdsDir: A1	3	3	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Black Kite	*Milvus migrans*	RBBP, BirdsDir: A1	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Black Redstart	*Phoenicurus ochruros*	BoCC5: Amber, WCA1, RBBP	4	4	1	2020	No	No	Not qualifying features in NSN/Ramsar
Black Tern	*Chlidonias niger*	WCA1, RBBP	1	2	2	2019	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	50	1366	200	2021	No	Yes	Not qualifying features in NSN/Ramsar
Black-tailed Godwit	*Limosa limosa*	BoCC5: Red, S41, WCA1, RBBP	1	1	1	2011	Yes	Yes	Redgrave & South Lopham Fens (11.78 km)
Black-throated Diver	*Gavia arctica*	BoCC5: Amber, WCA1, RBBP	3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Brambling	*Fringilla montifringilla*	WCA1, RBBP	8	8	1	2020	No	No	Not qualifying features in NSN/Ramsar
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	80	146	14	2020	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		76	101	4	2021	No	Yes	Not qualifying features in NSN/Ramsar
Caspian Gull	*Larus cachinnans*	BoCC5: Amber	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Cetti's Warbler	*Cettia cetti*	WCA1	7	8	2	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	31	404	80	2020	No	Yes	Not qualifying features in NSN/Ramsar
Common Redpoll	*Acanthis flammea*	BoCC5: Red, RBBP	2	3	2	2013	No	No	Not qualifying features in NSN/Ramsar
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	4	8	5	2020	No	Yes	Not qualifying features in NSN/Ramsar
Common Tern	*Sterna hirundo*	BoCC5: Amber, BirdsDir: A1	13	16	2	2020	No	yes	Not qualifying features in NSN/Ramsar
Coot	*Fulica atra*		11	30	10	2020	No	Yes	Not qualifying features in NSN/Ramsar
Cormorant	*Phalacrocorax carbo*		11	45	19	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.97 km)
Corn Bunting	*Emberiza calandra*	BoCC5: Red, S41	1	1	1	2008	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Corncrake	*Crex crex*	BoCC5: Red, S41, WCA1, RBBP, BirdsDir: A1	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Crossbill	*Loxia curvirostra*	WCA1	6	26	18	2020	No	No	Not qualifying features in NSN/Ramsar
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	24	25	2	2020	No	No	Not qualifying features in NSN/Ramsar
Curlew	*Numenius arquata*	BoCC5: Red, S41	1	3	3	2008	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (10.33 km)
Dipper	*Cinclus cinclus*	BoCC5: Amber	4	4	1	2016	No	No	Not qualifying features in NSN/Ramsar
Dunlin	*Calidris alpina*	BoCC5: Red	3	3	1	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries Ramsar (6.97 km)
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	69	120	8	2020	No	No	Not qualifying features in NSN/Ramsar
Ferruginous Duck	*Aythya nyroca*	RBBP	3	3	1	2011	No	Yes	Not qualifying features in NSN/Ramsar
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	63	2437	390	2021	No	No	Not qualifying features in NSN/Ramsar
Firecrest	*Regulus ignicapilla*	WCA1, RBBP	7	7	1	2016	No	No	Not qualifying features in NSN/Ramsar
Gadwall	*Mareca strepera*	BoCC5: Amber	6	19	6	2020	Yes	Yes	Redgrave & South Lopham Fens (6.12 km)
Golden Plover	*Pluvialis apricaria*	BirdsDir: A1	24	1811	320	2020	Yes	Yes	Redgrave & South Lopham Fens (3.42 km)
Goldeneye	*Bucephala clangula*	BoCC5: Red, RBBP	2	4	3	2016	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries Ramsar (10.33 km)
Goosander	*Mergus merganser*		5	6	2	2020	No	Yes	Not qualifying features in NSN/Ramsar
Goshawk	*Accipiter gentilis*	WCA1, RBBP	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Grasshopper Warbler	*Locustella naevia*	BoCC5: Red, S41	3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	8	13	3	2020	No	Yes	Not qualifying features in NSN/Ramsar
Great Crested Grebe	*Podiceps cristatus*		11	24	5	2021	Yes	Yes	Redgrave & South Lopham Fens (6.12 km)
Great White Egret	*Ardea alba*	BoCC5: Amber, RBBP, BirdsDir: A1	4	4	1	2021	No	Yes	Not qualifying features in NSN/Ramsar
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	11	11	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	64	247	31	2020	No	No	Not qualifying features in NSN/Ramsar
Greenshank	*Tringa nebularia*	BoCC5: Amber, WCA1, RBBP	3	6	4	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (7.44 km)
Grey Heron	*Ardea cinerea*		25	44	10	2020	No	Yes	Not qualifying features in NSN/Ramsar
Grey Partridge	*Perdix perdix*	BoCC5: Red, S41	17	78	21	2020	No	No	Not qualifying features in NSN/Ramsar
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	32	63	10	2021	No	No	Not qualifying features in NSN/Ramsar
Greylag Goose	*Anser anser*	BoCC5: Amber	21	160	70	2021	No	Yes	Not qualifying features in NSN/Ramsar
Hawfinch	*Coccothraustes coccothraustes*	BoCC5: Red, RBBP	1	1	1	2009	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Hen Harrier	*Circus cyaneus*	BoCC5: Red, S41, WCA1, RBBP, BirdsDir: A1	1	1	1	2008	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (19.44 km)
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	37	1190	1000	2020	No	Yes	Not qualifying features in NSN/Ramsar
Hobby	*Falco subbuteo*	WCA1, RBBP	20	20	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Honey-buzzard	*Pernis apivorus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	5	5	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Hoopoe	*Upupa epops*	WCA1, RBBP	3	3	1	2019	No	No	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	54	308	75	2021	No	No	Not qualifying features in NSN/Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	63	216	22	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Jack Snipe	*Lymnocryptes minimus*	RBBP	3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Kestrel	*Falco tinnunculus*	BoCC5: Amber	68	85	5	2020	No	Yes	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	25	30	3	2020	No	No	Not qualifying features in NSN/Ramsar
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	27	1327	330	2020	Yes	Yes	Redgrave & South Lopham Fens (1.62 km)
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	28	90	25	2021	No	Yes	Not qualifying features in NSN/Ramsar
Lesser Redpoll	*Acanthis cabaret*	BoCC5: Red, S41	10	43	15	2020	No	No	Not qualifying features in NSN/Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	903	1306	12	2022	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	70	1205	200	2021	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	41	55	4	2021	Yes	yes	Equal distance to Stour and Orwell

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.1 km)
Little Grebe	*Tachybaptus ruficollis*		10	21	5	2020	Yes	Yes	Redgrave & South Lopham Fens (1.62 km)
Little Owl	*Athene noctua*		61	79	6	2021	No	Yes	Not qualifying features in NSN/Ramsar
Little Ringed Plover	*Charadrius dubius*	WCA1, RBBP	4	10	4	2020	No	Yes	Not qualifying features in NSN/Ramsar
Long-eared Owl	*Asio otus*	RBBP	1	1	1	2009	No	yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		8	14	3	2017	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	51	63	3	2022	No	No	Not qualifying features in NSN/Ramsar
Marsh Warbler	*Acrocephalus palustris*	BoCC5: Red, S41, WCA1	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	43	305	30	2020	No	No	Not qualifying features in NSN/Ramsar
Mediterranean Gull	*Ichthyaetus melanocephalus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	4	7	4	2020	No	Yes	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	2	2	1	2010	No	Yes	Not qualifying features in NSN/Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	65	102	12	2022	No	No	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	130	423	30	2022	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		24	46	6	2021	Yes	Yes	Redgrave & South Lopham Fens (5.96 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	17	20	3	2020	No	No	Not qualifying features in NSN/Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	5	5	1	2016	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	4	5	2	2020	No	Yes	Not qualifying features in NSN/Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	11	13	2	2021	No	Yes	Not qualifying features in NSN/Ramsar
Pied Flycatcher	*Ficedula hypoleuca*	BoCC5: Amber	3	3	1	2015	No	No	Not qualifying features in NSN/Ramsar
Pintail	*Anas acuta*	BoCC5: Amber	7	8	2	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (14.74 km)
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	3	16	14	2017	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Red Kite	*Milvus milvus*	WCA1	19	19	1	2021	No	Yes	Not qualifying features in NSN/Ramsar
Redshank	*Tringa totanus*	BoCC5: Amber	4	5	2	2018	Yes	yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.97 km)
Redstart	*Phoenicurus phoenicurus*	BoCC5: Amber	1	1	1	2007	No	No	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	59	1314	620	2021	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	41	135	60	2021	No	No	Not qualifying features in NSN/Ramsar
Ring Ouzel	*Turdus torquatus*	BoCC5: Red, S41	3	4	2	2014	No	No	Not qualifying features in NSN/Ramsar
Ringed Plover	*Charadrius hiaticula*	BoCC5: Red	3	3	1	2018	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries Ramsar (6.97 km)
Rock Dove	*Columba livia*		32	287	150	2020	No	Yes	Not qualifying features in NSN/Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	108	4925	3600	2022	No	No	Not qualifying features in NSN/Ramsar
Ruddy Duck	*Oxyura jamaicensis*		1	2	2	2008	No	Yes	Not qualifying features in NSN/Ramsar
Ruff	*Calidris pugnax*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	4	4	2015	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (15.38 km)
Sedge Warbler	*Acrocephalus schoenobaenus*	BoCC5: Amber	12	16	3	2020	No	No	Not qualifying features in NSN/Ramsar
Shag	*Gulosus aristotelis*	BoCC5: Red	3	3	1	2018	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Shelduck	*Tadorna tadorna*	BoCC5: Amber	3	6	4	2015	Yes	Yes	Redgrave & South Lopham Fens (4.61 km)
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	1	1	1	2016	No	Yes	Not qualifying features in NSN/Ramsar
Shoveler	*Spatula clypeata*	BoCC5: Amber, RBBP	3	7	3	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (14.74 km)
Skylark	*Alauda arvensis*	BoCC5: Red, S41	91	575	268	2021	No	No	Not qualifying features in NSN/Ramsar
Smew	*Mergellus albellus*	BoCC5: Red, RBBP	1	1	1	2012	No	Yes	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	27	61	12	2020	No	Yes	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	116	161	12	2022	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	84	98	4	2022	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	55	93	5	2021	No	No	Not qualifying features in NSN/Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	288	917	150	2022	No	Yes	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	285	1633	200	2021	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	42	47	2	2021	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	8	32	14	2020	No	Yes	Not qualifying features in NSN/Ramsar
Tree Pipit	*Anthus trivialis*	BoCC5: Red, S41	3	3	1	2015	No	No	Not qualifying features in NSN/Ramsar
Tree Sparrow	*Passer montanus*	BoCC5: Red, S41	2	2	1	2016	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		14	45	15	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	140	185	7	2020	No	Yes	Not qualifying features in NSN/Ramsar
Water Rail	*Rallus aquaticus*	RBBP	12	17	4	2018	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (5.85 km)
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	6	6	1	2020	No	No	Not qualifying features in NSN/Ramsar
Whimbrel	*Numenius phaeopus*	BoCC5: Red, WCA1, RBBP	2	4	3	2020	No	Yes	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
White Stork	*Ciconia ciconia*	RBBP	5	5	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
White-tailed Eagle	*Haliaeetus albicilla*	BoCC5: Amber, WCA1, RBBP	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Whitethroat	*Curruca communis*	BoCC5: Amber	76	120	12	2021	No	No	Not qualifying features in NSN/Ramsar
Whooper Swan	*Cygnus cygnus*	BoCC5: Amber, WCA1, RBBP	2	3	2	2010	No	Yes	Not qualifying features in NSN/Ramsar
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	6	19	5	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.97 km)
Willow Tit	*Poecile montanus*	BoCC5: Red, S41, RBBP	1	1	1	2006	No	No	Not qualifying features in NSN/Ramsar
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	40	63	13	2020	No	No	Not qualifying features in NSN/Ramsar
Wood Warbler	*Phylloscopus sibilatrix*	BoCC5: Red, S41	2	2	1	2017	No	No	Not qualifying features in NSN/Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	34	50	5	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Woodlark	*Lullula arborea*	S41, WCA1, RBBP, BirdsDir: A1	3	3	1	2015	No	No	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	133	318	50	2021	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	9	11	2	2020	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	87	211	30	2021	No	No	Not qualifying features in NSN/Ramsar
Yellow-legged Gull	*Larus michahellis*	BoCC5: Amber, RBBP	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Table A8.5.10 - Babergh and Colchester and Tendring District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Avocet	*Recurvirostra avosetta*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	2	14	12	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (8.6 km)	
Barn Owl	*Tyto alba*	WCA1	21	24	3	2018	No	Yes	Not qualifying features in NSN/Ramsar	
Barnacle Goose	*Branta leucopsis*	BoCC5: Amber, BirdsDir: A1	5	6	2	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Bar-tailed Godwit	*Limosa lapponica*	BoCC5: Amber, RBBP, BirdsDir: A1	1	3	3	2011	No	Yes	Not qualifying features in NSN/Ramsar	
Bearded Tit	*Panurus biarmicus*	WCA1, RBBP	1	1	1	2016	No	No	Not qualifying features in NSN/Ramsar	
Bewick's Swan	*Cygnus columbianus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	2	2	2018	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Bittern	*Botaurus stellaris*	BoCC5: Amber, S41, WCA1, RBBP, BirdsDir: A1	1	1	1	2011	No	Yes	Not qualifying features in NSN/Ramsar	
Black Redstart	*Phoenicurus ochruros*	BoCC5: Amber, WCA1, RBBP	2	2	1	2012	No	No	Not qualifying features in NSN/Ramsar	
Black Tern	*Chlidonias niger*	WCA1, RBBP	2	2	1	2008	No	Yes	Not qualifying features in NSN/Ramsar	
Blackbird	*Turdus merula*		1	15	15	2020	No	No	Not qualifying features in NSN/Ramsar	
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	32	2567	1250	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Black-tailed Godwit	*Limosa limosa*	BoCC5: Red, S41, WCA1, RBBP	10	336	225	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.59 km)	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Brambling	*Fringilla montifringilla*	WCA1, RBBP	12	669	250	2017	No	No	Not qualifying features in NSN/Ramsar	
Brent Goose	*Branta bernicla*	BoCC5: Amber, S41	2	3	2	2012	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (5.39 km)	
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	32	69	18	2021	No	No	Not qualifying features in NSN/Ramsar	
Buzzard	*Buteo buteo*		62	155	30	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Canada Goose	*Branta canadensis*		2	31	17	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Cetti's Warbler	*Cettia cetti*	WCA1	8	32	25	2020	No	No	Not qualifying features in NSN/Ramsar	
Common Gull	*Larus canus*	BoCC5: Amber	26	584	200	2020	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	7	34	25	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Common Tern	*Sterna hirundo*	BoCC5: Amber, BirdsDir: A1	11	56	44	2020	No	yes	Not qualifying features in NSN/Ramsar	
Coot	*Fulica atra*		17	152	50	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Cormorant	*Phalacrocorax carbo*		10	66	17	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Corn Bunting	*Emberiza calandra*	BoCC5: Red, S41	4	21	18	2019	No	No	Not qualifying features in NSN/Ramsar	
Crane	*Grus grus*	BoCC5: Amber, RBBP, BirdsDir: A1	1	2	2	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Crossbill	*Loxia curvirostra*	WCA1	1	1	1	2008	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	31	38	6	2020	No	No	Not qualifying features in NSN/Ramsar	
Curlew	*Numenius arquata*	BoCC5: Red, S41	6	12	6	2018	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.54 km)	
Dunlin	*Calidris alpina*	BoCC5: Red	3	6	4	2018	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.97 km)	
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	44	86	12	2020	No	No	Not qualifying features in NSN/Ramsar	
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	35	1388	250	2020	No	No	Not qualifying features in NSN/Ramsar	
Firecrest	*Regulus ignicapilla*	WCA1, RBBP	3	4	2	2020	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Gadwall	*Mareca strepera*	BoCC5: Amber	11	162	38	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Garganey	*Spatula querquedula*	BoCC5: Amber, WCA1, RBBP	3	3	1	2017	No	Yes	Not qualifying features in NSN/Ramsar	
Goldcrest	*Regulus regulus*		2	36	22	2020	No	No	Not qualifying features in NSN/Ramsar	
Golden Oriole	*Oriolus oriolus*	WCA1, RBBP	2	2	1	2017	No	No	Not qualifying features in NSN/Ramsar	
Golden Plover	*Pluvialis apricaria*	BirdsDir: A1	9	1107	600	2012	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.54 km)	
Goldeneye	*Bucephala clangula*	BoCC5: Red, RBBP	2	2	1	2012	Yes	Yes	Equal distance to Stour and Orwell	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries SPA and Stour and Orwell Estuaries Ramsar (8.6 km)	
Goosander	*Mergus merganser*		6	52	38	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Grasshopper Warbler	*Locustella naevia*	BoCC5: Red, S41	1	1	1	2009	No	No	Not qualifying features in NSN/Ramsar	
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	8	10	2	2018	No	Yes	Not qualifying features in NSN/Ramsar	
Great Crested Grebe	*Podiceps cristatus*		7	134	91	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.54 km)	
Great Spotted Woodpecker	*Dendrocopos major*		2	36	19	2020	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Great White Egret	*Ardea alba*	BoCC5: Amber, RBBP, BirdsDir: A1	3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	14	99	37	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Green Woodpecker	*Picus viridis*		3	75	48	2020	No	No	Not qualifying features in NSN/Ramsar	
Greenfinch	*Chloris chloris*	BoCC5: Red	32	123	40	2020	No	No	Not qualifying features in NSN/Ramsar	
Greenshank	*Tringa nebularia*	BoCC5: Amber, WCA1, RBBP	4	5	2	2019	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.97 km)	
Grey Heron	*Ardea cinerea*		20	89	48	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Grey Partridge	*Perdix perdix*	BoCC5: Red, S41	5	12	4	2020	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	19	100	40	2020	No	No	Not qualifying features in NSN/Ramsar	
Greylag Goose	*Anser anser*	BoCC5: Amber	17	154	46	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Hen Harrier	*Circus cyaneus*	BoCC5: Red, S41, WCA1, RBBP, BirdsDir: A1	3	21	19	2016	Yes	Yes	Equal distance to Colne Estuary (Mid-Essex Coast Phase 2) SPA and Colne Estuary (Mid-Essex Coast Phase 2) Ramsar (6.7 4km)	
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	19	114	27	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Hobby	*Falco subbuteo*	WCA1, RBBP	21	32	5	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Honey-buzzard	*Pernis apivorus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	3	3	1	2016	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	34	272	100	2020	No	No	Not qualifying features in NSN/Ramsar	
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	31	159	40	2020	No	No	Not qualifying features in NSN/Ramsar	
Jack Snipe	*Lymnocryptes minimus*	RBBP	1	1	1	2018	No	Yes	Not qualifying features in NSN/Ramsar	
Jay	*Garrulus glandarius*		2	29	16	2020	No	No	Not qualifying features in NSN/Ramsar	
Kestrel	*Falco tinnunculus*	BoCC5: Amber	48	102	35	2021	No	Yes	Not qualifying features in NSN/Ramsar	
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	19	86	50	2020	No	No	Not qualifying features in NSN/Ramsar	
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	28	1945	450	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	24	85	37	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Lesser Redpoll	*Acanthis cabaret*	BoCC5: Red, S41	10	67	38	2020	No	No	Not qualifying features in NSN/Ramsar	
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	1494	3641	13	2022	No	No	Not qualifying features in NSN/Ramsar	
Linnet	*Linaria cannabina*	BoCC5: Red, S41	53	569	200	2020	No	No	Not qualifying features in NSN/Ramsar	
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	28	106	41	2020	Yes	yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Little Grebe	*Tachybaptus ruficollis*		19	96	43	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	

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Little Gull	*Hydrocoloeus minutus*	WCA1, RBBP	3	5	2	2015	No	Yes	Not qualifying features in NSN/Ramsar	
Little Owl	*Athene noctua*		36	40	4	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Little Ringed Plover	*Charadrius dubius*	WCA1, RBBP	9	10	2	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Little Stint	*Calidris minuta*		1	1	1	2017	No	yes	Not qualifying features in NSN/Ramsar	
Long-eared Owl	*Asio otus*	RBBP	2	4	2	2018	No	yes	Not qualifying features in NSN/Ramsar	
Magpie	*Pica pica*		11	11	1	2020	No	No	Not qualifying features in NSN/Ramsar	
Mallard	*Anas platyrhynchos*	BoCC5: Amber	12	51	23	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Mandarin Duck	*Aix galericulata*		5	9	4	2016	No	Yes	Not qualifying features in NSN/Ramsar	
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1,	7	52	46	2020	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
		RBBP, BirdsDir: A1								
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	23	33	5	2021	No	No	Not qualifying features in NSN/Ramsar	
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	19	98	50	2020	No	No	Not qualifying features in NSN/Ramsar	
Mediterranean Gull	*Ichthyaetus melanocephalus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	3	3	1	2015	No	Yes	Not qualifying features in NSN/Ramsar	
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	4	23	20	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	47	84	17	2021	No	No	Not qualifying features in NSN/Ramsar	
Montagu's Harrier	*Circus pygargus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	57	144	29	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Mute Swan	*Cygnus olor*		39	195	52	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (1.32 km)	
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	26	28	2	2020	No	No	Not qualifying features in NSN/Ramsar	
Nuthatch	*Sitta europaea*		7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar	
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	6	6	1	2016	No	Yes	Not qualifying features in NSN/Ramsar	
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	16	64	39	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	13	31	18	2020	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Pheasant	*Phasianus colchicus*		5	5	1	2019	No	No	Not qualifying features in NSN/Ramsar	
Pied Wagtail	*Motacilla alba*		11	29	19	2020	No	No	Not qualifying features in NSN/Ramsar	
Pink-footed Goose	*Anser brachyrhynchus*	BoCC5: Amber, RBBP	5	35	30	2019	No	Yes	Not qualifying features in NSN/Ramsar	
Pintail	*Anas acuta*	BoCC5: Amber	9	42	16	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	6	9	4	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Red Kite	*Milvus milvus*	WCA1	33	38	3	2021	No	Yes	Not qualifying features in NSN/Ramsar	
Red-crested Pochard	*Netta rufina*		1	1	1	2016	No	Yes	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Red-legged Partridge	*Alectoris rufa*		10	10	1	2019	No	No	Not qualifying features in NSN/Ramsar	
Red-necked Grebe	*Podiceps grisegena*	BoCC5: Red, RBBP	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar	
Redshank	*Tringa totanus*	BoCC5: Amber	11	37	8	2020	Yes	yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Redstart	*Phoenicurus phoenicurus*	BoCC5: Amber	2	2	1	2015	No	No	Not qualifying features in NSN/Ramsar	
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	43	426	100	2020	No	No	Not qualifying features in NSN/Ramsar	
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	24	62	30	2020	No	No	Not qualifying features in NSN/Ramsar	
Ring Ouzel	*Turdus torquatus*	BoCC5: Red, S41	2	3	2	2016	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Ringed Plover	*Charadrius hiaticula*	BoCC5: Red	5	12	8	2015	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (6.35 km)	
Robin	*Erithacus rubecula*		7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar	
Rock Dove	*Columba livia*		21	73	30	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Rock Pipit	*Anthus petrosus*		1	1	1	2017	No	No	Not qualifying features in NSN/Ramsar	
Rook	*Corvus frugilegus*	BoCC5: Amber	98	1784	1025	2021	No	No	Not qualifying features in NSN/Ramsar	
Ruddy Shelduck	*Tadorna ferruginea*		2	2	1	2009	No	Yes	Not qualifying features in NSN/Ramsar	
Ruff	*Calidris pugnax*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	9	11	3	2019	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries Ramsar (6.35 km)	
Sand Martin	*Riparia riparia*		7	47	41	2020	No	No	Not qualifying features in NSN/Ramsar	
Sedge Warbler	*Acrocephalus schoenobaenus*	BoCC5: Amber	6	7	2	2017	No	No	Not qualifying features in NSN/Ramsar	
Shag	*Gulosus aristotelis*	BoCC5: Red	1	1	1	2008	No	Yes	Not qualifying features in NSN/Ramsar	
Shelduck	*Tadorna tadorna*	BoCC5: Amber	25	108	24	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	6	6	1	2015	No	Yes	Not qualifying features in NSN/Ramsar	
Shoveler	*Spatula clypeata*	BoCC5: Amber, RBBP	6	85	26	2020	Yes	Yes	Equal distance to Stour and Orwell	

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									Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.1 km)	
Siskin	*Spinus spinus*		1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar	
Skylark	*Alauda arvensis*	BoCC5: Red, S41	58	155	20	2021	No	No	Not qualifying features in NSN/Ramsar	
Smew	*Mergellus albellus*	BoCC5: Red, RBBP	1	1	1	2017	No	Yes	Not qualifying features in NSN/Ramsar	
Snipe	*Gallinago gallinago*	BoCC5: Amber	15	47	16	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Song Thrush	*Turdus philomelos*	BoCC5: Amber	74	128	18	2021	No	No	Not qualifying features in NSN/Ramsar	
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	48	64	14	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	30	48	9	2020	No	No	Not qualifying features in NSN/Ramsar	

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Spotted Redshank	*Tringa erythropus*	BoCC5: Amber	1	1	1	2017	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (8.9 km)	
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	143	632	150	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Stock Dove	*Columba oenas*	BoCC5: Amber	16	47	17	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Stonechat	*Saxicola rubicola*		4	17	14	2019	No	No	Not qualifying features in NSN/Ramsar	
Swallow	*Hirundo rustica*		22	55	21	2020	No	No	Not qualifying features in NSN/Ramsar	
Swift	*Apus apus*	BoCC5: Red	85	407	70	2021	No	No	Not qualifying features in NSN/Ramsar	
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	20	23	2	2020	No	Yes	Not qualifying features in NSN/Ramsar	

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Teal	*Anas crecca*	BoCC5: Amber	19	355	100	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Tree Sparrow	*Passer montanus*	BoCC5: Red, S41	4	14	8	2012	No	No	Not qualifying features in NSN/Ramsar	
Treecreeper	*Certhia familiaris*		2	2	1	2017	No	No	Not qualifying features in NSN/Ramsar	
Tufted Duck	*Aythya fuligula*		19	108	52	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	97	117	17	2021	No	Yes	Not qualifying features in NSN/Ramsar	
Water Rail	*Rallus aquaticus*	RBBP	8	8	1	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.54 km)	
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	7	7	1	2018	No	No	Not qualifying features in NSN/Ramsar	

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature		Collision Risk Species	Nearest NSN/ Ramsar
Whimbrel	*Numenius phaeopus*	BoCC5: Red, WCA1, RBBP	3	5	3	2018	No	Yes	Not qualifying features in NSN/Ramsar	
Whinchat	*Saxicola rubetra*	BoCC5: Red	3	3	1	2011	No	No	Not qualifying features in NSN/Ramsar	
White-fronted Goose	*Anser albifrons*	BoCC5: Red, S41	7	359	200	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Whitethroat	*Curruca communis*	BoCC5: Amber	44	92	39	2020	No	No	Not qualifying features in NSN/Ramsar	
Whooper Swan	*Cygnus cygnus*	BoCC5: Amber, WCA1, RBBP	4	6	2	2015	No	Yes	Not qualifying features in NSN/Ramsar	
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	8	1676	1000	2020	Yes	Yes	Equal distance to Stour and Orwell Estuaries SPA and Stour and Orwell Estuaries Ramsar (2.54 km)	
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	26	29	3	2020	No	No	Not qualifying features in NSN/Ramsar	

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Wood Sandpiper	*Tringa glareola*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	5	8	4	2015	No	Yes	Not qualifying features in NSN/Ramsar	
Woodcock	*Scolopax rusticola*	BoCC5: Red	22	29	4	2019	No	Yes	Not qualifying features in NSN/Ramsar	
Woodpigeon	*Columba palumbus*	BoCC5: Amber	20	20	1	2020	No	Yes	Not qualifying features in NSN/Ramsar	
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	86	148	14	2021	No	No	Not qualifying features in NSN/Ramsar	
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	20	81	29	2020	No	No	Not qualifying features in NSN/Ramsar	
Yellow-browed Warbler	*Phylloscopus inornatus*	BoCC5: Amber	1	1	1	2018	No	No	Not qualifying features in NSN/Ramsar	
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	66	307	120	2020	No	No	Not qualifying features in NSN/Ramsar	
Yellow-legged Gull	*Larus michahellis*	BoCC5: Amber, RBBP	3	3	1	2019	No	Yes	Not qualifying features in NSN/Ramsar	

Table A8.5.11: Colchester District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Barn Owl	*Tyto alba*	WCA1	1	1	1	2010	No	Yes	Not qualifying features in NSN/Ramsar
Blackbird	*Turdus merula*		8	157	27	2020	No	No	Not qualifying features in NSN/Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	4	23	15	2015	No	Yes	Not qualifying features in NSN/Ramsar
Blue Tit	*Cyanistes caeruleus*		9	162	29	2020	No	No	Not qualifying features in NSN/Ramsar
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	2	2	1	2011	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		8	111	34	2020	No	Yes	Not qualifying features in NSN/Ramsar
Carrion Crow	*Corvus corone*		3	59	25	2019	No	No	Not qualifying features in NSN/Ramsar
Collared Dove	*Streptopelia decaocto*		3	47	18	2018	No	Yes	Not qualifying features in NSN/Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	1	1	1	2010	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	1	1	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Coot	*Fulica atra*		2	29	28	2011	No	Yes	Not qualifying features in NSN/Ramsar
Cormorant	*Phalacrocorax carbo*		2	8	7	2010	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (10.8 km)
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	8	56	17	2020	No	No	Not qualifying features in NSN/Ramsar
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	3	83	70	2016	No	No	Not qualifying features in NSN/Ramsar
Gadwall	*Mareca strepera*	BoCC5: Amber	2	3	2	2011	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (11.2 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Goldfinch	*Carduelis carduelis*		3	63	27	2020	No	No	Not qualifying features in NSN/Ramsar
Great Spotted Woodpecker	*Dendrocopos major*		2	36	22	2020	No	No	Not qualifying features in NSN/Ramsar
Great Tit	*Parus major*		5	80	26	2019	No	No	Not qualifying features in NSN/Ramsar
Green Woodpecker	*Picus viridis*		3	48	22	2020	No	No	Not qualifying features in NSN/Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	5	17	13	2018	No	No	Not qualifying features in NSN/Ramsar
Grey Heron	*Ardea cinerea*		2	3	2	2017	No	Yes	Not qualifying features in NSN/Ramsar
Grey Partridge	*Perdix perdix*	BoCC5: Red, S41	2	4	2	2016	No	No	Not qualifying features in NSN/Ramsar
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	3	33	16	2020	No	No	Not qualifying features in NSN/Ramsar
Greylag Goose	*Anser anser*	BoCC5: Amber	2	3	2	2017	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	1	15	15	2014	No	Yes	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	2	16	15	2019	No	No	Not qualifying features in NSN/Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	5	19	13	2018	No	No	Not qualifying features in NSN/Ramsar
Jackdaw	*Coloeus monedula*		2	27	14	2018	No	No	Not qualifying features in NSN/Ramsar
Jay	*Garrulus glandarius*		2	32	18	2019	No	No	Not qualifying features in NSN/Ramsar
Kestrel	*Falco tinnunculus*	BoCC5: Amber	5	21	17	2020	No	Yes	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	1	4	4	2017	No	No	Not qualifying features in NSN/Ramsar
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	3	47	25	2016	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (10.8 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	1526	3991	13	2020	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	21	49	16	2020	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	14	14	1	2020	Yes	yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (5.7 km)
Little Grebe	*Tachybaptus ruficollis*		11	12	2	2020	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (6.22 km)
Little Gull	*Hydrocoloeus minutus*	WCA1, RBBP	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Little Owl	*Athene noctua*		24	25	2	2020	No	Yes	Not qualifying features in NSN/Ramsar
Magpie	*Pica pica*		35	58	24	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	13	13	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		3	4	2	2019	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	1	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	1	1	1	2010	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	10	13	4	2020	No	No	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	4	4	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	19	19	1	2020	No	No	Not qualifying features in NSN/Ramsar
Montagu's Harrier	*Circus pygargus*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	13	17	5	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		13	18	6	2020	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (7.62 km)
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	6	6	1	2020	No	No	Not qualifying features in NSN/Ramsar
Nuthatch	*Sitta europaea*		5	5	1	2020	No	No	Not qualifying features in NSN/Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	6	6	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Pheasant	*Phasianus colchicus*		18	36	19	2020	No	No	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		14	27	14	2020	No	No	Not qualifying features in NSN/Ramsar
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	2	3	2	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Red Kite	*Milvus milvus*	WCA1	17	17	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-crested Pochard	*Netta rufina*		1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Red-legged Partridge	*Alectoris rufa*		13	32	20	2020	No	No	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	18	69	40	2020	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	17	24	6	2020	No	No	Not qualifying features in NSN/Ramsar
Ring Ouzel	*Turdus torquatus*	BoCC5: Red, S41	1	1	1	2015	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		39	155	26	2020	No	No	Not qualifying features in NSN/Ramsar
Rock Dove	*Columba livia*		3	3	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	19	19	1	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Rough-legged Buzzard	*Buteo lagopus*	RBBP	2	2	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Ruff	*Calidris pugnax*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2015	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (11.8 km)
Sand Martin	*Riparia riparia*		5	5	1	2020	No	No	Not qualifying features in NSN/Ramsar
Shelduck	*Tadorna tadorna*	BoCC5: Amber	4	4	1	2020	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (6.22 km)
Siskin	*Spinus spinus*		5	5	1	2018	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	31	47	17	2020	No	No	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	3	3	1	2019	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Snow Bunting	*Plectrophenax nivalis*	BoCC5: Amber, WCA1, RBBP	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	31	34	3	2020	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	23	49	27	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	11	11	1	2020	No	No	Not qualifying features in NSN/Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	38	72	22	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	13	32	20	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stonechat	*Saxicola rubicola*		3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		20	33	14	2020	No	No	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	29	111	28	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	5	5	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	5	5	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Tree Sparrow	*Passer montanus*	BoCC5: Red, S41	1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		12	12	1	2020	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		6	6	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	54	60	6	2020	No	Yes	Not qualifying features in NSN/Ramsar
Waxwing	*Bombycilla garrulus*	RBBP	6	38	33	2017	No	No	Not qualifying features in NSN/Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	2	2	1	2020	No	No	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Whitethroat	*Curruca communis*	BoCC5: Amber	3	3	1	2011	No	No	Not qualifying features in NSN/Ramsar
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	1	3	3	2009	Yes	Yes	Equal distance to Abberton Reservoir SPA and Abberton Reservoir Ramsar (12.24 km)
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	21	21	1	2020	No	No	Not qualifying features in NSN/Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	8	10	3	2019	No	Yes	Not qualifying features in NSN/Ramsar
Woodpigeon	*Columba palumbus*	BoCC5: Amber	40	151	28	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	30	64	21	2020	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	8	8	1	2020	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	38	65	24	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Yellow-legged Gull	*Larus michahellis*	BoCC5: Amber, RBBP	1	1	1	2015	No	Yes	Not qualifying features in NSN/Ramsar

Table A8.5.12 - Braintree District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Blackbird	*Turdus merula*		4	404	272	2020	No	No	Not qualifying features in NSN/Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	3	271	211	2020	No	Yes	Not qualifying features in NSN/Ramsar
Blue Tit	*Cyanistes caeruleus*		3	366	283	2020	No	No	Not qualifying features in NSN/Ramsar
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	1	19	19	2015	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		4	272	208	2020	No	Yes	Not qualifying features in NSN/Ramsar
Canada Goose	*Branta canadensis*		1	37	37	2015	No	Yes	Not qualifying features in NSN/Ramsar
Carrion Crow	*Corvus corone*		3	360	282	2020	No	No	Not qualifying features in NSN/Ramsar
Coal Tit	*Periparus ater*		1	70	70	2015	No	No	Not qualifying features in NSN/Ramsar
Collared Dove	*Streptopelia decaocto*		3	378	278	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	1	26	26	2015	No	Yes	Not qualifying features in NSN/Ramsar
Coot	*Fulica atra*		1	279	279	2015	No	Yes	Not qualifying features in NSN/Ramsar
Cormorant	*Phalacrocorax carbo*		1	106	106	2015	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (13.88 km)
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	1	39	39	2015	No	No	Not qualifying features in NSN/Ramsar
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	3	268	201	2020	No	No	Not qualifying features in NSN/Ramsar
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	1	68	68	2015	No	No	Not qualifying features in NSN/Ramsar
Gadwall	*Mareca strepera*	BoCC5: Amber	1	187	187	2015	Yes	Yes	Equal distance to Blackwater Estuary

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									(Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (13.88 km)
Goldcrest	*Regulus regulus*		1	79	79	2015	No	No	Not qualifying features in NSN/Ramsar
Goldfinch	*Carduelis carduelis*		3	236	163	2020	No	No	Not qualifying features in NSN/Ramsar
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	1	20	20	2015	No	Yes	Not qualifying features in NSN/Ramsar
Great Crested Grebe	*Podiceps cristatus*		1	71	71	2015	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (13.88 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Great Spotted Woodpecker	*Dendrocopos major*		1	105	105	2015	No	No	Not qualifying features in NSN/Ramsar
Great Tit	*Parus major*		4	365	277	2020	No	No	Not qualifying features in NSN/Ramsar
Green Woodpecker	*Picus viridis*		3	215	161	2020	No	No	Not qualifying features in NSN/Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	3	320	259	2020	No	No	Not qualifying features in NSN/Ramsar
Grey Heron	*Ardea cinerea*		1	197	197	2015	No	Yes	Not qualifying features in NSN/Ramsar
Greylag Goose	*Anser anser*	BoCC5: Amber	1	44	44	2015	No	Yes	Not qualifying features in NSN/Ramsar
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	2	81	68	2020	No	Yes	Not qualifying features in NSN/Ramsar
Hobby	*Falco subbuteo*	WCA1, RBBP	1	15	15	2015	No	Yes	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	2	123	103	2019	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	4	405	272	2020	No	No	Not qualifying features in NSN/Ramsar
Jackdaw	*Coloeus monedula*		1	224	224	2015	No	No	Not qualifying features in NSN/Ramsar
Jay	*Garrulus glandarius*		2	147	127	2019	No	No	Not qualifying features in NSN/Ramsar
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	119	104	2019	No	Yes	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	1	18	18	2015	No	No	Not qualifying features in NSN/Ramsar
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	1	40	40	2015	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (13.88 km)
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	1	38	38	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	1256	3413	12	2021	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	15	49	35	2020	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	15	55	25	2020	Yes	yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (9.67 km)
Little Grebe	*Tachybaptus ruficollis*		10	244	235	2020	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (11.17 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Little Owl	*Athene noctua*		7	7	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Little Ringed Plover	*Charadrius dubius*	WCA1, RBBP	4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Long-eared Owl	*Asio otus*	RBBP	1	1	1	2019	No	yes	Not qualifying features in NSN/Ramsar
Magpie	*Pica pica*		32	362	223	2020	No	No	Not qualifying features in NSN/Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	23	386	281	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	3	74	72	2020	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	6	33	28	2020	No	No	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	18	194	155	2020	No	No	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	21	312	230	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		14	273	260	2020	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (8.73 km)
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar
Nuthatch	*Sitta europaea*		2	2	1	2020	No	No	Not qualifying features in NSN/Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	1	1	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	5	5	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Pheasant	*Phasianus colchicus*		21	363	276	2020	No	No	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		12	26	15	2020	No	No	Not qualifying features in NSN/Ramsar
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	1	1	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Red Kite	*Milvus milvus*	WCA1	19	64	27	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-breasted Merganser	*Mergus serrator*	BoCC5: Amber, RBBP	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Red-crested Pochard	*Netta rufina*		1	1	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Red-legged Partridge	*Alectoris rufa*		25	270	211	2020	No	No	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	9	97	76	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	12	12	1	2020	No	No	Not qualifying features in NSN/Ramsar
Ring-necked Parakeet	*Psittacula krameri*		1	1	1	2018	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		27	402	256	2020	No	No	Not qualifying features in NSN/Ramsar
Rock Dove	*Columba livia*		3	3	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	13	13	1	2020	No	No	Not qualifying features in NSN/Ramsar
Ruddy Shelduck	*Tadorna ferruginea*		1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Ruff	*Calidris pugnax*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2015	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (11.17 km)

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Sand Martin	*Riparia riparia*		3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Sandwich Tern	*Thalasseus sandvicensis*	BoCC5: Amber, BirdsDir: A1	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Shelduck	*Tadorna tadorna*	BoCC5: Amber	3	19	17	2020	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (12.94 km)
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	1	1	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Siskin	*Spinus spinus*		3	3	1	2013	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	18	153	136	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	15	233	176	2020	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	11	76	51	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spoonbill	*Platalea leucorodia*	BoCC5: Amber, WCA1, RBBP	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	21	365	241	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	13	143	131	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stonechat	*Saxicola rubicola*		1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		20	135	116	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Swift	*Apus apus*	BoCC5: Red	29	269	58	2021	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	9	9	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		6	64	59	2020	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		10	230	221	2020	No	Yes	Not qualifying features in NSN/Ramsar
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	38	38	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	5	5	1	2020	No	No	Not qualifying features in NSN/Ramsar
Whimbrel	*Numenius phaeopus*	BoCC5: Red, WCA1, RBBP	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	1	23	23	2015	Yes	Yes	Equal distance to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar (13.88 km)
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar
Wood Sandpiper	*Tringa glareola*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Woodpigeon	*Columba palumbus*	BoCC5: Amber	41	466	283	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	29	362	244	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Wryneck	*Jynx torquilla*	WCA1, RBBP	1	1	1	2017	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	6	6	1	2020	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	18	38	21	2020	No	No	Not qualifying features in NSN/Ramsar

Table A8.5.13 - Chelmsford District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Blackbird	*Turdus merula*		9	298	102	2020	No	No	Not qualifying features in NSN/Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	1	28	28	2015	No	Yes	Not qualifying features in NSN/Ramsar
Blue Tit	*Cyanistes caeruleus*		9	326	117	2020	No	No	Not qualifying features in NSN/Ramsar
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	4	106	64	2020	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		4	70	20	2020	No	Yes	Not qualifying features in NSN/Ramsar
Canada Goose	*Branta canadensis*		3	45	17	2020	No	Yes	Not qualifying features in NSN/Ramsar
Carrion Crow	*Corvus corone*		8	219	71	2020	No	No	Not qualifying features in NSN/Ramsar
Collared Dove	*Streptopelia decaocto*		4	120	63	2020	No	Yes	Not qualifying features in NSN/Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	1	22	22	2015	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Coot	*Fulica atra*		1	20	20	2018	No	Yes	Not qualifying features in NSN/Ramsar
Cormorant	*Phalacrocorax carbo*		1	14	14	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (19.31 km)
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	1	25	25	2020	No	No	Not qualifying features in NSN/Ramsar
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	6	209	81	2020	No	No	Not qualifying features in NSN/Ramsar
Goldfinch	*Carduelis carduelis*		4	104	51	2020	No	No	Not qualifying features in NSN/Ramsar
Great Crested Grebe	*Podiceps cristatus*		2	45	25	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Estuaries (Mid-Essex Coast Phase 3) Ramsar (19.31 km)
Great Spotted Woodpecker	*Dendrocopos major*		4	104	43	2020	No	No	Not qualifying features in NSN/Ramsar
Great Tit	*Parus major*		8	274	99	2020	No	No	Not qualifying features in NSN/Ramsar
Green Woodpecker	*Picus viridis*		10	259	55	2020	No	No	Not qualifying features in NSN/Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	2	35	18	2020	No	No	Not qualifying features in NSN/Ramsar
Grey Heron	*Ardea cinerea*		2	31	16	2020	No	Yes	Not qualifying features in NSN/Ramsar
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	1	15	15	2018	No	Yes	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	1	19	19	2020	No	No	Not qualifying features in NSN/Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	6	163	63	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Jackdaw	*Coloeus monedula*		1	15	15	2015	No	No	Not qualifying features in NSN/Ramsar
Jay	*Garrulus glandarius*		3	117	78	2019	No	No	Not qualifying features in NSN/Ramsar
Kestrel	*Falco tinnunculus*	BoCC5: Amber	3	49	18	2020	No	Yes	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	1	18	18	2020	No	No	Not qualifying features in NSN/Ramsar
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	2	29	15	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (19.31 km)
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	3	58	23	2020	No	Yes	Not qualifying features in NSN/Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	1955	4881	13	2021	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	18	45	28	2020	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	20	36	17	2020	Yes	yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (15.95 km)
Little Grebe	*Tachybaptus ruficollis*		4	19	16	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (19.31 km)
Little Owl	*Athene noctua*		17	31	15	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Little Ringed Plover	*Charadrius dubius*	WCA1, RBBP	2	2	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Magpie	*Pica pica*		57	322	68	2020	No	No	Not qualifying features in NSN/Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	25	55	16	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	1	1	1	2017	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar
Mediterranean Gull	*Ichthyaetus melanocephalus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	2	2	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	3	3	1	2019	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	20	20	1	2020	No	No	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	14	46	19	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		10	23	14	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (16.51 km)
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar
Nuthatch	*Sitta europaea*		11	11	1	2020	No	No	Not qualifying features in NSN/Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	3	3	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	2	2	1	2017	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	4	4	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Pheasant	*Phasianus colchicus*		31	187	62	2020	No	No	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		15	39	25	2020	No	No	Not qualifying features in NSN/Ramsar
Pintail	*Anas acuta*	BoCC5: Amber	2	2	1	2020	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (18.92 km)
Quail	*Coturnix coturnix*	BoCC5: Amber, WCA1, RBBP	1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Red Kite	*Milvus milvus*	WCA1	21	21	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-legged Partridge	*Alectoris rufa*		14	28	15	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Redstart	*Phoenicurus phoenicurus*	BoCC5: Amber	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	25	56	17	2020	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	12	31	20	2020	No	No	Not qualifying features in NSN/Ramsar
Ring-necked Parakeet	*Psittacula krameri*		1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		50	342	112	2020	No	No	Not qualifying features in NSN/Ramsar
Rock Dove	*Columba livia*		5	5	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	20	34	15	2020	No	No	Not qualifying features in NSN/Ramsar
Sand Martin	*Riparia riparia*		3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Shelduck	*Tadorna tadorna*	BoCC5: Amber	3	3	1	2013	Yes	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	1	1	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Siskin	*Spinus spinus*		7	7	1	2018	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	24	150	58	2020	No	No	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	41	173	44	2020	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	37	37	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	6	6	1	2019	No	No	Not qualifying features in NSN/Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	39	198	61	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	22	59	25	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Stonechat	*Saxicola rubicola*		3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		27	89	35	2020	No	No	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	37	240	40	2021	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	13	13	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	3	3	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Tree Pipit	*Anthus trivialis*	BoCC5: Red, S41	2	2	1	2015	No	No	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		16	16	1	2020	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		5	36	19	2020	No	Yes	Not qualifying features in NSN/Ramsar
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	21	21	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Waxwing	*Bombycilla garrulus*	RBBP	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	8	8	1	2020	No	No	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	2	2	1	2013	No	No	Not qualifying features in NSN/Ramsar
White-fronted Goose	*Anser albifrons*	BoCC5: Red, S41	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	2	2	1	2017	Yes	Yes	Equal distance to Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar (19.31 km)
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	18	38	21	2020	No	No	Not qualifying features in NSN/Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	9	9	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Woodpigeon	*Columba palumbus*	BoCC5: Amber	57	401	105	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	33	346	107	2020	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	5	5	1	2019	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	30	173	54	2020	No	No	Not qualifying features in NSN/Ramsar

Table A8.5. 14: Basildon and Brentwood District

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	1	14	14	2014	No	No	Not qualifying features in NSN/Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	1205	2797	12	2021	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	21	21	1	2020	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	9	9	1	2020	Yes	yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (8.05 km)
Little Grebe	*Tachybaptus ruficollis*		3	3	1	2019	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (10.48 km)
Little Owl	*Athene noctua*		11	11	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Magpie	*Pica pica*		32	47	16	2020	No	No	Not qualifying features in NSN/Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	19	19	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	1	1	1	2017	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	5	5	1	2020	No	No	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	18	18	1	2020	No	No	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	12	12	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		6	6	1	2020	Yes	Yes	Equal distance to Thames Estuary &

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Marshes SPA and Thames Estuary & Marshes Ramsar (9.44 km)
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	2	2	1	2020	No	No	Not qualifying features in NSN/Ramsar
Nuthatch	*Sitta europaea*		11	11	1	2020	No	No	Not qualifying features in NSN/Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	2	2	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	1	1	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Pheasant	*Phasianus colchicus*		25	25	1	2020	No	No	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		18	18	1	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	1	1	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Red Kite	*Milvus milvus*	WCA1	8	8	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-legged Partridge	*Alectoris rufa*		4	4	1	2019	No	No	Not qualifying features in NSN/Ramsar
Redstart	*Phoenicurus phoenicurus*	BoCC5: Amber	1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	13	13	1	2020	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	18	18	1	2020	No	No	Not qualifying features in NSN/Ramsar
Ring-necked Parakeet	*Psittacula krameri*		4	4	1	2020	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		36	36	1	2020	No	No	Not qualifying features in NSN/Ramsar
Rock Dove	*Columba livia*		8	8	1	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	11	11	1	2020	No	No	Not qualifying features in NSN/Ramsar
Rough-legged Buzzard	*Buteo lagopus*	RBBP	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Sand Martin	*Riparia riparia*		1	1	1	2020	No	No	Not qualifying features in NSN/Ramsar
Siskin	*Spinus spinus*		1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	26	26	1	2020	No	No	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	5	5	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	29	29	1	2020	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	21	45	25	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	3	3	1	2018	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	26	26	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	12	12	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		27	27	1	2020	No	No	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	22	52	17	2021	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	7	7	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	1	1	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		10	10	1	2020	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		3	3	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Waxwing	*Bombycilla garrulus*	RBBP	3	3	1	2013	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar
Woodpigeon	*Columba palumbus*	BoCC5: Amber	31	46	16	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	25	25	1	2020	No	No	Not qualifying features in NSN/Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	10	10	1	2020	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	16	16	1	2019	No	No	Not qualifying features in NSN/Ramsar

Table A8.5.15: Thurrock Council

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Avocet	*Recurvirostra avosetta*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	17	568	94	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Barn Owl	*Tyto alba*	WCA1	3	102	43	2020	No	Yes	Not qualifying features in NSN/Ramsar
Bar-tailed Godwit	*Limosa lapponica*	BoCC5: Amber, RBBP, BirdsDir: A1	8	248	57	2020	No	Yes	Not qualifying features in NSN/Ramsar
Black Tern	*Chlidonias niger*	WCA1, RBBP	1	22	22	2018	No	Yes	Not qualifying features in NSN/Ramsar
Blackbird	*Turdus merula*		13	507	150	2020	No	No	Not qualifying features in NSN/Ramsar
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	12	379	87	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Black-tailed Godwit	*Limosa limosa*	BoCC5: Red, S41, WCA1, RBBP	14	560	94	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Blue Tit	*Cyanistes caeruleus*		12	482	152	2020	No	No	Not qualifying features in NSN/Ramsar
Brent Goose	*Branta bernicla*	BoCC5: Amber, S41	1	22	22	2014	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0.43 km)
Bullfinch	*Pyrrhula pyrrhula*	BoCC5: Amber, S41	3	190	91	2019	No	No	Not qualifying features in NSN/Ramsar
Buzzard	*Buteo buteo*		13	399	57	2020	No	Yes	Not qualifying features in NSN/Ramsar
Canada Goose	*Branta canadensis*		7	239	65	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Carrion Crow	*Corvus corone*		10	421	140	2020	No	No	Not qualifying features in NSN/Ramsar
Cetti's Warbler	*Cettia cetti*	WCA1	9	281	80	2020	No	No	Not qualifying features in NSN/Ramsar
Coal Tit	*Periparus ater*		1	28	28	2019	No	No	Not qualifying features in NSN/Ramsar
Collared Dove	*Streptopelia decaocto*		7	324	98	2020	No	Yes	Not qualifying features in NSN/Ramsar
Common Gull	*Larus canus*	BoCC5: Amber	4	73	22	2020	No	Yes	Not qualifying features in NSN/Ramsar
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	4	95	38	2019	No	Yes	Not qualifying features in NSN/Ramsar
Common Scoter	*Melanitta nigra*	BoCC5: Red, S41, WCA1, RBBP	2	45	28	2019	No	yes	Not qualifying features in NSN/Ramsar
Common Tern	*Sterna hirundo*	BoCC5: Amber, BirdsDir: A1	7	157	35	2020	No	yes	Not qualifying features in NSN/Ramsar
Coot	*Fulica atra*		10	437	99	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Cormorant	*Phalacrocorax carbo*		7	190	73	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Corn Bunting	*Emberiza calandra*	BoCC5: Red, S41	5	104	28	2020	No	No	Not qualifying features in NSN/Ramsar
Cuckoo	*Cuculus canorus*	BoCC5: Red, S41	5	99	28	2020	No	No	Not qualifying features in NSN/Ramsar
Curlew	*Numenius arquata*	BoCC5: Red, S41	15	543	108	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Curlew Sandpiper	*Calidris ferruginea*	BoCC5: Amber	3	60	27	2019	No	Yes	Not qualifying features in NSN/Ramsar
Dartford Warbler	*Sylvia undata*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	13	13	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Dunlin	*Calidris alpina*	BoCC5: Red	7	251	81	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	9	316	150	2020	No	No	Not qualifying features in NSN/Ramsar
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	4	71	20	2020	No	No	Not qualifying features in NSN/Ramsar
Firecrest	*Regulus ignicapilla*	WCA1, RBBP	1	17	17	2019	No	No	Not qualifying features in NSN/Ramsar
Gadwall	*Mareca strepera*	BoCC5: Amber	3	69	36	2017	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Goldcrest	*Regulus regulus*		3	196	130	2019	No	No	Not qualifying features in NSN/Ramsar
Goldeneye	*Bucephala clangula*	BoCC5: Red, RBBP	5	98	42	2020	Yes	Yes	Equal distance to Thames Estuary &

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Marshes SPA and Thames Estuary & Marshes Ramsar (0.26 km)
Goldfinch	*Carduelis carduelis*		13	475	101	2020	No	No	Not qualifying features in NSN/Ramsar
Grasshopper Warbler	*Locustella naevia*	BoCC5: Red, S41	2	27	14	2019	No	No	Not qualifying features in NSN/Ramsar
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	2	53	31	2020	No	Yes	Not qualifying features in NSN/Ramsar
Great Crested Grebe	*Podiceps cristatus*		8	307	93	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0.26 km)
Great Spotted Woodpecker	*Dendrocopos major*		7	415	153	2020	No	No	Not qualifying features in NSN/Ramsar
Great Tit	*Parus major*		11	433	151	2020	No	No	Not qualifying features in NSN/Ramsar
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	9	290	59	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Green Woodpecker	*Picus viridis*		11	537	143	2020	No	No	Not qualifying features in NSN/Ramsar
Greenfinch	*Chloris chloris*	BoCC5: Red	4	144	67	2020	No	No	Not qualifying features in NSN/Ramsar
Greenshank	*Tringa nebularia*	BoCC5: Amber, WCA1, RBBP	2	30	17	2019	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0.26 km)
Grey Heron	*Ardea cinerea*		2	71	38	2019	No	Yes	Not qualifying features in NSN/Ramsar
Grey Plover	*Pluvialis squatarola*	BoCC5: Amber	10	435	75	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	2	50	31	2017	No	No	Not qualifying features in NSN/Ramsar
Greylag Goose	*Anser anser*	BoCC5: Amber	6	212	68	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Hawfinch	*Coccothraustes coccothraustes*	BoCC5: Red, RBBP	1	22	22	2018	No	No	Not qualifying features in NSN/Ramsar
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	5	127	37	2020	No	Yes	Not qualifying features in NSN/Ramsar
Hobby	*Falco subbuteo*	WCA1, RBBP	2	40	23	2018	No	Yes	Not qualifying features in NSN/Ramsar
House Martin	*Delichon urbicum*	BoCC5: Red	1	16	16	2018	No	No	Not qualifying features in NSN/Ramsar
House Sparrow	*Passer domesticus*	BoCC5: Red, S41	9	350	126	2020	No	No	Not qualifying features in NSN/Ramsar
Jackdaw	*Coloeus monedula*		2	61	36	2018	No	No	Not qualifying features in NSN/Ramsar
Jay	*Garrulus glandarius*		3	179	147	2020	No	No	Not qualifying features in NSN/Ramsar
Kestrel	*Falco tinnunculus*	BoCC5: Amber	8	193	49	2020	No	Yes	Not qualifying features in NSN/Ramsar
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	15	403	60	2020	No	No	Not qualifying features in NSN/Ramsar
Kittiwake	*Rissa tridactyla*	BoCC5: Red	1	21	21	2018	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Knot	*Calidris canutus*	BoCC5: Amber	6	155	38	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	9	219	38	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	4	84	28	2020	No	Yes	Not qualifying features in NSN/Ramsar
Lesser Redpoll	*Acanthis cabaret*	BoCC5: Red, S41	3	55	27	2018	No	No	Not qualifying features in NSN/Ramsar
Lesser Spotted Woodpecker	*Dryobates minor*	BoCC5: Red, S41, RBBP	4746	15560	13	2020	No	No	Not qualifying features in NSN/Ramsar
Linnet	*Linaria cannabina*	BoCC5: Red, S41	49	204	33	2020	No	No	Not qualifying features in NSN/Ramsar
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	39	289	62	2020	Yes	yes	Equal distance to Thames Estuary &

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Little Grebe	*Tachybaptus ruficollis*		38	443	79	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0km)
Little Gull	*Hydrocoloeus minutus*	WCA1, RBBP	12	12	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Little Owl	*Athene noctua*		11	46	36	2020	No	Yes	Not qualifying features in NSN/Ramsar
Little Ringed Plover	*Charadrius dubius*	WCA1, RBBP	10	107	36	2020	No	Yes	Not qualifying features in NSN/Ramsar
Little Stint	*Calidris minuta*		9	64	41	2020	No	yes	Not qualifying features in NSN/Ramsar
Little Tern	*Sternula albifrons*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	11	11	1	2020	No	yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Long-eared Owl	*Asio otus*	RBBP	7	7	1	2020	No	yes	Not qualifying features in NSN/Ramsar
Long-tailed Skua	*Stercorarius longicaudus*		1	1	1	2018	No	yes	Not qualifying features in NSN/Ramsar
Magpie	*Pica pica*		62	527	153	2020	No	No	Not qualifying features in NSN/Ramsar
Mallard	*Anas platyrhynchos*	BoCC5: Amber	51	556	143	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mandarin Duck	*Aix galericulata*		1	1	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Manx Shearwater	*Puffinus puffinus*	BoCC5: Amber, BirdsDir: A1	2	2	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	34	367	67	2020	No	Yes	Not qualifying features in NSN/Ramsar
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	1	1	1	2017	No	No	Not qualifying features in NSN/Ramsar
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	43	137	24	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Mediterranean Gull	*Ichthyaetus melanocephalus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	17	104	28	2018	No	Yes	Not qualifying features in NSN/Ramsar
Merlin	*Falco columbarius*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	8	8	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	23	78	24	2020	No	No	Not qualifying features in NSN/Ramsar
Moorhen	*Gallinula chloropus*	BoCC5: Amber	44	336	137	2020	No	Yes	Not qualifying features in NSN/Ramsar
Mute Swan	*Cygnus olor*		21	203	56	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Nightingale	*Luscinia megarhynchos*	BoCC5: Red	17	57	23	2020	No	No	Not qualifying features in NSN/Ramsar
Nuthatch	*Sitta europaea*		6	21	16	2018	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Osprey	*Pandion haliaetus*	BoCC5: Amber, WCA1, RBBP	3	3	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Oystercatcher	*Haematopus ostralegus*	BoCC5: Amber	34	327	51	2020	No	Yes	Not qualifying features in NSN/Ramsar
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	22	118	29	2020	No	Yes	Not qualifying features in NSN/Ramsar
Pheasant	*Phasianus colchicus*		30	103	33	2020	No	No	Not qualifying features in NSN/Ramsar
Pied Flycatcher	*Ficedula hypoleuca*	BoCC5: Amber	4	4	1	2019	No	No	Not qualifying features in NSN/Ramsar
Pied Wagtail	*Motacilla alba*		33	71	26	2020	No	No	Not qualifying features in NSN/Ramsar
Pintail	*Anas acuta*	BoCC5: Amber	7	23	17	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0.13 km)
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	23	162	97	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Quail	*Coturnix coturnix*	BoCC5: Amber, WCA1, RBBP	1	1	1	2016	No	No	Not qualifying features in NSN/Ramsar
Razorbill	*Alca torda*	BoCC5: Amber	4	4	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red Kite	*Milvus milvus*	WCA1	13	13	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-breasted Merganser	*Mergus serrator*	BoCC5: Amber, RBBP	6	6	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Red-legged Partridge	*Alectoris rufa*		19	19	1	2020	No	No	Not qualifying features in NSN/Ramsar
Red-necked Grebe	*Podiceps grisegena*	BoCC5: Red, RBBP	1	1	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Redshank	*Tringa totanus*	BoCC5: Amber	23	194	52	2017	Yes	yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Redstart	*Phoenicurus phoenicurus*	BoCC5: Amber	5	5	1	2020	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Red-throated Diver	*Gavia stellata*	WCA1, RBBP	5	5	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	27	146	70	2020	No	No	Not qualifying features in NSN/Ramsar
Reed Bunting	*Emberiza schoeniclus*	BoCC5: Amber, S41	36	106	24	2020	No	No	Not qualifying features in NSN/Ramsar
Ring Ouzel	*Turdus torquatus*	BoCC5: Red, S41	2	2	1	2017	No	No	Not qualifying features in NSN/Ramsar
Ringed Plover	*Charadrius hiaticula*	BoCC5: Red	34	355	71	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Ring-necked Parakeet	*Psittacula krameri*		33	173	67	2020	No	No	Not qualifying features in NSN/Ramsar
Robin	*Erithacus rubecula*		58	536	162	2020	No	No	Not qualifying features in NSN/Ramsar
Rock Dove	*Columba livia*		17	32	16	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Rock Pipit	*Anthus petrosus*		12	34	23	2020	No	No	Not qualifying features in NSN/Ramsar
Rook	*Corvus frugilegus*	BoCC5: Amber	24	62	26	2020	No	No	Not qualifying features in NSN/Ramsar
Roseate Tern	*Sterna dougallii*	BoCC5: Red, S41, WCA1, RBBP, BirdsDir: A1	1	1	1	2016	No	Yes	Not qualifying features in NSN/Ramsar
Rough-legged Buzzard	*Buteo lagopus*	RBBP	3	3	1	2017	No	Yes	Not qualifying features in NSN/Ramsar
Ruddy Duck	*Oxyura jamaicensis*		2	2	1	2013	No	Yes	Not qualifying features in NSN/Ramsar
Ruff	*Calidris pugnax*	BoCC5: Red, WCA1, RBBP, BirdsDir: A1	7	7	1	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Sabine's Gull	*Xema sabini*		1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Sand Martin	*Riparia riparia*		23	42	20	2020	No	No	Not qualifying features in NSN/Ramsar
Sanderling	*Calidris alba*	BoCC5: Amber, RBBP	6	6	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Sandwich Tern	*Thalasseus sandvicensis*	BoCC5: Amber, BirdsDir: A1	14	37	24	2018	No	Yes	Not qualifying features in NSN/Ramsar
Scaup	*Aythya marila*	BoCC5: Red, S41, WCA1, RBBP	5	5	1	2016	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Shelduck	*Tadorna tadorna*	BoCC5: Amber	42	360	106	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Short-eared Owl	*Asio flammeus*	BoCC5: Amber, RBBP, BirdsDir: A1	19	41	23	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Siskin	*Spinus spinus*		9	24	16	2018	No	No	Not qualifying features in NSN/Ramsar
Skylark	*Alauda arvensis*	BoCC5: Red, S41	45	105	24	2020	No	No	Not qualifying features in NSN/Ramsar
Slavonian Grebe	*Podiceps auritus*	BoCC5: Red, WCA1, RBBP	3	3	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Snipe	*Gallinago gallinago*	BoCC5: Amber	12	45	21	2020	No	Yes	Not qualifying features in NSN/Ramsar
Snow Bunting	*Plectrophenax nivalis*	BoCC5: Amber, WCA1, RBBP	3	3	1	2020	No	No	Not qualifying features in NSN/Ramsar
Snowy Owl	*Bubo scandiacus*	WCA1, RBBP, BirdsDir: A1	1	1	1	2014	No	Yes	Not qualifying features in NSN/Ramsar
Song Thrush	*Turdus philomelos*	BoCC5: Amber	45	279	157	2020	No	No	Not qualifying features in NSN/Ramsar
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	46	402	73	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spoonbill	*Platalea leucorodia*	BoCC5: Amber, WCA1, RBBP	9	9	1	2020	No	Yes	Not qualifying features in NSN/Ramsar
Spotted Flycatcher	*Muscicapa striata*	BoCC5: Red, S41	7	7	1	2019	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Spotted Redshank	*Tringa erythropus*	BoCC5: Amber	1	1	1	2017	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0.68 km)
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	54	446	100	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stock Dove	*Columba oenas*	BoCC5: Amber	27	71	32	2020	No	Yes	Not qualifying features in NSN/Ramsar
Stonechat	*Saxicola rubicola*		45	406	86	2020	No	No	Not qualifying features in NSN/Ramsar
Swallow	*Hirundo rustica*		46	108	32	2020	No	No	Not qualifying features in NSN/Ramsar
Swift	*Apus apus*	BoCC5: Red	33	190	20	2020	No	No	Not qualifying features in NSN/Ramsar
Tawny Owl	*Strix aluco*	BoCC5: Amber, BirdsDir: A1	5	75	55	2020	No	Yes	Not qualifying features in NSN/Ramsar
Teal	*Anas crecca*	BoCC5: Amber	51	560	96	2020	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Tree Pipit	*Anthus trivialis*	BoCC5: Red, S41	7	7	1	2020	No	No	Not qualifying features in NSN/Ramsar
Tree Sparrow	*Passer montanus*	BoCC5: Red, S41	4	4	1	2020	No	No	Not qualifying features in NSN/Ramsar
Treecreeper	*Certhia familiaris*		4	163	117	2019	No	No	Not qualifying features in NSN/Ramsar
Tufted Duck	*Aythya fuligula*		42	439	98	2020	No	Yes	Not qualifying features in NSN/Ramsar
Turnstone	*Arenaria interpres*	BoCC5: Amber, RBBP	17	156	62	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	8	8	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Twite	*Linaria flavirostris*	BoCC5: Red, S41	2	2	1	2018	No	No	Not qualifying features in NSN/Ramsar
Velvet Scoter	*Melanitta fusca*	BoCC5: Red, WCA1, RBBP	2	2	1	2019	No	Yes	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Water Pipit	*Anthus spinoletta*	BoCC5: Amber	7	7	1	2019	No	No	Not qualifying features in NSN/Ramsar
Water Rail	*Rallus aquaticus*	RBBP	21	39	19	2020	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary & Marshes Ramsar (0 km)
Waxwing	*Bombycilla garrulus*	RBBP	4	4	1	2013	No	No	Not qualifying features in NSN/Ramsar
Wheatear	*Oenanthe oenanthe*	BoCC5: Amber	18	51	18	2020	No	No	Not qualifying features in NSN/Ramsar
Whimbrel	*Numenius phaeopus*	BoCC5: Red, WCA1, RBBP	26	300	95	2020	No	Yes	Not qualifying features in NSN/Ramsar
Whinchat	*Saxicola rubetra*	BoCC5: Red	9	42	34	2020	No	No	Not qualifying features in NSN/Ramsar
Whooper Swan	*Cygnus cygnus*	BoCC5: Amber, WCA1, RBBP	2	2	1	2019	No	Yes	Not qualifying features in NSN/Ramsar
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	18	88	28	2018	Yes	Yes	Equal distance to Thames Estuary & Marshes SPA and Thames Estuary &

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
									Marshes Ramsar (0 km)
Willow Warbler	*Phylloscopus trochilus*	BoCC5: Amber	16	44	29	2020	No	No	Not qualifying features in NSN/Ramsar
Wood Sandpiper	*Tringa glareola*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	2	2	1	2015	No	Yes	Not qualifying features in NSN/Ramsar
Wood Warbler	*Phylloscopus sibilatrix*	BoCC5: Red, S41	1	1	1	2014	No	No	Not qualifying features in NSN/Ramsar
Woodcock	*Scolopax rusticola*	BoCC5: Red	11	11	1	2018	No	Yes	Not qualifying features in NSN/Ramsar
Woodlark	*Lullula arborea*	S41, WCA1, RBBP, BirdsDir: A1	2	2	1	2017	No	No	Not qualifying features in NSN/Ramsar
Woodpigeon	*Columba palumbus*	BoCC5: Amber	57	553	155	2020	No	Yes	Not qualifying features in NSN/Ramsar
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	50	419	162	2020	No	No	Not qualifying features in NSN/Ramsar
Wryneck	*Jynx torquilla*	WCA1, RBBP	1	1	1	2013	No	No	Not qualifying features in NSN/Ramsar

Common name	Scientific Name	Legislative Policy Designation	Number of records	Total no. Individuals	Max Count	Most Recent Date	Qualifying/ Cited NSN/ Ramsar Feature	Collision Risk Species	Nearest NSN/ Ramsar
Yellow Wagtail	*Motacilla flava*	BoCC5: Red	15	86	19	2020	No	No	Not qualifying features in NSN/Ramsar
Yellowhammer	*Emberiza citrinella*	BoCC5: Red, S41	18	18	1	2020	No	No	Not qualifying features in NSN/Ramsar
Yellow-legged Gull	*Larus michahellis*	BoCC5: Amber, RBBP	31	175	38	2020	No	Yes	Not qualifying features in NSN/Ramsar

Annex E: Survey Dates

Table A8.5.16 - Survey dates (Visit 1-4)

Survey Location	Visit 1	Visit 2	Visit 3	Visit 4
VP1	PM: 23/09/22	AM: 04/10/22	PM: 17/10/22	AM: 01/11/22
VP2	AM: 20/09/22	PM: 03/10/22	AM: 18/10/22	PM: 31/10/22
VP3	PM: 20/09/22	AM: 04/10/22	PM: 18/10/22	AM: 01/11/22
VP4	AM: 21/09/22	PM: 04/10/22	AM: 19/10/22	PM: 01/11/22
VP5	PM: 21/09/22	AM: 04/10/22	PM: 19/10/22	AM: 03/11/22
VP6	PM:23/09/22	PM: 05/10/22	PM: 19/10/22	AM: 02/11/22
TR7	PM: 20/09/22	AM: 06/10/22	AM: 20/10/22	PM: 02/11/22
TR8	AM: 23/09/22	PM: 06/10/22	PM: 20/10/22	AM: 10/11/22
VP9	AM: 27/09/22 LW	PM:04/10/22	AM: 19/10/22	AM: 10/11/22 LW
TR10	FD: 21/09/22	FD: 12/10/22	FD: 20/10/22	FD: 11/11/22
VP11	PM: 27/09/22	PM: 05/10/22	PM: 20/10/22	AM: 04/11/22
VP12	AM: 28/09/22	PM: 06/10/22	AM: 25/10/22	PM: 03/11/22
VP13	PM: 28/09/22	PM: 06/10/22	PM: 25/10/22	AM: 11/11/22
VP14	AM: 29/09/22	PM: 05/10/22	AM: 26/10/22	PM: 07/11/22
VP15	PM: 29/09/22	AM: 07/10/22	PM: 26/10/22	PM: 09/11/22
VP16	PM: 29/09/22	AM: 11/10/22	PM: 27/10/22	AM: 09/11/22
VP17	AM: 30/09/22	AM: 07/10/22	AM: 27/10/22	AM: 04/11/22
VP18	AM: 18/09/22	PM: 11/10/22	AM: 28/10/22	PM: 10/11/22

Table A8.5.17 - Survey dates (Visit 5-8)

Survey location	Visit 5	Visit 6	Visit 7	Visit 8
VP1	PM: 17/11/22	AM: 01/12/22	PM: 14/12/22	AM: 04/01/23
VP2	AM: 17/11/22	PM: 01/12/22	AM: 14/12/22	PM: 04/01/23
VP3	PM: 14/11/22	AM: 02/12/22	PM: 15/12/22	AM: 05/01/23
VP4	AM: 15/11/22	PM: 05/12/22	AM: 15/12/22	PM: 05/01/23
VP5	PM: 15/11/22	AM: 06/12/22	PM: 13/12/22	AM: 09/01/23
VP6	PM: 24/11/22	PM: 06/12/22	AM: 13/12/22	PM: 09/01/23
TR7	AM: 24/11/22	PM: 07/12/22	AM: 13/12/22	PM: 11/01/23
TR8	AM: 25/11/22	AM: 07/12/22	PM: 13/12/22	AM: 10/01/23
VP9	AM: 16/11/22 LW	AM: 07/12/22 HW	PM: 19/12/22 LW	PM: 10/01/23 HW
TR10	FD: 23/11/22	FD: 08/12/22	FD: 13/12/22	FD: 10/01/23
VP11	PM: 15/11/22	AM: 06/12/22	PM: 22/12/22	AM: 11/01/23
VP12	AM: 15/11/22	PM: 06/12/22	AM: 16/12/22	PM: 11/01/23
VP13	PM: 16/11/22	AM: 07/12/22	PM: 20/12/22	AM: 12/01/23
VP14	AM: 16/11/22	PM: 07/12/22	AM: 20/12/22	PM: 12/01/23
VP15	AM: 17/11/22	AM: 06/12/22	PM: 21/12/22	AM: 04/01/23
VP16	PM: 22/11/22	PM: 06/12/22	AM: 21/12/22	AM: 05/01/23
VP17	PM: 16/11/22	PM: 07/12/22	AM: 14/12/22	PM: 12/01/23
VP18	AM: 22/11/22	PM: 08/12/22	AM: 12/12/22	PM: 04/01/23

Table A8.5.18 - Survey dates (Visit 9-12)

Survey Location	Visit 9	Visit 10	Visit 11	Visit 12
VP1	PM: 17/01/23	AM: 01/02/23	PM: 14/02/23	AM: 01/03/23
VP2	AM: 17/01/23	PM: 01/02/23	AM: 14/02/23	PM: 01/03/23
VP3	PM: 18/01/23	AM: 02/02/23	PM: 15/02/23	AM: 02/03/23
VP4	AM: 18/01/23	PM: 02/02/23	AM: 15/02/23	PM: 02/03/23
VP5	PM: 16/01/23	AM: 06/02/23	PM: 13/02/23	AM: 06/03/23
VP6	AM: 19/01/23	PM: 06/02/23	AM: 16/02/23	PM: 06/03/23
TR7	AM: 24/01/23	PM: 08/02/23	AM: 21/02/23	PM: 08/03/23
TR8	PM: 26/01/23	AM: 07/02/23	PM: 23/02/23	AM: 07/03/23
VP9	AM: 23/01/23	PM: 07/02/23 HW	AM: 21/02/23 HW	PM: 07/03/23 LW
TR10	FD: 25/01/23	FD: 07/02/23	FD: 22/02/23	FD: 07/03/23
VP11	PM: 24/01/23	AM: 08/02/23	PM: 21/02/23	AM: 08/03/23
VP12	AM: 25/01/23	PM: 08/02/23	AM: 22/02/23	PM: 08/03/23
VP13	PM: 25/01/23	AM: 09/02/23	PM: 22/02/23	AM: 09/03/23
VP14	AM: 26/01/23	PM: 09/02/23	AM: 23/02/23	PM: 09/03/23
VP15	PM: 17/01/23	PM: 30/01/23	PM: 14/02/23	AM: 01/03/23
VP16	PM: 18/01/23	AM: 31/01/23	PM: 15/02/23	AM: 02/03/23
VP17	AM: 19/01/23	PM: 09/02/23	AM: 16/02/23	PM: 28/02/23
VP18	AM: 17/01/23	PM: 31/01/23	AM: 14/02/23	PM: 01/03/23

AM: Morning Survey

PM: Afternoon Survey

FD: Full Day

LW: Low Water Tide

HW: High Water Tide

Annex F: Peak counts for flocks of Collision Risk Species

Table A8.5.19 - Peak counts for flocks of Collision Risk Species

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
VP01				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	200	5
Canada Goose	*Branta canadensis*		35	3
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	3	2
Kittiwake	*Rissa tridactyla*	BoCC5: Red	1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	19	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	30	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	20	3
Snipe	*Gallinago gallinago*	BoCC5: Amber	15	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	3
VP02				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	38	5
Canada Goose	*Branta canadensis*		6	1
Common Gull	*Larus canus*	BoCC5: Amber	15	1
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	30	4
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	10	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	200	3
Mallard	*Anas platyrhynchos*	BoCC5: Amber	6	3

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	100	3
Unidentified gull	*Larus sp.*	0	10	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	250	7
Whooper Swan	*Cygnus cygnus*	BoCC5: Amber, WCA1, RBBP	1	1
VP03				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	10	5
Canada Goose	*Branta canadensis*		15	1
Egyptian Goose	*Alopochen aegyptiaca*		2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	20	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	33	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	40	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	5
VP04				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	127	3
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	6	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	11	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	8	3
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	250	4
VP05				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	40	5
Canada Goose	*Branta canadensis*		10	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Common Gull	*Larus canus*	BoCC5: Amber	35	1
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	2	3
Greylag Goose	*Anser anser*	BoCC5: Amber	3	1
Golden Plover	*Pluvialis apricaria*	BirdsDir: A1	14	1
Grey Heron	*Ardea cinerea*		5	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	16	4
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	20	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	41	2
Pink-footed Goose	*Anser brachyrhynchus*	BoCC5: Amber, RBBP	2	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	3
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	65	6
VP06				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	60	5
Cormorant	*Phalacrocorax carbo*		5	1
Canada Goose	*Branta canadensis*		10	2
Grey Heron	*Ardea cinerea*		2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	12	3
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	16	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	11	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	45	3
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	4
Unidentified gull	*Larus sp.*	0	100	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	75	7
VP09				

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	70	5
Black-tailed Godwit	*Limosa limosa*	BoCC5: Red, S41, WCA1, RBBP	4	1
Cormorant	*Phalacrocorax carbo*		1	1
Canada Goose	*Branta canadensis*		17	3
Egyptian Goose	*Alopochen aegyptiaca*		2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	5	1
Greylag Goose	*Anser anser*	BoCC5: Amber	4	3
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	4	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	54	4
Mallard	*Anas platyrhynchos*	BoCC5: Amber	36	4
Mute Swan	*Cygnus olor*		6	6
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	50	4
Snipe	*Gallinago gallinago*	BoCC5: Amber	12	1
Shelduck	*Tadorna tadorna*	BoCC5: Amber	3	1
Teal	*Anas crecca*	BoCC5: Amber	4	3
Water Rail	*Rallus aquaticus*	RBBP	1	1
White-fronted Goose	*Anser albifrons*	BoCC5: Red, S41	36	1
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	5	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	4
VP11				
Brent Goose	*Branta bernicla*	BoCC5: Amber, S41	1	1
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	20	4
Cormorant	*Phalacrocorax carbo*		5	5
Canada Goose	*Branta canadensis*		14	5
Common Gull	*Larus canus*	BoCC5: Amber	2	2
Coot	*Fulica atra*		60	5

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	1	1
Egyptian Goose	*Alopochen aegyptiaca*		2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	3
Gadwall	*Mareca strepera*	BoCC5: Amber	25	3
Great Crested Grebe	*Podiceps cristatus*		2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	22	3
Grey Heron	*Ardea cinerea*		1	3
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	50	2
Little Grebe	*Tachybaptus ruficollis*		3	4
Mallard	*Anas platyrhynchos*	BoCC5: Amber	50	6
Mute Swan	*Cygnus olor*		6	4
Wood Sandpiper	*Tringa glareola*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	3	1
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	20	1
Shoveler	*Spatula clypeata*	BoCC5: Amber, RBBP	2	1
Teal	*Anas crecca*	BoCC5: Amber	7	3
Tufted Duck	*Aythya fuligula*		5	1
Little Bunting	*Emberiza pusilla*		180	1
Unidentified gull	*Larus sp.*	0	2	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	5
VP12				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	180	3
Cormorant	*Phalacrocorax carbo*		2	1
Canada Goose	*Branta canadensis*		3	2
Greylag Goose	*Anser anser*	BoCC5: Amber	15	2
Grey Heron	*Ardea cinerea*		1	2
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	40	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	15	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	1	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	2
Mute Swan	*Cygnus olor*		1	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	5
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	6
VP13				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	35	1
Cormorant	*Phalacrocorax carbo*		1	2
Common Gull	*Larus canus*	BoCC5: Amber	9	2
Coot	*Fulica atra*		1	1
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	10	3
Grey Heron	*Ardea cinerea*		1	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	100	3
Little Grebe	*Tachybaptus ruficollis*		45	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	10	5
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	5
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Tufted Duck	*Aythya fuligula*		10	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	5
VP14				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	150	5
Cormorant	*Phalacrocorax carbo*		12	2
Canada Goose	*Branta canadensis*		90	4
Coot	*Fulica atra*		6	2
Egyptian Goose	*Alopochen aegyptiaca*		2	3

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	1
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	2	1
Great Crested Grebe	*Podiceps cristatus*		2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	56	4
Grey Heron	*Ardea cinerea*		1	3
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	100	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	3	1
Little Grebe	*Tachybaptus ruficollis*		2	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	25	6
Mute Swan	*Cygnus olor*		2	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	200	4
Shelduck	*Tadorna tadorna*	BoCC5: Amber	5	1
Tufted Duck	*Aythya fuligula*		21	2
Unidentified goose	*Anser sp.*	0	50	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	75	6
VP15				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	15	4
Cormorant	*Phalacrocorax carbo*		1	1
Canada Goose	*Branta canadensis*		6	1
Common Gull	*Larus canus*	BoCC5: Amber	50	1
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	2	1
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	8	1
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	3
Unidentified gull	*Larus sp.*	0	10	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	5
VP16				

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	90	1
Canada Goose	*Branta canadensis*		10	2
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	15	2
Greylag Goose	*Anser anser*	BoCC5: Amber	21	1
Grey Heron	*Ardea cinerea*		1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	45	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	80	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	1
Mute Swan	*Cygnus olor*		2	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	3
Woodpigeon	*Columba palumbus*	BoCC5: Amber	140	6
VP17				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	80	3
Grey Heron	*Ardea cinerea*		1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	3	2
Mute Swan	*Cygnus olor*		2	1
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	15	3
Sanderling	*Calidris alba*	BoCC5: Amber, RBBP	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	40	4
VP18				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	100	3
Common Gull	*Larus canus*	BoCC5: Amber	150	1
Grey Heron	*Ardea cinerea*		2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	50	2
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	26	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	100	4
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	4
VP19				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	130	5
Cormorant	*Phalacrocorax carbo*		6	1
Canada Goose	*Branta canadensis*		1	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	3	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	37	5
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	80	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	17	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	5
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Little Bunting	*Emberiza pusilla*		20	1
Unidentified gull	*Larus sp.*	0	25	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	40	5

Annex G: Time spent by Collision Risk Species in impact risk zone.

Table A8.5.20 - Time spent by Collision Risk Species in impact risk zone.

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
VP01					
kestrel	19.75	5.5	1.75	0	0
lapwing	0	0	2.75	14	0
buzzard	3	5	14.25	8	1
woodpigeon	11	193	7.5	0	0
starling	8	19.5	1.25	0	0
black-headed gull	0	9.75	456.75	15.75	0
herring gull	0	0	0	0.75	6.75
sparrowhawk	1	1.5	0	0	0
mallard	0	0	1.25	0	0
Canada goose	0.5	20.5	29.5	0	0
snipe	0	0	0	7.5	0
lesser black-backed gull	0	3	54.5	0	0
greylag goose	0	1	0	0	0
VP02					
kestrel	7.75	9.5	0.75	0	0
lapwing	0	0	20.75	0	0
buzzard	0.25	17.5	7	4.25	0.5
woodpigeon	64.25	480	203	194.5	0
starling	0	32	58.5	0	0
black-headed gull	0	38.25	23.75	14.75	28.5
herring gull	22.5	19	4	53	0
sparrowhawk	3	2.25	0	0	0
mallard	0.5	2	5.75	6	0
Canada goose	0	2.5	10	0	0
lesser black-backed gull	0	0	7.25	200	0
greylag goose	0	0	2	0	0
whooper swan	0	0	0.5	0	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
common gull	0	0	0	0	7.5
barn owl	2.25	0	0	0	0
Unidentified gull	0	0	0	5	0
VP03					
kestrel	2.25	2.25	0.5	0	0
lapwing	0	0	0	17.5	0
buzzard	3.5	12.5	8	2.25	4.5
woodpigeon	133.25	200.75	142.5	10	0
starling	0	44	0	0	0
black-headed gull	0	3.75	11.25	8.5	0
herring gull	0	0.75	0	0	0
sparrowhawk	0	1.25	4.75	0	0
mallard	0	1.5	0	0	0
Canada goose	0	7.5	11.25	0	0
lesser black-backed gull	0	0	102.25	0	0
greylag goose	0	0	0	0	1
Egyptian goose	2	0.5	0.5	0	0
VP04					
kestrel	2.5	0	0.5	0	0
buzzard	2.75	10.75	0.5	0	0
woodpigeon	22.25	486.5	153.75	122.5	0
starling	0	4.5	7.5	30.75	51.5
black-headed gull	0	50.5	311.5	3.5	0
herring gull	0	4.5	0	0	0
sparrowhawk	0	0.25	0	0	0
mallard	0	17	0	6	0
lesser black-backed gull	0	0	0	2.75	5.5
red kite	0	0	0.75	1.25	0
VP05					
grey heron	0.75	0	0	4.75	0
kestrel	12.5	10	3.5	0	0
lapwing	0	4	15	0	0
buzzard	3.25	7.25	10.25	18.5	0
woodpigeon	25	225.75	121.5	0	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
starling	37.5	45	0	0	0
black-headed gull	3.75	86	410.5	44	10
herring gull	0	0	85.75	9.75	0
Canada goose	0	0	0	12.5	0
snipe	0.75	0.5	0	0	0
lesser black-backed gull	0	0	128	38.25	0
greylag goose	0	0.5	1	3	0
common gull	0	0	35.25	0	0
red kite	0	0	0.5	2	0
little egret	0.5	0.75	1.5	0	0
barn owl	1.75	0.75	0	0	0
pink-footed goose	0	0	0	0	2.5
golden plover	0	0	10.5	0	0
VP06					
grey heron	0.5	1	0	0	0
kestrel	0.5	2.25	0	0	0
lapwing	0	0	34	0	0
buzzard	7.75	12.25	19.5	2.5	1
woodpigeon	225	311.5	140.5	7.5	0
starling	36.75	35.75	1.25	18.75	0
black-headed gull	50.5	20.5	56	77.5	0
herring gull	0	0	15	0.75	0
sparrowhawk	0.25	1.5	0	0	0
mallard	1	53.75	39.75	0	0
Canada goose	11.5	8.5	0	7	0
lesser black-backed gull	0	0	0	30.25	0
red kite	0.75	2	0.25	1.5	0
cormorant	2.5	0	0	0	0
unidentified gull	0	0	30	25	111
VP09					
kestrel	0	2.75	0	0	0
lapwing	34.75	39.25	114.25	54	3
teal	1	1	1	0	0
buzzard	0	0	1	0.75	0.5

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
woodpigeon	22.25	7.5	30	0	0
starling	12.5	16	50.5	0	0
black-headed gull	90.5	21.75	110.25	247	0
herring gull	0	0	3.5	0	0
sparrowhawk	0.5	0	0	0	0
mallard	13	20.75	11	0	0
Canada goose	0	21.75	12.5	0	0
snipe	6.75	0.75	0.75	0	0
greylag goose	0	3	1	13	0
Egyptian goose	0	2.5	0	2.5	0
mute swan	24	2.75	1	1	0
marsh harrier	0.5	0.25	0	0	0
red kite	0	1	5.5	3.25	0
little egret	3.75	0	0	0	0
cormorant	0	0	0.25	0	0
shelduck	0.75	1.5	1.5	9	0
peregrine	0.5	0	0	0	0
white-fronted goose	0	36	0	0	0
moorhen	0	0.75	0	0	0
black-tailed godwit	0	0	3	0	0
wigeon	1.25	1.25	1.25	2.5	0
VP11					
grey heron	0.25	0.25	0.25	0	0
kestrel	0	1	0	0	0
teal	10.75	0	0	0	0
unidentified wader	0	5.25	0	0	585
buzzard	0	0.25	4.75	0	0
woodpigeon	57.5	54.25	7.5	0	0
starling	0	10	0	0	0
black-headed gull	41	0	0	0	0
herring gull	0	0	0	122.5	0
sparrowhawk	1.25	0.25	3.75	0	0
mallard	27.5	45	0	0	0
Canada goose	0	1.5	28	0	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
greylag goose	0	4.25	50.25	0	0
common gull	0	0	5	0	0
Egyptian goose	0	3.5	0	0	0
mute swan	8.75	0	0	0	0
green sandpiper	1.75	0	0	0	0
hobby	0	0	0.75	0	0
coot	10	0	0	0	0
wood sandpiper	2.5	0	0	0	0
cormorant	0.5	2	0.75	0	0
tufted duck	1.25	0	0	0	0
mandarin duck	0	0.5	0	0	0
pochard	0.25	0	0	0	0
unidentified gull	0	2	0	0	0
unidentified sandpiper Sp.	0.5	0	0	0	0
VP12					
grey heron	0.25	0.5	0.75	0	0
kestrel	2.5	4.5	3.5	0.25	0
lapwing	0	0	34.5	0	0
buzzard	1.25	3.75	3	4.25	5.25
woodpigeon	52.5	233.5	40	75	0
starling	8	154.5	7.5	0	0
black-headed gull	135	195	1198.75	0	0
herring gull	0	0	13	11.5	0
sparrowhawk	1.75	1	1	0	0
mallard	2.5	0	0	0	0
Canada goose	2	0.5	0.75	3	0
snipe	0.75	1	0	0	0
lesser black-backed gull	1.5	0	10	0	0
greylag goose	0	3.75	1.75	0	0
common gull	0	0	12.5	0	0
mute swan	1.25	1	0	0	0
red kite	0.25	0.75	4.25	0	0
cormorant	0	0	3	0	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
VP13					
grey heron	0	0.25	0.25	0	0
kestrel	2.5	0.5	3.25	1	0
buzzard	0	8	9.75	18	5
woodpigeon	49.5	222.5	75.75	0	0
starling	27.75	33.25	22.5	0	0
black-headed gull	49.5	3	38.75	0	0
herring gull	0	47.5	25	0	0
sparrowhawk	0.5	0.25	0	0	0
mallard	1.75	39	4.5	0	0
snipe	0	0.75	0	0	0
common gull	1	10.5	0	0	0
red kite	0.25	1.75	0	0	0
little egret	5	1.25	1	0	0
green sandpiper	2.25	1	0	0	0
coot	0	0.5	2.5	0	0
cormorant	0.5	1.75	1	0	0
tufted duck	2.5	2.5	0	0	0
little grebe	0	1	0	0	0
VP14					
grey heron	0.25	0	0	0	0
kestrel	1.5	9.5	1	0	0
buzzard	2	4.25	6	0.5	0
woodpigeon	82.5	125.25	13	0	0
starling	67.5	158	0	0	0
black-headed gull	1581.25	1270.25	961.25	25	0
herring gull	0	0.5	0	0	0
sparrowhawk	2.25	0.5	0.5	0	0
mallard	0.75	12	15.25	0	0
Canada goose	228	10.75	1.75	0	0
lesser black-backed gull	0	0	3	0	0
greylag goose	179.5	1	0.75	1	0
Egyptian goose	12	1	0	0	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
mute swan	8.5	0.75	0	0	0
cormorant	0	0	15	3	0
tufted duck	0	0	4.5	0	0
shelduck	0	3.75	0	0	0
peregrine	0	0	0.75	0	0
unidentified goose	214	0	0	0	0
VP15					
kestrel	1.75	4.75	0.25	0	0
buzzard	1	3.5	25.25	5.25	8.5
woodpigeon	21.25	145.75	71.5	0	0
starling	9.5	37.25	0	0	0
black-headed gull	30	18.75	28	4.5	0
sparrowhawk	1.25	0.75	0	0	0
mallard	0	10.5	2.5	0	0
Canada goose	0	0	12	0	0
common gull	2	87.5	26.25	0	0
red kite	0	1.25	0	0	0
redshank	0	0	1	0.25	0
little egret	3.25	0	0	0	0
cormorant	0	0	0	0	0.25
peregrine	0.5	0	0	0	0
unidentified gull	10	2.5	0	0	0
VP16					
grey heron	0	0.25	0.5	0	0
kestrel	0.25	1	0.5	0	0
lapwing	0	78.75	0	0	0
buzzard	2.25	7.5	6.5	1	0
woodpigeon	168.75	330	31.5	0.25	0
starling	26.25	48.75	0	0	0
black-headed gull	0	7.5	2	83	0
sparrowhawk	0	2.25	2.25	0	0
mallard	0	1	0	0	0
Canada goose	1	6.5	2.5	0	0
lesser black-backed gull	0	0	0	80	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
greylag goose	2	1	34.25	0	0
common gull	0.5	0.5	8.25	0	0
mute swan	0	1	0	0	0
red kite	4.25	4.5	1.75	0.5	0
VP17					
grey heron	0.25	0.25	0	0	0
kestrel	4.5	0.5	1	0	0
lapwing	0	6.75	0	0	0
buzzard	2.5	1.75	0	3.5	0
woodpigeon	38.5	90.75	14	0	0
starling	0	14.5	0	0	0
black-headed gull	0	18.25	154	0	0
sparrowhawk	0.5	2.5	0	0	0
mute swan	0	0	1.5	0	0
marsh harrier	0	1	0	0	0
red kite	0	0	0	1.5	0
redshank	0.5	0	0	0	0
VP18					
kestrel	1.5	4.5	2	2	8
lapwing	0	0	0	26	0
buzzard	0.75	2.5	1	0	0
woodpigeon	519.75	639	109	65	0
starling	338.25	68.25	106.5	0	0
black-headed gull	125	151.25	310.5	88.25	0
herring gull	0	0	5	0	0
sparrowhawk	0.5	0.5	0	0	0
common gull	0	0	397.5	0	0
redshank	1	2.75	0.5	0	0
VP19					
lapwing	0	31.75	60	20	0
unidentified wader	10	15	0	0	0
woodpigeon	33.5	79	0	0	0
starling	6	78	0	0	0
black-headed gull	76.75	193.75	18.75	7.75	0

Species	<10m (minutes)	10-25m (minutes)	25-50m (minutes)	50-75m (minutes)	>75m (minutes)
herring gull	0	24	60.75	11.25	8.25
sparrowhawk	0.75	0.5	0	0	0
Canada goose	1.5	0	0	0	0
snipe	0	0.5	0	0	0
lesser black-backed gull	0	0	4.5	0	12.75
greylag goose	0	0	1.5	0	0
marsh harrier	1.25	0	0	0	0
little egret	0	0	0	1.5	0
cormorant	1	5.25	1.5	0	0
unidentified gull	0	16	43.75	0	0

Annex H: Peak counts for flocks of secondary species

Table A8.5.21 - Peak counts for flocks of secondary species

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
VP01				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	200	5
Blue Tit	*Cyanistes caeruleus*		7	1
Buzzard	*Buteo buteo*		4	5
Carrion Crow	*Corvus corone*		50	3
Canada Goose	*Branta canadensis*		35	3
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	9	1
Green Woodpecker	*Picus viridis*		1	1
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Goldfinch	*Carduelis carduelis*		20	1
Greenfinch	*Chloris chloris*	BoCC5: Red	2	2
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	1	1
Great Tit	*Parus major*		1	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	3	2
Jay	*Garrulus glandarius*		2	2
Jackdaw	*Coloeus monedula*		18	2
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	5
Kittiwake	*Rissa tridactyla*	BoCC5: Red	1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	19	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	30	2
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	4	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	1
Stonechat	*Saxicola rubicola*		1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Stock Dove	*Columba oenas*	BoCC5: Amber	4	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	20	3
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	2	2
Snipe	*Gallinago gallinago*	BoCC5: Amber	15	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	3
VP02				
Blackbird	*Turdus merula*		6	1
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	38	5
Barn Owl	*Tyto alba*	WCA1	1	1
Buzzard	*Buteo buteo*		2	7
Carrion Crow	*Corvus corone*		30	2
Canada Goose	*Branta canadensis*		6	1
Common Gull	*Larus canus*	BoCC5: Amber	15	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	25	1
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Goldfinch	*Carduelis carduelis*		30	2
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	1	2
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	30	4
Jackdaw	*Coloeus monedula*		30	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	5
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	10	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	200	3
Mallard	*Anas platyrhynchos*	BoCC5: Amber	6	3
Robin	*Erithacus rubecula*		1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	3	1
Rook	*Corvus frugilegus*	BoCC5: Amber	30	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	100	3

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	2	3
Unidentified gull	*Larus sp.*	0	10	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	250	7
Whooper Swan	*Cygnus cygnus*	BoCC5: Amber, WCA1, RBBP	1	1
VP03				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	10	5
Blue Tit	*Cyanistes caeruleus*		2	2
Buzzard	*Buteo buteo*		3	7
Carrion Crow	*Corvus corone*		2	2
Canada Goose	*Branta canadensis*		15	1
Egyptian Goose	*Alopochen aegyptiaca*		2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	2	1
Great Tit	*Parus major*		1	2
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	1	1
Jay	*Garrulus glandarius*		1	1
Jackdaw	*Coloeus monedula*		5	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	5
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	20	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	33	2
Long-tailed Tit	*Aegithalos caudatus*		2	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	2
Magpie	*Pica pica*		2	1
Marsh Tit	*Poecile palustris*	BoCC5: Red, S41	2	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	40	2
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	2	3
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	5
Wren	*Troglodytes' troglodytes*	BoCC5: Amber	1	1
VP04				

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	127	3
Blue Tit	*Cyanistes caeruleus*		2	2
Buzzard	*Buteo buteo*		3	4
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	2	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	73	2
Great Tit	*Parus major*		1	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	6	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	2
Red Kite	*Milvus milvus*	WCA1	1	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	11	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	8	3
Pheasant	*Phasianus colchicus*		2	1
Pied Wagtail	*Motacilla alba*		2	1
Rook	*Corvus frugilegus*	BoCC5: Amber	120	1
Stock Dove	*Columba oenas*	BoCC5: Amber	4	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	2
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	250	4
VP05				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	40	5
Barn Owl	*Tyto alba*	WCA1	1	3
Buzzard	*Buteo buteo*		3	7
Chiffchaff	*Phylloscopus collybita*		3	1
Canada Goose	*Branta canadensis*		10	1
Common Gull	*Larus canus*	BoCC5: Amber	35	1
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	2	3
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	30	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Greylag Goose	*Anser anser*	BoCC5: Amber	3	1
Golden Plover	*Pluvialis apricaria*	BirdsDir: A1	14	1
Great Tit	*Parus major*		1	1
Grey Heron	*Ardea cinerea*		5	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	16	4
Jackdaw	*Coloeus monedula*		1	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	3	6
Red Kite	*Milvus milvus*	WCA1	1	3
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	20	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	41	2
Pink-footed Goose	*Anser brachyrhynchus*	BoCC5: Amber, RBBP	2	1
Pheasant	*Phasianus colchicus*		1	1
Robin	*Erithacus rubecula*		1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	15	1
Rook	*Corvus frugilegus*	BoCC5: Amber	2	2
Stock Dove	*Columba oenas*	BoCC5: Amber	40	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	3
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	65	6
VP06				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	60	5
Blue Tit	*Cyanistes caeruleus*		1	1
Buzzard	*Buteo buteo*		3	7
Carrion Crow	*Corvus corone*		50	3
Cormorant	*Phalacrocorax carbo*		5	1
Canada Goose	*Branta canadensis*		10	2
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	26	1
Grey Heron	*Ardea cinerea*		2	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	12	3
Jackdaw	*Coloeus monedula*		50	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	2
Red Kite	*Milvus milvus*	WCA1	2	3
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	16	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	11	2
Long-tailed Tit	*Aegithalos caudatus*		1	1
Mistle Thrush	*Turdus viscivorus*	BoCC5: Red	1	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	45	3
Pheasant	*Phasianus colchicus*		2	1
Robin	*Erithacus rubecula*		1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	22	1
Red-legged Partridge	*Alectoris rufa*		1	1
Rook	*Corvus frugilegus*	BoCC5: Amber	80	6
Skylark	*Alauda arvensis*	BoCC5: Red, S41	1	1
Stock Dove	*Columba oenas*	BoCC5: Amber	4	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	4
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	1
Song Thrush	*Turdus philomelos*	BoCC5: Amber	1	1
Unidentified gull	*Larus sp.*	0	100	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	75	7
VP09				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	70	5
Black-tailed Godwit	*Limosa limosa*	BoCC5: Red, S41, WCA1, RBBP	4	1
Buzzard	*Buteo buteo*		1	2
Carrion Crow	*Corvus corone*		25	5
Cormorant	*Phalacrocorax carbo*		1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Chiffchaff	*Phylloscopus collybita*		1	1
Canada Goose	*Branta canadensis*		17	3
Egyptian Goose	*Alopochen aegyptiaca*		2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	5	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	40	2
Greylag Goose	*Anser anser*	BoCC5: Amber	4	3
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	6	1
Great Tit	*Parus major*		1	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	4	1
Jackdaw	*Coloeus monedula*		12	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	2
Kingfisher	*Alcedo atthis*	WCA1, BirdsDir: A1	1	1
Red Kite	*Milvus milvus*	WCA1	1	4
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	54	4
Long-tailed Tit	*Aegithalos caudatus*		5	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	36	4
Moorhen	*Gallinula chloropus*	BoCC5: Amber	4	2
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	11	1
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	2
Mute Swan	*Cygnus olor*		6	6
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	1	1
Rook	*Corvus frugilegus*	BoCC5: Amber	4	1
Skylark	*Alauda arvensis*	BoCC5: Red, S41	1	1
Stock Dove	*Columba oenas*	BoCC5: Amber	15	2
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	50	4

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	1
Snipe	*Gallinago gallinago*	BoCC5: Amber	12	1
Shelduck	*Tadorna tadorna*	BoCC5: Amber	3	1
Sedge Warbler	*Acrocephalus schoenobaenus*	BoCC5: Amber	1	1
Teal	*Anas crecca*	BoCC5: Amber	4	3
Water Rail	*Rallus aquaticus*	RBBP	1	1
White-fronted Goose	*Anser albifrons*	BoCC5: Red, S41	36	1
Wigeon	*Mareca penelope*	BoCC5: Amber, RBBP	5	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	4
VP11				
Brent Goose	*Branta bernicla*	BoCC5: Amber, S41	1	1
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	20	4
Buzzard	*Buteo buteo*		1	2
Carrion Crow	*Corvus corone*		1	1
Cormorant	*Phalacrocorax carbo*		5	5
Collared Dove	*Streptopelia decaocto*		1	1
Canada Goose	*Branta canadensis*		14	5
Common Gull	*Larus canus*	BoCC5: Amber	2	2
Coot	*Fulica atra*		60	5
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	1	1
Egyptian Goose	*Alopochen aegyptiaca*		2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	3
Gadwall	*Mareca strepera*	BoCC5: Amber	25	3
Great Crested Grebe	*Podiceps cristatus*		2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	22	3
Grey Wagtail	*Motacilla cinerea*	BoCC5: Amber	2	1
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	2	3
Grey Heron	*Ardea cinerea*		1	3

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	50	2
House Martin	*Delichon urbicum*	BoCC5: Red	0	1
Hobby	*Falco subbuteo*	WCA1, RBBP	1	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	1
Little Grebe	*Tachybaptus ruficollis*		3	4
Long-tailed Tit	*Aegithalos caudatus*		1	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	50	6
Moorhen	*Gallinula chloropus*	BoCC5: Amber	4	3
Mandarin Duck	*Aix galericulata*		2	1
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	4	1
Mute Swan	*Cygnus olor*		6	4
Wood Sandpiper	*Tringa glareola*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	3	1
Pochard	*Aythya ferina*	BoCC5: Red, RBBP	1	1
Pied Wagtail	*Motacilla alba*		1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	10	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	20	1
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	3
Shoveler	*Spatula clypeata*	BoCC5: Amber, RBBP	2	1
Teal	*Anas crecca*	BoCC5: Amber	7	3
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	7	1
Tufted Duck	*Aythya fuligula*		5	1
Little Bunting	*Emberiza pusilla*		180	1
Unidentified gull	*Larus sp.*	0	2	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	5
VP12				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	180	3
Buzzard	*Buteo buteo*		3	4

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Carrion Crow	*Corvus corone*		25	4
Cormorant	*Phalacrocorax carbo*		2	1
Canada Goose	*Branta canadensis*		3	2
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	2	1
Greylag Goose	*Anser anser*	BoCC5: Amber	15	2
Goldfinch	*Carduelis carduelis*		20	2
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	35	1
Grey Heron	*Ardea cinerea*		1	2
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	40	1
Jackdaw	*Coloeus monedula*		100	2
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	5
Red Kite	*Milvus milvus*	WCA1	1	2
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	15	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	1	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	2
Mute Swan	*Cygnus olor*		1	2
Pied Wagtail	*Motacilla alba*		1	1
Rook	*Corvus frugilegus*	BoCC5: Amber	36	2
Skylark	*Alauda arvensis*	BoCC5: Red, S41	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	5
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	2
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	2
Song Thrush	*Turdus philomelos*	BoCC5: Amber	15	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	6
VP13				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	35	1
Buzzard	*Buteo buteo*		22	6
Cormorant	*Phalacrocorax carbo*		1	2

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Chiffchaff	*Phylloscopus collybita*		2	2
Common Gull	*Larus canus*	BoCC5: Amber	9	2
Coot	*Fulica atra*		1	1
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	2	2
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	10	3
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	100	3
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	5	3
Grey Heron	*Ardea cinerea*		1	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	100	3
Jay	*Garrulus glandarius*		1	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	20	4
Red Kite	*Milvus milvus*	WCA1	1	2
Little Grebe	*Tachybaptus ruficollis*		45	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	10	5
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	50	1
Pheasant	*Phasianus colchicus*		1	1
Pied Wagtail	*Motacilla alba*		2	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	50	2
Stock Dove	*Columba oenas*	BoCC5: Amber	9	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	5
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	2
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Song Thrush	*Turdus philomelos*	BoCC5: Amber	15	1
Tufted Duck	*Aythya fuligula*		10	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	5
VP14				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	150	5
Brambling	*Fringilla montifringilla*	WCA1, RBBP	1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Blue Tit	*Cyanistes caeruleus*		2	1
Buzzard	*Buteo buteo*		2	6
Carrion Crow	*Corvus corone*		5	3
Cormorant	*Phalacrocorax carbo*		12	2
Canada Goose	*Branta canadensis*		90	4
Chaffinch	*Fringilla coelebs*		1	1
Coot	*Fulica atra*		6	2
Coal Tit	*Periparus ater*		4	1
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	1	1
Egyptian Goose	*Alopochen aegyptiaca*		2	3
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	30	1
Great Black-backed Gull	*Larus marinus*	BoCC5: Amber	2	1
Goldcrest	*Regulus regulus*		1	1
Great Crested Grebe	*Podiceps cristatus*		2	1
Grasshopper Warbler	*Locustella naevia*	BoCC5: Red, S41	1	1
Greylag Goose	*Anser anser*	BoCC5: Amber	56	4
Goldfinch	*Carduelis carduelis*		17	1
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	1	2
Great Tit	*Parus major*		2	2
Grey Heron	*Ardea cinerea*		1	3
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	100	1
Jackdaw	*Coloeus monedula*		20	3
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	5
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	3	1
Little Grebe	*Tachybaptus ruficollis*		2	2
Mallard	*Anas platyrhynchos*	BoCC5: Amber	25	6
Moorhen	*Gallinula chloropus*	BoCC5: Amber	5	4

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Mandarin Duck	*Aix galericulata*		1	1
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	2	1
Mute Swan	*Cygnus olor*		2	2
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	1	1
Pheasant	*Phasianus colchicus*		2	1
Robin	*Erithacus rubecula*		1	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	20	1
Rook	*Corvus frugilegus*	BoCC5: Amber	20	1
Skylark	*Alauda arvensis*	BoCC5: Red, S41	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	200	4
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	3
Song Thrush	*Turdus philomelos*	BoCC5: Amber	20	2
Shelduck	*Tadorna tadorna*	BoCC5: Amber	5	1
Turtle Dove	*Streptopelia turtur*	BoCC5: Red, S41	10	1
Tufted Duck	*Aythya fuligula*		21	2
Unidentified goose	*Anser sp.*	0	50	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	75	6
VP15				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	15	4
Buzzard	*Buteo buteo*		2	6
Cormorant	*Phalacrocorax carbo*		1	1
Canada Goose	*Branta canadensis*		6	1
Common Gull	*Larus canus*	BoCC5: Amber	50	1
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	2	1
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	1	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	45	3
Kestrel	*Falco tinnunculus*	BoCC5: Amber	2	3
Red Kite	*Milvus milvus*	WCA1	1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Long-tailed Tit	*Aegithalos caudatus*		12	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	8	1
Moorhen	*Gallinula chloropus*	BoCC5: Amber	3	1
Peregrine	*Falco peregrinus*	WCA1, RBBP, BirdsDir: A1	1	1
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Rook	*Corvus frugilegus*	BoCC5: Amber	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	3
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	3
Unidentified gull	*Larus sp.*	0	10	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	60	5
VP16				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	90	1
Blue Tit	*Cyanistes caeruleus*		1	1
Buzzard	*Buteo buteo*		15	7
Carrion Crow	*Corvus corone*		30	2
Collared Dove	*Streptopelia decaocto*		1	1
Canada Goose	*Branta canadensis*		10	2
Common Sandpiper	*Actitis hypoleucos*	BoCC5: Amber	15	2
Dunnock	*Prunella modularis*	BoCC5: Amber, S41	1	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	45	4
Green Woodpecker	*Picus viridis*		1	1
Greylag Goose	*Anser anser*	BoCC5: Amber	21	1
Goldfinch	*Carduelis carduelis*		2	1
Green Sandpiper	*Tringa ochropus*	BoCC5: Amber, WCA1, RBBP	1	1
Great Tit	*Parus major*		1	1
Grey Heron	*Ardea cinerea*		1	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	15	3
Red Kite	*Milvus milvus*	WCA1	2	4

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	45	1
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	80	1
Linnet	*Linaria cannabina*	BoCC5: Red, S41	11	1
Mallard	*Anas platyrhynchos*	BoCC5: Amber	2	1
Moorhen	*Gallinula chloropus*	BoCC5: Amber	1	1
Meadow Pipit	*Anthus pratensis*	BoCC5: Amber	1	1
Mute Swan	*Cygnus olor*		2	1
Pheasant	*Phasianus colchicus*		2	3
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	30	2
Rook	*Corvus frugilegus*	BoCC5: Amber	100	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	60	3
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	2	3
Song Thrush	*Turdus philomelos*	BoCC5: Amber	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	140	6
VP17				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	80	3
Buzzard	*Buteo buteo*		2	3
Grey Heron	*Ardea cinerea*		1	1
Kestrel	*Falco tinnunculus*	BoCC5: Amber	1	4
Red Kite	*Milvus milvus*	WCA1	1	1
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	3	2
Long-tailed Tit	*Aegithalos caudatus*		2	1
Moorhen	*Gallinula chloropus*	BoCC5: Amber	1	2
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	1
Mute Swan	*Cygnus olor*		2	1
Robin	*Erithacus rubecula*		1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	30	1
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	15	3
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	3
Sanderling	*Calidris alba*	BoCC5: Amber, RBBP	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	40	4
VP18				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	100	3
Buzzard	*Buteo buteo*		1	2
Carrion Crow	*Corvus corone*		100	1
Common Gull	*Larus canus*	BoCC5: Amber	150	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	50	4
Feral pigeon	*Columba livia domestica*	0	70	2
Grey Heron	*Ardea cinerea*		2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	50	2
Kestrel	*Falco tinnunculus*	BoCC5: Amber	15	4
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	26	1
Linnet	*Linaria cannabina*	BoCC5: Red, S41	6	1
Long-tailed Tit	*Aegithalos caudatus*		6	1
Moorhen	*Gallinula chloropus*	BoCC5: Amber	1	1
Pheasant	*Phasianus colchicus*		1	1
Pied Wagtail	*Motacilla alba*		1	1
Redshank	*Tringa totanus*	BoCC5: Amber	1	1
Rook	*Corvus frugilegus*	BoCC5: Amber	10	1
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	100	4
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	1

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Twite	*Linaria flavirostris*	BoCC5: Red, S41	1	1
Woodpigeon	*Columba palumbus*	BoCC5: Amber	100	4
VP19				
Black-headed Gull	*Chroicocephalus ridibundus*	BoCC5: Amber	130	5
Carrion Crow	*Corvus corone*		2	1
Cormorant	*Phalacrocorax carbo*		6	1
Canada Goose	*Branta canadensis*		1	2
Cetti's Warbler	*Cettia cetti*	WCA1	1	1
Little Egret	*Egretta garzetta*	RBBP, BirdsDir: A1	2	1
Fieldfare	*Turdus pilaris*	BoCC5: Red, WCA1, RBBP	4	1
Grasshopper Warbler	*Locustella naevia*	BoCC5: Red, S41	7	1
Greylag Goose	*Anser anser*	BoCC5: Amber	3	1
Great Tit	*Parus major*		2	1
Herring Gull	*Larus argentatus*	BoCC5: Red, S41	37	5
Lapwing	*Vanellus vanellus*	BoCC5: Red, S41	80	2
Lesser Black-backed Gull	*Larus fuscus*	BoCC5: Amber	17	1
Linnet	*Linaria cannabina*	BoCC5: Red, S41	1	1
Magpie	*Pica pica*		4	2
Moorhen	*Gallinula chloropus*	BoCC5: Amber	2	1
Marsh Harrier	*Circus aeruginosus*	BoCC5: Amber, WCA1, RBBP, BirdsDir: A1	1	1
Pied Wagtail	*Motacilla alba*		5	1
Redwing	*Turdus iliacus*	BoCC5: Amber, WCA1, RBBP	12	1
Skylark	*Alauda arvensis*	BoCC5: Red, S41	30	2
Stock Dove	*Columba oenas*	BoCC5: Amber	5	2

Common name	Scientific Name	Status	Peak Count	No. of months (out of 7)
Starling	*Sturnus vulgaris*	BoCC5: Red, S41	30	5
Sparrowhawk	*Accipiter nisus*	BoCC5: Amber	1	2
Snipe	*Gallinago gallinago*	BoCC5: Amber	1	1
Unidentified gull	*Larus sp.*		25	2
Woodpigeon	*Columba palumbus*	BoCC5: Amber	40	5

Annex I: Peak counts during Transect Surveys

Qualifying Features of NSN/ Ramsar sites are marked with an asterisk; other birds at collision risk are marked in bold.

Table A8.5.22 - Peak counts during transect surveys.

Common name	Scientific Name	Status
T10		
Blackbird	3	1
***Brent goose**	8	1
Black-headed gull	141	7
Blue tit	5	6
Carrion crow	106	6
***Cormorant**	21	4
Chiffchaff	6	2
Collared dove	13	2
Canada goose	39	4
Chaffinch	3	1
Common gull	43	2
Coot	78	7
Common sandpiper	1	1
Coal tit	1	1
***Curlew**	4	1
Dunnock	24	1
Egyptian goose	2	2
Little egret	1	1
Fieldfare	171	4
Feral pigeon	114	2
Green woodpecker	1	1
***Gadwall**	45	1
Goldcrest	2	1
***Great crested grebe**	3	2
Greylag goose	17	2

Common name	Scientific Name	Status
Grey wagtail	3	2
Goldfinch	46	4
***Golden plover**	70	1
Grey heron	16	3
Herring gull	13	4
Jay	2	2
Jackdaw	315	7
Kestrel	2	2
***Lapwing**	60	3
Lesser black-backed gull	11	2
***Little grebe**	4	2
Linnet	234	2
Little owl	17	1
Long-tailed tit	1	1
Mallard	39	5
Magpie	5	5
Moorhen	50	2
Meadow pipit	129	2
***Mute swan**	12	3
Pied wagtail	2	3
Robin	2	1
Redwing	4	2
Rook	418	7
Skylark	106	6
Stock dove	12	3
Starling	297	2
Song thrush	2	2
***Shoveler**	2	1
***Teal**	61	2
Tufted duck	6	2
***Wigeon**	1	1
Woodpigeon	191	5
Yellowhammer	4	2
T08		

Common name	Scientific Name	Status
Blackbird	1	1
Black-headed gull	77	4
Blue tit	1	3
Blue tit	7	5
Carrion crow	112	7
Collared dove	1	1
Canada goose	3	1
Common gull	50	2
Fieldfare	78	3
Feral pigeon	25	2
Goldfinch	8	2
Grey heron	6	2
Herring gull	7	1
House martin	1	1
Jay	60	1
Jackdaw	62	5
Kestrel	4	1
Red kite	2	2
***Lapwing**	60	4
Long-tailed tit	7	3
Mallard	3	1
Magpie	2	1
Meadow pipit	4	1
Mistle thrush	1	2
Grey partridge	1	1
Pheasant	2	3
Pied wagtail	2	3
Robin	1	1
Redwing	20	1
Rook	101	5
Skylark	8	3
Stock dove	2	1
Starling dove	90	2
Song thrush	1	1

Common name	Scientific Name	Status
Woodpigeon	72	7
T07		
Blackbird	3	5
Black-headed gull	15	2
Blue tit	2	3
Blue tit	3	3
Carrion crow	14	4
Canada goose	1	1
Chaffinch	4	1
Common gull	3	1
Dunnock	1	2
Fieldfare	11	1
Goldfinch	1	1
***Golden plover**	1	1
Herring gull	4	2
Jackdaw	85	3
Kestrel	2	2
***Lapwing**	3	3
Lesser black-backed gull	2	1
Magpie	4	2
Meadow pipit	2	2
Pheasant	5	1
Pied wagtail	2	1
Robin	3	2
Redwing	30	3
Rook	79	3
Skylark	10	3
Stock dove	7	2
Song thrush	1	2
Woodpigeon	44	5
Yellowhammer	1	1

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com

Appendix 8.6: Bat Roosting Report

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The Great Grid Upgrade

Norwich to Tilbury

Norwich to Tilbury

Preliminary Environmental Information Report - Volume III

Appendix 8.6: Bat Roosting Report

April 2024

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Annex A: Figures

1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of the National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description in Volume I.

1.2 Ecological Background

1.2.1 The Environmental Impact Assessment (EIA) Scoping Report (National Grid, 2022) for the Project, issued to the Planning Inspectorate in November 2022 defined the proposed scope of the bat surveys to be conducted for the Project. It was anticipated that the landscape surrounding the Project contained habitat suitable for bats that is well connected to the wider landscape by features such as rivers, tree-lined watercourses, arable field margins, extensive hedgerows, and broadleaved woodland. These habitats have the potential to support a wide range of UK bat species, including rare woodland bats (i.e., barbastelle *Barbastella barbastellus*) that do not occur where habitat diversity is of lower quality.

1.2.2 The general approach to impact assessment for bats is to ensure that the impacts to bats are avoided, where possible, minimised and / or mitigation provided to maintain the favourable conservation status of species present that utilise the habitats across the Project. Overall, the Project approach aims to provide replacement and or/areas of

better-quality habitat than that affected by the Project and ensure that these habitats are well connected to the wider landscape. This would be achieved by avoiding permanent effects to habitats of perceived value to bats, reinstating habitats affected by temporary habitat loss to equal or better condition than existing and improving the quality and availability of ecological networks across the Project.

1.2.3 Based upon this approach, the EIA Scoping Report (National Grid, 2022) identified the need for surveys for bats where (i) trees required removal to facilitate the construction of the Project and (ii) where significant potential adverse effects to roosting, foraging, and commuting bats may occur, for example, in areas of underground cabling, sealing end compounds, substations and associated construction areas. At the time of writing, no buildings or other man-made structures have been identified that would be removed by the Project and so there has been no assessment for bats of such structures.

1.2.4 This report details the approach to surveying roosting bats as identified in the EIA Scoping Report (National Grid, 2022), and through consultation with Natural England, the survey methods and roost characterisations have been updated to reflect new best practice guidelines published in September 2023 (Collins, 2023). Appendix 8.7: Bat Activity Report within Volume III provides the approach to bat activity surveys.

1.3 Brief and Objectives

1.3.1 The aim of the survey work is to obtain baseline data for the Project. This will be achieved by undertaking the following:

- A detailed desk study
- Field surveys to establish the presence of bats and determine species
- Locate and characterise roosts within the draft Order Limits
- Locate and characterise commuting and foraging habitats within the survey area.

1.3.2 The objectives of the study were to:

- Use the baseline dataset to determine the importance of the survey area for bats and identify bat roosts
- Outline requirements for further survey work to inform detailed mitigation design and any European Protected Species licence applications (should they be required).

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided in Table A8.6.1.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.6.1) has been considered with regards to the methodology included within this report.

Table A8.6.1 - Legal Compliance

Legislation	Details
Conservation of Habitats and Species Regulations 2017 (as amended) ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for bats (Special Areas of Conservation (SACs)) and to provide protection for these sites through designation, planning and other controls. Barbastelle, Bechstein's bat (*Myotis bechsteinii*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros)* are also listed on Annex II of the Habitats Directive, which means that SACs may be attributed to internationally important roosts and foraging areas of these species. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill or injure, disturb, trade in, damage or destroy a breeding site or resting place the animals listed in Schedule 2. However, these actions can be made lawful through the granting of licences by the appropriate authority (Natural England). Licences may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the bat species concerned.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter. All 18 native UK bat species receive protection under Schedule 5 of the Wildlife and Countryside Act 1981 (WCA) (as amended). Under this Act it is an offence to intentionally kill, injure or take any protected species; intentionally or recklessly damage, destroy or obstruct access to any structure or place which a protected species uses for shelter or protection; and intentionally or recklessly disturb any protected species while it is occupying a structure or place which it uses for shelter or protection

Legislation	Details
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	The NERC Act 2006 places a duty upon public bodies to maintain Section 41 (s41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions. Seven species of bats are identified as species of principal importance these are: greater horseshoe bat; lesser horseshoe bat; Bechstein's bat; noctule (*Nyctalus noctula*); soprano pipistrelle (*Pipistrellus pygmaeus*); brown long-eared bat (*Plecotus auritus*); and barbastelle.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides further details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Desk Study

3.1.1 A desk study was conducted in September 2023 and subsequently in January 2024 following a design change, to identify records for bats within the draft Order Limits and 6 km from the draft Order Limits. Records were requested from the last 10 years, based on standard practice.

3.1.2 Following advice from Natural England in September 2023, the 6 km distance was selected based upon the core sustenance zone, for barbastelle bats (Collins, 2023). Barbastelle bats have the largest core sustenance zone of any of the bat species that has the potential to be impacted in this part of the UK. The core sustenance zone is the area of greatest value to roosting bats.

3.1.3 Records were obtained from the following local Records Centres:

- Norfolk Biodiversity Information Service (NBIS)
- Suffolk Biodiversity Information Service (SBIS)
- Essex Field Club (EFC)

3.1.4 The record centres also provided information on non-statutory designated sites within 2 km of the draft Order Limits. These were County Wildlife Sites (CWS) and Local Wildlife Sites (LWS). Non-statutory designated sites were reviewed for any mention of bats in their designation citation.

3.1.5 A search for Special Areas of Conservation (SACs) within 30 km of the draft Order Limits, where designation was due to bats being considered a qualifying feature, was conducted using The Multi-Agency Geographic Information for the Countryside (MAGIC) and the Joint Nature Conservation Committee (JNCC) websites.

3.1.6 A further search of other statutory designated sites within 2 km was conducted using MAGIC mapping (MAGIC, 2023), where bats are identified in the citation. These were Sites of Special Scientific Interest (SSSI), Ramsar sites and Special Protection Areas (SPAs).

3.2 Survey Methodology

3.2.1 Land within the Project draft Order Limits was selected for field survey work (hereafter the ‘survey area’). This area was selected considering the nature of work (i.e., the avoidance of effects, where possible, and the minimal / temporary nature of the remaining effects proposed to habitat offering suitable potential for bats).

3.2.2 For the survey methodology detailed below, professional judgment based upon previous experience and the best practice guidance published in September 2023 (Collins, 2023) has been followed.

Ground Level Tree Assessment

3.2.3 Ground level tree assessments have been conducted for all trees within permanent works and undergrounding locations including overhead lines where woodland / linear features are likely to be affected. Assessments took place between November 2023 and March 2024, as trees will have minimal foliage allowing a comprehensive visual assessment to be made.

3.2.4 Where woodland falls within the draft Order Limits and extends beyond the boundary, the survey may extend beyond the draft Order Limits to account for the woodland. This will be dependent upon the value of the woodland habitat, the desk-based information and potential effects arising from construction of the Project. The amount of woodland surveyed beyond the draft Order Limits will be at the discretion of the competent bat ecologist in the field. Where woodland habitat of potential value to bats is identified the following data will be recorded:

- Tree species present (canopy and understorey)
- Structure of the woodland
- Presence of woodland rides
- Suitability for foraging and commuting bats
- Suitability for roosting bats
- The bat species likely to utilise the habitat

3.2.5 This information will be used in combination with the Project design to make informed decisions regarding scoping in / out woodlands for advanced bat licensed survey techniques such as radiotracking. See Appendix 8.7: Bat Activity Report in Volume III for more details.

3.2.6 Ground level roost assessment comprised of a detailed visual assessment of the exterior of trees from ground level to look for features that bats could use for roosting, as per the approach recommended in the survey guidelines (Collins, 2023). These surveys were conducted in daylight hours and all angles of the trees were assessed, searching for evidence indicating the current or historic use of the tree by roosting bats.

3.2.7 Ground level tree assessments were undertaken using powerful spot lamps and binoculars to assess potential roost features (PRFs) at height (i.e., bark staining). Zoom cameras were used to accurately record the potential roost feature image. Where it was safe to do so, potential roost features were subject to an endoscope survey at head height. It was considered that potential roost features at this height (lower levels) are common roosting locations for hibernating/winter roosting bats (frost cracks etc) for some species (Collins, 2023). This information will be used to provide supplementary information on the presence of hibernation roosts.

3.2.8 Where suitable features were observed, their location and a brief description of their characteristics were recorded, and photographs taken. Examples of suitable potential roost features include:

- Woodpecker holes
- Rot holes
- Hazard beam
- Cracks and splits (e.g., frost cracks)

- Knot holes
- Cankers
- Dense ivy
- Lifting/peeling bark

3.2.9 Where possible, each feature was visually inspected for evidence of use by roosting bats, including:

- Bat droppings in, around or below the potential roost feature
- Urine staining below the potential roost feature
- Scratch marks
- Characteristic staining (from fur oils)

3.2.10 It is important to note that bat roosts may have no external signs of occupation and depending on the structure of the feature and exposure to the weather, internal evidence is easily washed away and broken down. Therefore, where potential roosting features are identified at ground level, presence of bats cannot be ruled out and further survey may be required.

3.2.11 A tree may have more than one potential roost feature; however, the tree was categorised according to the highest suitability roost feature present. The category descriptions are provided in Table A8.6..2.

Table A8.6.2 - Guidelines for categorising the potential suitability of potential roost features (PRFs) for bats

Suitability	Description
None	Negligible habitat features likely to be used by roosting bats.
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony

3.2.12 The type of roost that the potential roost features could support was also considered where possible, and grouped as follows:

- Maternity (breeding roost)
- Summer / transitional (to include transitional, occasional, satellite, night, and day roosts)
- Hibernation roost

If a tree was categorised as no suitability (i.e., None), then in accordance with best practice guidelines, further surveys are not required (Collins, 2023). Trees that were identified as PRF-I or PRF-M will be subject to further survey in the form of aerial inspection surveys and dusk emergence surveys, where appropriate, as part of pre-construction surveys post DCO consent.

Hibernation

3.2.13 Bats spend up to five months of the year in hibernation, highlighting the importance of suitable hibernation sites and their conservation value. It should be noted that tree roosts suitable for hibernation may also be used by bats at other times of the year if suitable for occasional summer use and or maternity roosts.

3.2.14 Some bat species use tree roosts during winter, species that have been found in tree roost during January and February are barbastelle, Natterer's bat (*Myotis nattereri),* Leisler's bat (*Nyctalus leisleri)*, noctule, Nathusius's pipistrelle (*Pipistrellus nathusii)*, common and soprano pipistrelle and brown long-eared bat (Bat Tree Habitat Key, 2018). Whilst it is possible to undertake an inspection for hibernating bats in winter through the PRF inspections, best practice guidelines recommend that hibernation should be assumed (without the need for survey) in woodlands with appropriate PRFs and tree-roosting species present (Collins, 2023).

3.2.15 It is considered that the approach to ground level tree inspections, utilising endoscope for head height level features is sufficient to identify hibernation tree roosts based upon best practice guidance (Collins, 2023). In addition, potential roost feature inspection surveys such as aerial tree climbs pre-construction will identify any features at height that may provide suitable potential for hibernation roosts. This information will be noted in combination with potential suitability to support maternity / mating roosts.

Potential Roost Feature Inspection Survey

3.2.16 Pre-construction, when it is confirmed which trees require removal, potential roost feature inspection surveys will be undertaken via aerial climbed inspections where trees are safe to climb. If a tree is considered unsafe to climb or following an inspection via endoscope cannot be fully inspected, the surveys (or remaining two surveys) would comprise of an emergence survey aided by an infra-red (IR) camera following best practice guidance (Collins, 2023). The aim of the aerial tree climbed assessments is to provide detailed assessments of the potential roost features identified during the ground level tree assessment surveys. The suitability of the potential roost features identified during ground level assessment will either be confirmed or downgraded following aerial inspections. Aerial surveys involve a detailed search for further evidence of a bat roost, such as live or dead bats, droppings, staining or odour.

3.2.17 Surveyors will undertake the inspections with endoscopes, mirrors, and torches. Information about the features will be noted, for example, dimensions and exposure to cold, rain and light, and evidence of bats.

3.2.18 Aerial tree climb inspection surveys will be spaced over the season ideally spaced one month apart covering pre-parturition (May/June), parturition periods (when females give birth to their young in July/August) and post-parturition (September). If no features are identified or are superficial upon further inspection, no further inspections will be required. If evidence of bats is identified or features are identified that offer suitable potential to roosting bats further climbed surveys will be required until roost can be characterised (i.e., maternity, mating, day, or night roost), the minimum number of surveys is three following best practice guidance (Collins, 2023).

Advanced Bat Licensed Survey Techniques

Scoping

3.2.19 Radiotracking surveys will target species identified from the desk study data, the ground level tree inspection results and automated static detector survey data (see Appendix 8.7: Bat Activity Report in Volume III for details regarding static detector surveys). The species will be selected with reference to their rarity, legislative protection, and/or known susceptibly to temporary or permanent habitat fragmentation. Natural England will be consulted regarding the target species for such surveys prior to seeking a licence for the survey. Species likely to be targeted will include (but are not limited to) barbastelle bat, small myotis sp. and long-eared species.

3.2.20 Female bats will be preferentially selected for radio tagging in preference to male bats, as this enable identification of maternity roosts which are of higher conservation significance. Bats which are heavily pregnant or underweight will not be selected for radio tracking due to potential welfare risks to bats.

Identification of Target Areas

3.2.21 Aerial photographs and Ordnance Survey maps will be examined to identify the distribution of suitable habitats within the landscape and the connectivity of features for bats to determine the most appropriate locations in which to trap bats. The ground level tree assessment results will be used to interpret which woodlands offer high value to roosting bats.

3.2.22 Where many trees with potential roost features are recorded within a high value woodland, this woodland will be subjected to advanced licensed bat survey techniques (i.e., radio-tracking). This is considered a more pragmatic and cost-effective solution to understand the bat roosting behaviour in the woodland as a whole and how bats may be affected by the Project. This methodology takes into consideration the ecology, life cycle and behaviour of tree dwelling bat species known to be present within East Anglia (i.e., barbastelle bat).

3.3 Dates of Survey and Personal

3.3.1 Ground level tree assessment surveys took place, where access allowed, between November 2023 and March 2024. These surveys were undertaken by suitably qualified, experienced, and licensed bat ecologists.

3.3.2 Potential roost feature inspection surveys would be undertaken pre-construction when the extent of tree removal is known. They comprise tree climbing and emergence surveys. Trees containing potential roost features that are safe to climb would be inspected by teams of suitably qualified tree climbers and bat ecologists who hold Natural England Level 2 bat licences. Aerial tree climb inspection surveys would be spaced over the season, ideally spaced one month apart covering pre-parturition (May/June), parturition periods (July/August) and post-parturition (September). Emergence surveys would be undertaken by suitably qualified and experienced ecologists with guidance from licensed bat ecologists over the period May to September.

3.3.3 Advanced bat licensed surveys can only be undertaken under a site-specific licence under the supervision of the licensed ecologist. The precise timing of the survey will be

identified in the licence, but it is expected that these surveys (if required) would take place in the summer of 2024.

3.4 Notes and Limitations

3.4.1 Records held by local ecological record centres are collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage. The data collection is not exhaustive and can be biased towards areas with public access or where surveys have taken place to inform other development projects. It is therefore possible that bats are present within/adjacent to the draft Order Limits that were not identified during the data searches, undertaking the surveys outlined in this report will ensure this is not a constraint to the impact assessment.

3.4.2 The use of trees and potential roost features by bats changes continually in response to changes of weather and microclimatic conditions. For example, high winds may result in the loss of a feature or may create a new one.

3.4.3 Whilst the survey methods detailed above will identify potential presence of roosting bats, and the suitability of the woodlands as a roosting resource it should be noted that woodland / tree dwelling roosting bats are known to exhibit regular roost switching behaviour, and therefore roost locations may be used intermittently and not consistently each year. It is for this reason and the fact that as the route of the Project every effort would be made to avoid tree loss, that tree climbing and emergence surveys would take place post DCO pre-construction.

3.4.4 Land access restrictions may result in some land parcels not being surveyed on the ground and survey data may therefore be incomplete. Every effort will be made to obtain access.

4. Results

nationalgrid

4. Results

4.1 Overview

4.1.1 The ground level tree assessments, as discussed within Section 3.2 were undertaken between November 2023 and March 2024. However, only survey data gathered between September 2022 and September 2023 has been included within this report, to allow time for the processing of results. Therefore, the results section below only presents the results of the desk study. Desk study results are also presented on Figure A.8.6.1: Bats: Desk Study Bat Records, in Annex A. Further desk-based data and survey results obtained beyond September 2023 shall be reported within the ES.

4.2 Desk Study Results

Statutory Designated sites

4.2.1 Sixteen SACs were situated within 30 km of the draft Order Limits, none of which identified bats as the primary reason for designation or as a qualifying feature.

4.2.2 Twenty-four SSSI, one Ramsar site, and one SPA were situated within 2 km of the draft Order Limits, and none mentioned bats within their citation.

Non-Statutory Designated sites

4.2.3 As illustrated in Table A8.6..3 below, there were five non-statutory sites of nature conservation importance in the 2 km search area that mentioned the presence of bat in their citation (refer to Figure A8.6.1: Bats: Desk Study Bat Records in Annex A).

Table A8.6.3 - Non-statutory sites that mention bat roosts or bat presence within their citation.

Site Name	District *(Project Section)*	Distance/Direction to draft Order Limits	Site Description	Bat comment/records
Site mentioning bat roosts in its citation:				
Bonny Wood CWS	Suffolk *(Section B)*	0.505km South	Situated adjacent to a large Ancient Woodland designated SSSI, the site comprises mixed deciduous woodland priority habitats.	Wood provides forage and roosting opportunities for bats.
Sites mentioning bat presence in their citation:				

Site Name	District *(Project Section)*	Distance/Direction to draft Order Limits	Site Description	Bat comment/records
Bramford Meadows CWS	Suffolk *(Section B)*	1.17km Northeast	The sites consist mainly of the priority habitat floodplain grazing marsh, situated in the valley of the River Gipping.	Holds key habitat for priority mammals including bats (especially Daubenton's (*Mytois daubentonii).*
Sproughton Park CWS	Suffolk *(Section C)*	Within draft Order Limits	The site supports grassland, wet woodland (predominantly alder), scrub and hedgerow habitats. It is adjacent Belstead Brook.	Mosaic grassland and hedgerows are ideal feeding habitats for bats.
Raydon Great Wood CWS	Suffolk *(Section C)*	0.134km West	The site is an Ancient Woodland, holding characteristic features of medieval woods. The woodland supports oak, hazel, lime, beech, elm, and hawthorn.	Priority species are recorded here including bats.
Chantry Park, Beech Water & Meadow CWS	Suffolk *(Section C)*	1.23km East	A high-quality mosaic of habitats making the site valuable for wildlife, hosting assemblages of priority species.	High quality habitat for bats including brown long-eared (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*) and noctule (*Nyctalus noctula*).

4.3 Species Records

Bat Roost

4.3.1 Desk study records identified the presence of 298 confirmed, or likely, bat roosts for ten species within 6 km of the draft Order Limits. The most recent records were from 2022.

4.3.2 The species recorded at these roost sites include barbastelle, brown long-eared bat, long-eared *sp*. (*Plecotus sp.)* common pipistrelle, soprano pipistrelle (*Pipistrellus*

pygmaeus), Nathusius's pipistrelle (*Pipistrellus nathusii*), pipistrelle *sp* (*Pipistrellus sp*.) Daubenton's bat, myotis sp (*Myotis sp.),* Leisler's bat (*Nyctalus leisleri*), Natterer's bat (*Myotis nattereri*), noctule, and serotine (*Eptesicus serotinus*) (records illustrated on Figure A8.6.1: Bats: Desk Study Bat Records in Annex A). In the desk study area, roosts for all these species were reported in Essex, whereas only brown long-eared, Natterer's and unidentified pipistrelle species had roosts reported in Norfolk; and no roosts had been reported in Suffolk.

Bat Activity

4.3.3 A total of 6,153 records of bat activity and were obtained from the three local record centres with a confirmed 12 species. These species recorded were barbastelle, brown long-eared bat, long-eared *sp.,* common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle, pipistrelle *sp*., Daubenton's bat, Natterer's bat, *Myotis sp.,* potential whiskered (*Myotis mystcinus*) or Brandt's bat (*Myotis brandtii*), whiskered bat, noctule, Leisler's bat, serotine, *Nyctalus sp*. and unidentified bat.

4.3.4 Most species were reported across the desk study area. The exceptions were whiskered/Brandt's, where there were no reports in Essex within the desk study area and whiskered bat where the only confirmed record was in Suffolk.

4.3.5 A summary of the results is shown in Table A8.6..4.

Table A8.6.4 - Bat records collected as part of the desk study

Species	Record Centre	Number of Roost Records	Total Roost Records	Number of Activity Records	Total Activity Records
Barbastelle	NBIS	2	15	299	398
	SBIS	10		78	
	EFC	3		21	
Brown long-eared bat	NBIS	10	66	385	616
	SBIS	33		113	
	EFC	23		118	
Common pipistrelle	NBIS	14	70	978	1,509
	SBIS	36		311	
	EFC	20		220	
Daubenton's bat	NBIS	2	28	313	402
	SBIS	6		47	
	EFC	20		42	
Leisler's bat	NBIS	0	1	48	118
	SBIS	0		50	
	EFC	1		20	

Species	Record Centre	Number of Roost Records	Total Roost Records	Number of Activity Records	Total Activity Records
Nathusius's pipistrelle	NBIS	0	2	18	50
	SBIS	1		12	
	EFC	1		20	
Natterer's bat	NBIS	7	39	339	439
	SBIS	11		60	
	EFC	21		40	
Noctule	NBIS	1	5	408	612
	SBIS	3		137	
	EFC	1		67	
Serotine	NBIS	1	6	243	354
	SBIS	2		81	
	EFC	3		30	
Soprano pipistrelle	NBIS	9	35	861	1,257
	SBIS	13		242	
	EFC	13		154	
Whiskered	NBIS	0	0	0	1
	SBIS	0		1	
	EFC	0		0	
Whiskered or Brandt's	NBIS	0	0	46	48
	SBIS	0		2	
	EFC	0		0	
Long-eared bat	NBIS	0	4	2	33
	SBIS	0		15	
	EFC	4		16	
Myotis Species	NBIS	0	8	8	74
	SBIS	3		49	
	EFC	5		17	
Nyctalus Species	NBIS	0	0	0	4
	SBIS	0		4	

Species	Record Centre	Number of Roost Records	Total Roost Records	Number of Activity Records	Total Activity Records
	EFC	0		0	
Pipistrelle Species	NBIS	1	13	19	149
	SBIS	3		77	
	EFC	9		53	
Unidentified	NBIS	0	6	20	89
	SBIS	2		51	
	EFC	4		18	

4.4 Survey Results

4.4.1 Surveys commenced in November 2023 and will continue through 2024. However, this report only incorporates baseline information collected up to the end of September 2023. Survey results will be incorporated within the ES.

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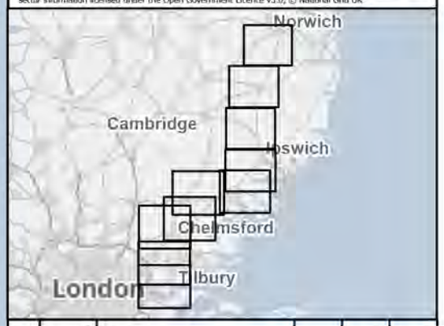
Annex A: Figures

Figure A8.6.1: Bats: Desk Study Bat Records.

Pages

Note: This figure has been revised. This does not affect the preliminary assessment in the PEIR. For more details we refer you to the Errata and Corrections Log (June 2024) on the Project website

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B	June 2024	FOR STATUTORY CONSULTATION	KF	AF	KB
A	April 2024	FOR STATUTORY CONSULTATION	MS	AF	KB

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records Overview

Designed	R. Murphy	Date	June 2024
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Checked	A. Fell	Date	June 2024
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Suitability Code:	A2	Project Number:	10059280

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Proposed substation extension

Norwich Main Substation

Pecks Plantation CWS

Page 1 and 2

0 1:75,000 2.5 km

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Draft order limits

Proposed project design details

- Proposed full line tension gantry
- Proposed pylon position
- Proposed overhead line alignment
- Existing substation
- Proposed substation extension
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

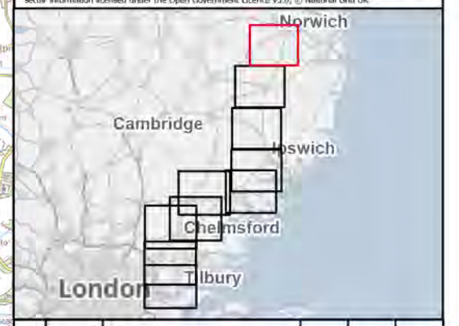
- 2km Study Area
- 6km Study Area
- Activity
- Roost

Non-statutory designated sites

- County Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Page 1 and 2

Waveney Valley Overhead Line

Section A

Section B

Page 2 and 3

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Draft order limits

Project sections

Proposed project design details

Proposed pylon position

Proposed overhead line alignment

Other temporary and permanent construction and operational works

Discipline specific constraints

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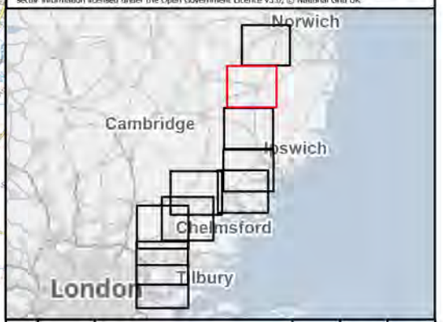
6km Study Area

Activity

Roost

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
Page 2 of 10

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Waveney Valley Alternative

Trenchless Crossing: Waveney Valley Alternative (north channel)

Trenchless Crossing: Waveney Valley Alternative (south channel)

Section A

Section B

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Draft order limits

Project sections

Proposed project design details

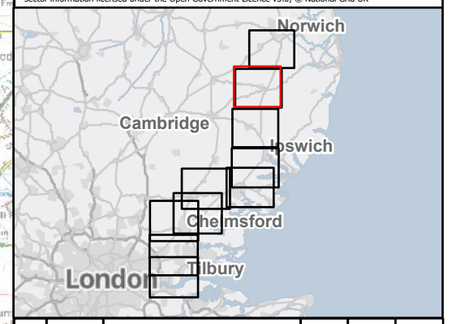
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- Proposed low duty gantry
- Proposed lattice pylons
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- 6km Study Area
- Activity
- Roost

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
Page 2a of 10

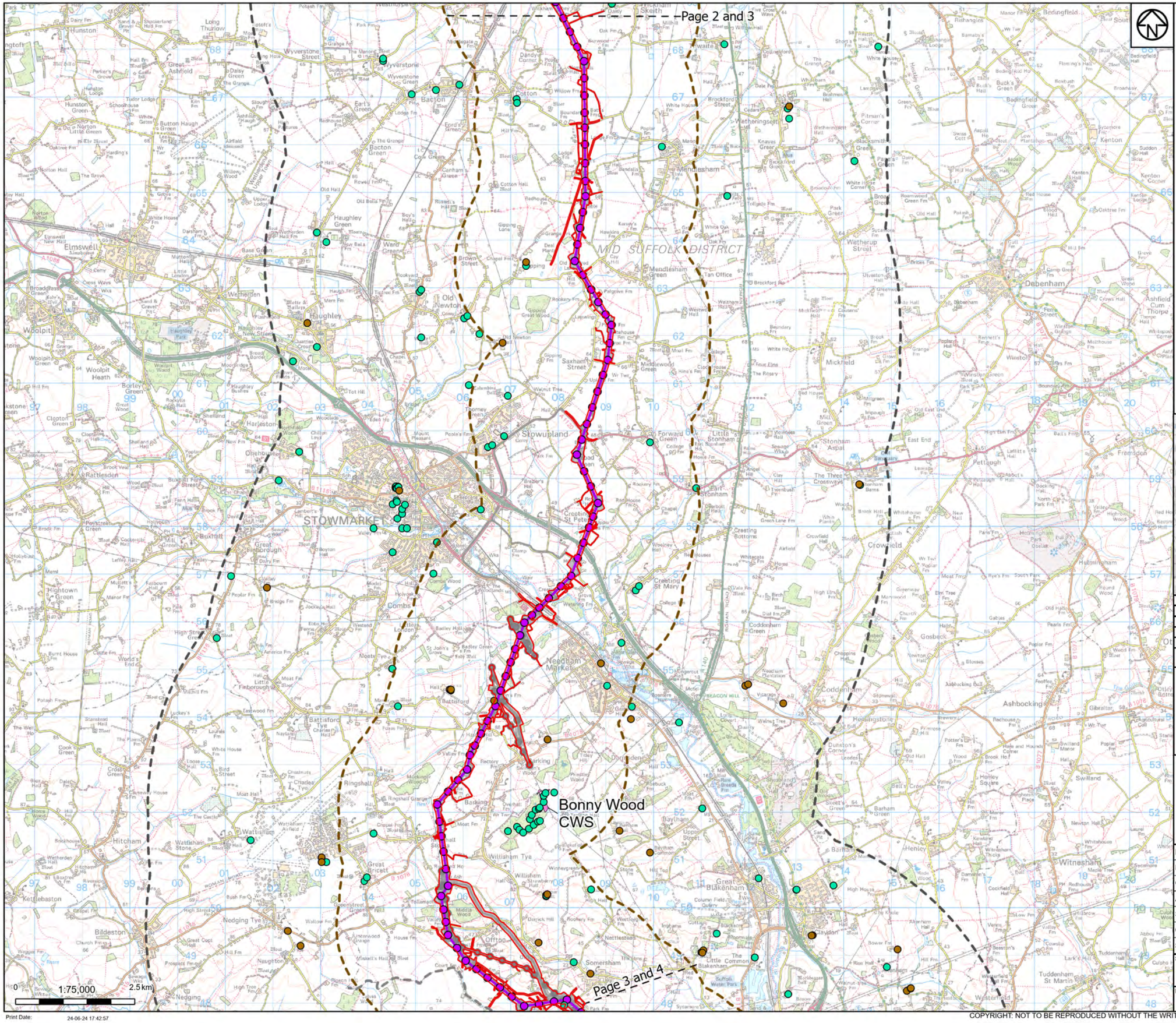
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Draft order limits

Project sections

Proposed project design details

Proposed pylon position

Proposed overhead line alignment

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

6km Study Area

Activity

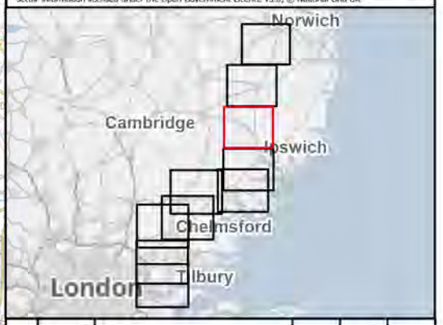
Roost

Non-statutory designated sites

County Wildlife Sites

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Bramford Substation

Bramford Meadows CWS

Page 3 and 4

Proposed substation extension

Section B

Section C

Sproughton Park CWS

Chantry Park, Beechwater and Meadow CWS

Raydon Great Wood CWS

Trenchless Crossing: Higham Road

Trenchless Crossing: River Stour (north part)

Trenchless Crossing: River Stour (south part)

Trenchless Crossing: Woodland Crossing Near St Mary's Church Langham

Page 4 and 5

Trenchless Crossing: A12 highway crossing

Proposed EACN Substation

Section D

Section G

0 1:75,000 2.5 km

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Draft order limits

Project sections

Proposed project design details

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Proposed low duty gantry

Proposed pylon position

Proposed overhead line alignment

Proposed underground cable alignment

Existing substation

Proposed substation extension

Proposed EACN substation

Proposed cable sealing end compound

Proposed environmental areas

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

6km Study Area

Activity

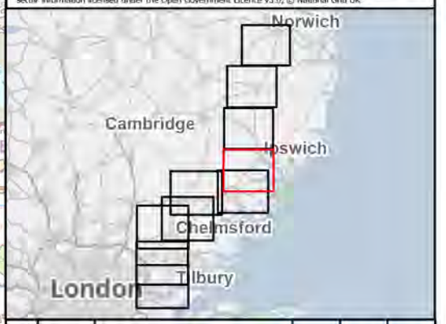
Roost

Non-statutory designated sites

County Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Designed	R. Murphy	Date	June 2024
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Trenchless Crossing: Higham Road

Trenchless Crossing: River Stour (north part)

Trenchless Crossing: River Stour (south part)

Trenchless Crossing: Woodland Crossing Near St Mary's Church Langham

Page 4 and 5

Trenchless Crossing: A12 highway crossing

Page 5 and 6

Proposed EACN Substation

Trenchless Crossing: Railway crossing (east of Ardleigh)

Section D

Section C

0 1:75,000 2.5 km

Print Date: 24-06-24 17:43:23

Draft order limits

Project sections

Proposed project design details

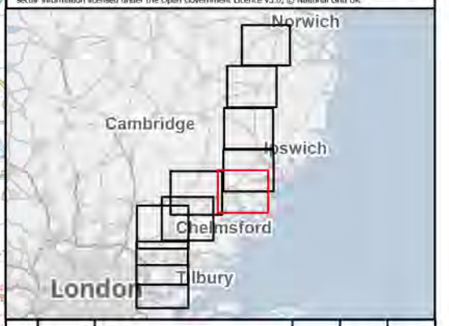
- Proposed full line tension gantry
- Proposed pylon position
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed EACN substation
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- 6km Study Area
- Activity
- Roost

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Draft order limits

Project sections

Proposed project design details

Proposed full line tension gantry

Proposed low duty gantry

Proposed pylon position

Proposed overhead line alignment

Proposed underground cable alignment

Proposed cable sealing end compound

Proposed environmental areas

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

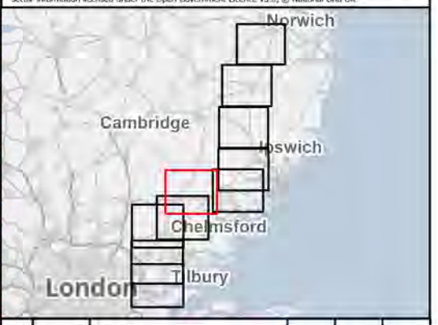
6km Study Area

Activity

Roost

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

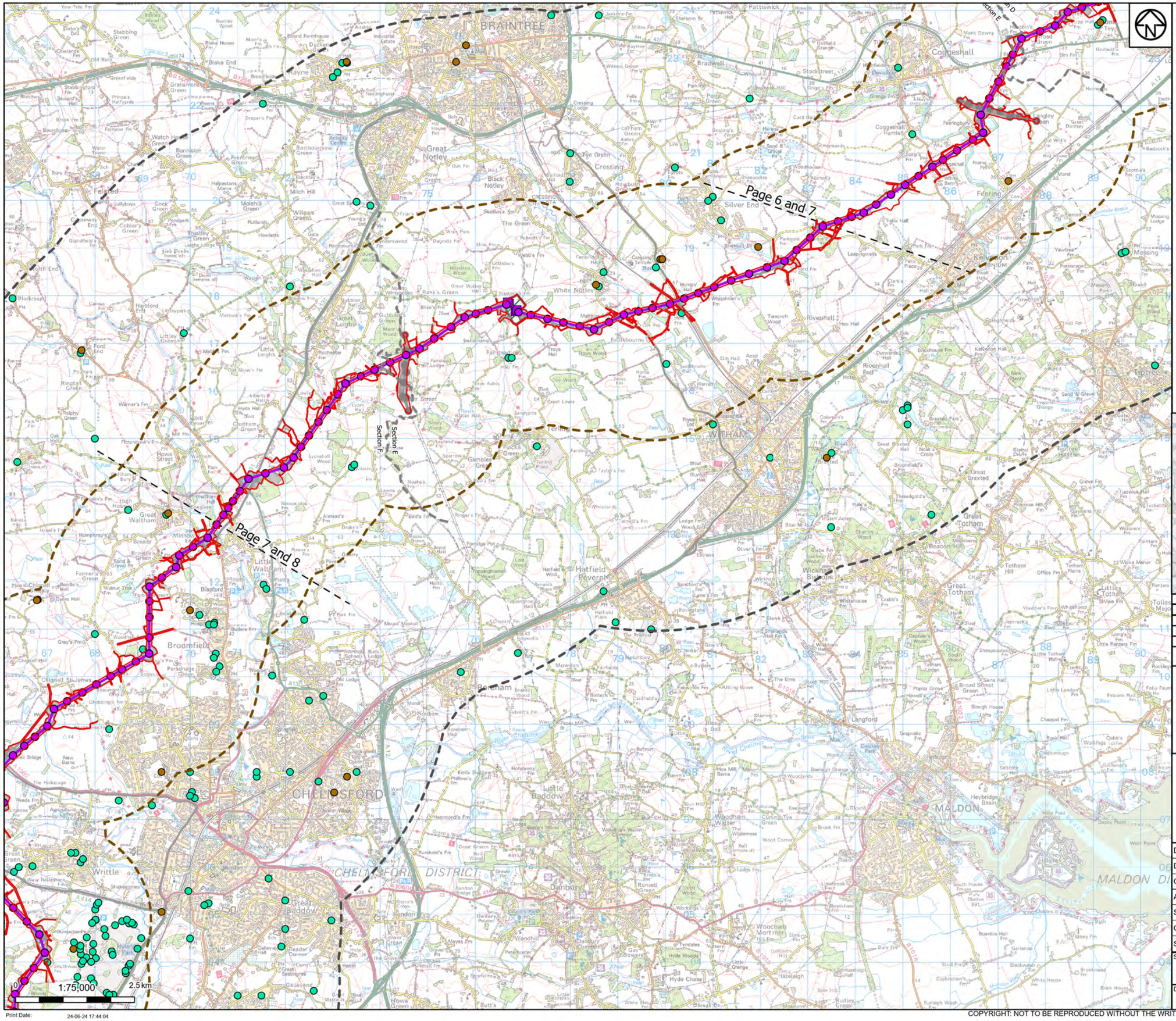
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Draft order limits

Project sections

Proposed project design details

- Proposed low duty gantry
- Proposed pylon position
- Proposed overhead line alignment
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- 6km Study Area
- Activity
- Roost

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
Page 7 of 10

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Suitability Description:
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Draft order limits
Project sections

Proposed project design details

Proposed low duty gantry
Proposed pylon position
Proposed overhead line alignment
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

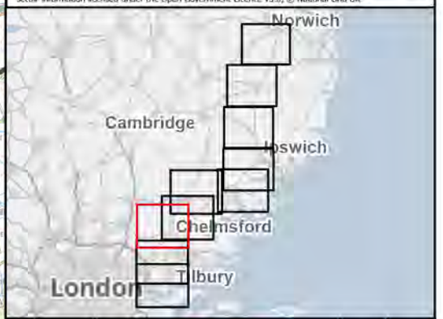
Discipline specific constraints

2km Study Area
6km Study Area
Activity
Roost

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

Page 7 and 8
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PROJECT:
Norwich to Tilbury

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
Page 8 of 10

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0 1:75,000 2.5km

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Page 8 and 9

Page 9 and 10

Section F
Section G
Section G
Section H
Section G
Section H

Trenchless Crossing:
Lower Thames Crossing (west of Tarmac)

0 1:75,000 2.5 km

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- Draft order limits
- Project sections

Proposed project design details

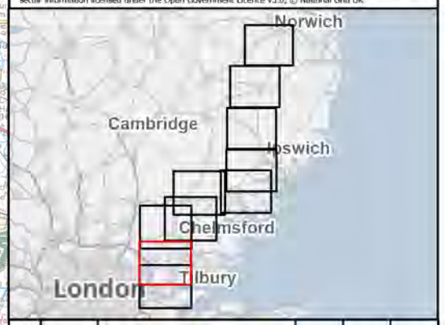
- Proposed pylon position
- Proposed overhead line alignment
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- 6km Study Area
- Activity
- Roost

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PROJECT: Norwich to Tilbury

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Section G
Section H

Page 9 and 10

Section G
Section H

Trenchless Crossing:
Lower Thames Crossing (west of Tarmac)

Trenchless Crossing:
Lower Thames Crossing (Muckingford Road)

Tilbury
Substation

Trenchless Crossing:
Tilbury Loop Railway and existing
overhead lines (NGET and DNO)

BASILDON
URMINSTER
HURCH
Bulphan
Corringham
Fobbing
Stanford-le-Hope
HURROCK
GRAYS
TILBURY
NORTHFLEET
GRAVESEND
SWANSCOMBE
MEDWAY
HOO PENINSULA
RIVER THAMES
Blyth Sands

0 1:75,000 2.5 km

Print Date: 24-06-24 17:45:10

- Draft order limits
- Project sections

Proposed project design details

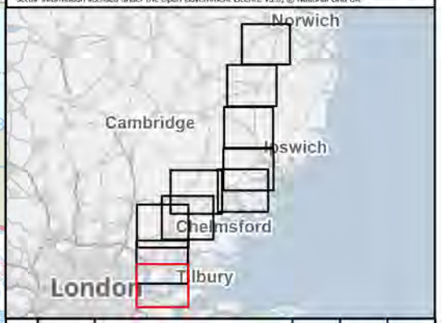
- Proposed full line tension gantry
- Proposed pylon position
- Proposed overhead line alignment
- Proposed underground cable alignment
- Existing substation
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- 6km Study Area
- Activity
- Roost

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.6.1 - Ecology and Biodiversity - Desk Study Bat Records
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Appendix 8.7: Bat Activity Report

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The Great Grid Upgrade

Norwich to Tilbury

Norwich to Tilbury

Preliminary Environmental Information Report - Volume III

Appendix 8.7: Bat Activity Report

April 2024

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Annex D: Weather Conditions of the Static Detector Surveys

1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of the National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description in Volume I.

1.2 Ecological Background

1.2.1 The ecological background and scope of the bat surveys is set out in the Environmental Impact Assessment (EIA) Scoping Report (National Grid, 2022). It was anticipated that the landscape surrounding the Project contained habitat suitable for bats that is well connected to the wider landscape by features such as rivers, tree-lined watercourses, arable field margins, extensive hedgerows, and broadleaved woodland. These habitats have the potential to support a wide range of UK bat species, including rare woodland bats (i.e., barbastelle *Barbastella barbastellus*) that do not occur where habitat diversity is of lower quality.

1.2.2 The general approach to impact assessment for bats is to ensure that effects to bats are avoided, where possible, minimised and / or mitigation provided to maintain the favourable conservation status of species present that utilise the habitats across the Project. Overall, the Project approach aims to provide habitats of equal or better quality than that affected by the Project and ensure that these habitats are well connected to

the wider landscape. This would be achieved by avoiding permanent effects to habitats of perceived value to bats, reinstating habitats affected by temporary habitat loss to equal or better condition than existing and improving the quality and availability of ecological networks across the Project.

1.2.3 Based upon this approach, the Environmental Impact Assessment Scoping Report (National Grid, 2022) identified the need for surveys for bats where (i) trees required removal to facilitate the construction of the Project and (ii) where significant potential adverse effects to roosting, foraging, and commuting bats may occur, for example, in areas of underground cabling, cable sealing end (CSE) compounds, substations and associated construction areas. At the time of writing, no buildings, or other man-made structures have been identified that would be removed by the Project and so there has been no assessment for bats of such structures.

1.2.4 This report details the approach to surveying bats to obtain a baseline on bat activity across the Project, as identified in the Environmental Impact Assessment Scoping Report, National Grid, 2022. Appendix 8.6: Bat Roosting Report in Volume III provides the approach to bat roost surveys.

1.3 Brief and Objectives

1.3.1 The aim of the survey work is to obtain a baseline data for the Project. This would be achieved by undertaking the following:

- A detailed desk study
- Field surveys to establish the presence of bats and determine species
- Locate and characterise roosts within the draft Order Limits
- Locate and characterise commuting and foraging habitats within the survey area.

1.3.2 The objectives of the study were to:

- Use the baseline dataset to determine the importance of the survey area for bats and identify key areas of bat activity
- Outline requirements for further survey work to inform detailed mitigation design and for a European Protected Species licence application (should this be required)

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided in Table A8.7.1.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.7.1) has been considered with regards to the methodology included within this report.

Table A8.7.1 - Legal Compliance

Legislation	Details
Conservation of Habitats and Species Regulations 2017 (as amended) ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for bats (Special Areas of Conservation (SACs)) and to provide protection for these sites through designation, planning, and other controls. Barbastelle, Bechstein's bat (*Myotis bechsteinii*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) are also listed on Annex II of the Habitats Directive, which means that SACs may be attributed to internationally important roosts and foraging areas of these species. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, injure, disturb, trade in, damage or destroy a breeding site or resting place of the animals such as bats that are listed in Schedule 2. However, these actions can be made lawful through the granting of licences by the appropriate authority (Natural England). Licences may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the bat species concerned.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter by making it an offence to kill, injure, take, damage, destroy, sell, or possess them (with exceptions). All 18 native UK bat species receive protection under Schedule 5 of the Wildlife and Countryside Act 1981 (WCA) (as amended). Under this Act it is an offence to intentionally kill, injure or take any protected species; intentionally or recklessly damage, destroy or obstruct access to any structure or place which a protected species uses for shelter or protection; and intentionally or recklessly disturb any protected species while it is occupying a structure or place which it uses for shelter or protection.

Legislation	Details
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	The NERC Act 2006 places a duty upon public bodies to maintain Section 41 (s41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions. Seven species of bats are identified as species of principal importance these are: greater horseshoe bat; lesser horseshoe bat; Bechstein's bat; noctule (*Nyctalus noctula*); soprano pipistrelle (*Pipistrellus pygmaeus*); brown long-eared bat (*Plecotus auritus*); and barbastelle.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Desk Study

3.1.1 A desk study was conducted in September 2023 and subsequently in January 2024 following a design change, to identify records for bats within the draft Order Limits and a 6 km search area from the draft Order Limits. Only data that was collected in the past 10 years was requested in accordance with standard practice. Records were obtained from the following Local Environmental Records Centres (LERCs):

- Norfolk Biodiversity Information Service (NBIS)
- Suffolk Biodiversity Information Service (SBIS)
- Essex Field Club (EFC)

3.1.2 The record centres also provided information on non-statutory designated sites within 2 km of the draft Order Limits. Non-statutory designated sites were reviewed for any mention of bats in their designation citation.

3.1.3 A search for Special Areas of Conservation (SACs) within 30 km of the draft Order Limits, where designation was due to bats being considered a qualifying feature, was conducted using the Multi-Agency Geographic Information for the Countryside (MAGIC) and the Joint Nature Conservation Committee (JNCC) websites. A further search of national statutory designated sites within 2 km was conducted using MAGIC, where bats are the qualifying interest feature.

3.2 Survey Methodology

3.2.1 For the survey methodology detailed below, professional judgment based upon previous experience and best practice guidance (Collins, 2023) has been followed.

Automated static detector surveys

Scoping

3.2.2 Aerial photographs and Ordnance Survey maps were examined to identify the distribution of suitable habitats within the landscape and the connectivity of features for bats to determine the most appropriate locations at which to locate static detectors (also referred to as statics). This desk-based information was used in combination with the proposed design of the Project. Statics were strategically placed where effects to bats are anticipated because of severance / fragmentation of habitat, temporary removal of vegetation and / or indirect effects arising from light and noise of temporary construction (i.e., haul roads, access tracks, compounds). Locations that were identified for the placement of static detectors must meet the following criteria:

- Loss of suitable linear habitat (i.e., a significant gap in high value linear habitat which is determined would adversely affect bat species using the site), or
- Habitat is suitably mature, thick (at least 5 m wide) with a structural and species diversity, or

- Roosting habitat (buildings / woodlands with roost potential) is connected to suitable habitat at either end that is likely to support bat activity

3.2.3 Based upon the initial scoping assessment, the proposed static locations were reviewed, and Red-Amber-Green (RAG) rated. The RAG rating criteria was as follows:

- Red: High value bat habitat (i.e., deciduous woodland, structurally diverse and mature hedgerows, suitable features connecting to buildings)
- Amber: Moderate value bat habitat (i.e., conifer plantation with linear habitat connections, scattered trees, and pasture / meadow habitat)
- Green: Low value bat habitat (i.e., filled with gaps, fragmented and recently planted hedgerows, and arable land)

3.2.4 To enable a pragmatic approach to static survey deployment along the length of the Project, locations rated Red and Amber were taken forward for static surveys. No static detectors were deployed in low value habitat (RAG rated Green). Following best practice guidance (Collins, 2023), Red rated static detector locations were operational for 5 consecutive nights per month from May to September. Amber rated static detector locations were operational for five consecutive nights in pre-parturition (spring), maternity (summer) and post-parturition (autumn).

Field Surveys

3.2.5 Based upon the scoping assessment, a total of 64 locations for static detectors were identified in locations throughout the survey area, with locations shown on Figure A8.7.1 Bats: Static Deployment 2023/2024, in Annex B [Note: the numbering is not consecutive due to alterations in the route alignment]. Of the 64 locations identified, 31 were Amber-rated and 33 Red-rated.

3.2.6 The Batlogger mini full spectrum static bat detectors were calibrated at the beginning of the surveys and deployed with omnidirectional microphones directed at an upward angle and at a height of approximately 2 m, recording for a minimum of 5 consecutive nights. In 2023, due to access restrictions, the static detectors were operational from between June and September 2023. This is discussed further in the limitations section of this report.

3.2.7 Due to access restrictions, all 64 locations were not surveyed in 2023, and so further surveys would take place in the period May to September 2024. The dates of static detector deployment completed to date can be found in the table in Annex C.

3.2.8 The static detectors were set to begin recording 30 minutes prior to sunset and until 30 minutes after sunrise on an automatic trigger with threshold values at ‘Crest Advantage’, allowing for high sensitivity detection of bat calls. Settings can be viewed in Annex A.

3.2.9 It should be noted that no transect surveys have been included as part of the bat survey work scope, the need for such surveys would be determined through automated static detector surveys and advanced bat licensed survey techniques.

Sound Analysis

3.2.10 All recordings were stored on memory cards and subsequently analysed using Kaleidoscope Pro, an automated analysis software. For the purposes of analysis, a ‘bat pass’ is defined as a single sound file. Each sound file was analysed using Kaleidoscope Pro software to verify species.

3.2.11 Kaleidoscope Pro analysis software produces an output which presents the automated identification of each recording. When the recordings show bats to be present, Kaleidoscope Pro identifies the echolocation call down to species level. Kaleidoscope Pro analyses individual pulses and the overall bat sequence of pulses to make a classification.

Activity Normalisation

3.2.12 Prior to the static detector data being statistically analysed, the data will be 'normalised' to allow activity levels between positions to be compared. Transforming the data to 'passes per hour' controls seasonal variation in night length, allowing for standardised data to provide an index of activity which can be compared across different detector locations. The 'normalisation' of data will be conducted by dividing the number of calls recorded by the number of hours that a detector was recording.

3.2.13 Data analysis will then be undertaken using 'R' script software that allows more comprehensive data analysis. This approach provides improvements in the depth of assessment and graphical representation of the data compared other statistical analysis.

Advanced Bat Licenced Survey Techniques

3.2.14 The radiotracking surveys identified in Appendix 8.6: Bat Roosting Report in Volume III, provide a picture of the roost resource in the woodland affected by the Project and information on bat commuting routes and foraging habitat that have the potential to be affected by the Project. The results of this survey will be used to inform the assessment of effects on commuting and foraging bats.

3.3 Dates of Survey and Personal

3.3.1 The lead surveyors in the static detector surveys were experienced ecologists, competent at undertaking static detectors surveys. Dates of the surveys and weather conditions are presented Annex C and D.

3.4 Notes and Limitations

3.4.1 Records held by local ecological record centres are collected on a voluntary basis; the absence of records does not demonstrate the absence of species; it may simply indicate a gap in recording coverage. The data collection is not exhaustive and can be biased towards areas with public access or where surveys have taken place to inform other development projects. It is possible that bats are present within/adjacent to the draft Order Limits that were not identified during the data searches; undertaking the surveys outlined in this report will ensure this is not a constraint to the impact assessment.

Due to access limitations, automated static detector surveys were not conducted across the survey area in May 2023. Surveys were conducted from June to September 2023 as access became available. It is considered that lack of survey data for May 2023 is not a significant limitation to the study, as baseline data will be obtained from automated static detector surveys between May to September 2024 in combination with proposed radiotracking surveys, which will provide detailed information on targeted species

activity and roosting behaviours across the survey area where effects to roosting, foraging, and commuting are predicted.

4. Results

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4. Results

4.1 Overview

4.1.1 Analysis of data collected in the 2023 surveys has yet to be undertaken, therefore this report presents the results of the desk study. Desk study results can be seen in Figure A.8.6.1 Bats: Desk Study Bat Records within Annex A of Appendix 8.6: Bat Roosting Report in Volume III. Survey results shall be reported within the ES.

4.2 Desk Study Results

Statutory Designated sites

4.2.1 Sixteen SACs were situated within 30 km of the draft Order Limits, none of which held bats as an Annex II species, as the primary reason for designation or as a qualifying feature.

4.2.2 Twenty-four SSSIs were situated within 2 km of the draft Order Limits, and none mentioned bats within their citation. However, it should be noted that desk study records showed the presence of bats within or close to most of these sites.

Non-Statutory Designated sites

4.2.3 A total of five County Wildlife Sites (CWS) were reported mentioning bats within the site's citation. None of these sites identify bats as a reason for designation. The details of these five CWS can be found in Appendix 8.6: Bat Roosting Report in Volume III.

Species Records

4.2.4 As reported in Appendix 8.6: Bat Roosting Report in Volume III, a total of 6,153 records of bat activity and were obtained from the three local biodiversity record centres with a confirmed 11 species. These species were barbastelle, brown long-eared bat, long-eared *sp*. *(Plecotus sp.),* common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle (*Pipistrellus nathusii*), pipistrelle *sp*. (*Pipistrellus sp*.), Daubenton's bat (*Mytois daubentonii*), myotis sp (*Myotis sp.*), Leisler's bat (*Nyctalus leisleri*), Natterer's bat (*Myotis nattereri*), *Myotis sp.,* whiskered bat (*Myotis mystacinus*), potential whiskered or Brandt's bat (*Myotis brandtii*), noctule (*Nyctalus noctula*), Leisler's bat (*Nyctalus leisleri*), serotine (*Eptesicus serotinus*), *Nyctalus sp*. and unidentified bat. See Appendix 8.6: Bat Roosting Report in Volume III for more details.

4.3 Survey Results

4.3.1 The data from the automated static detector surveys is being processed and analysed and will be reported in the ES.

4.3.2 Radiotracking surveys are anticipated to take place in the summer of 2024. Results will be presented within the ES.

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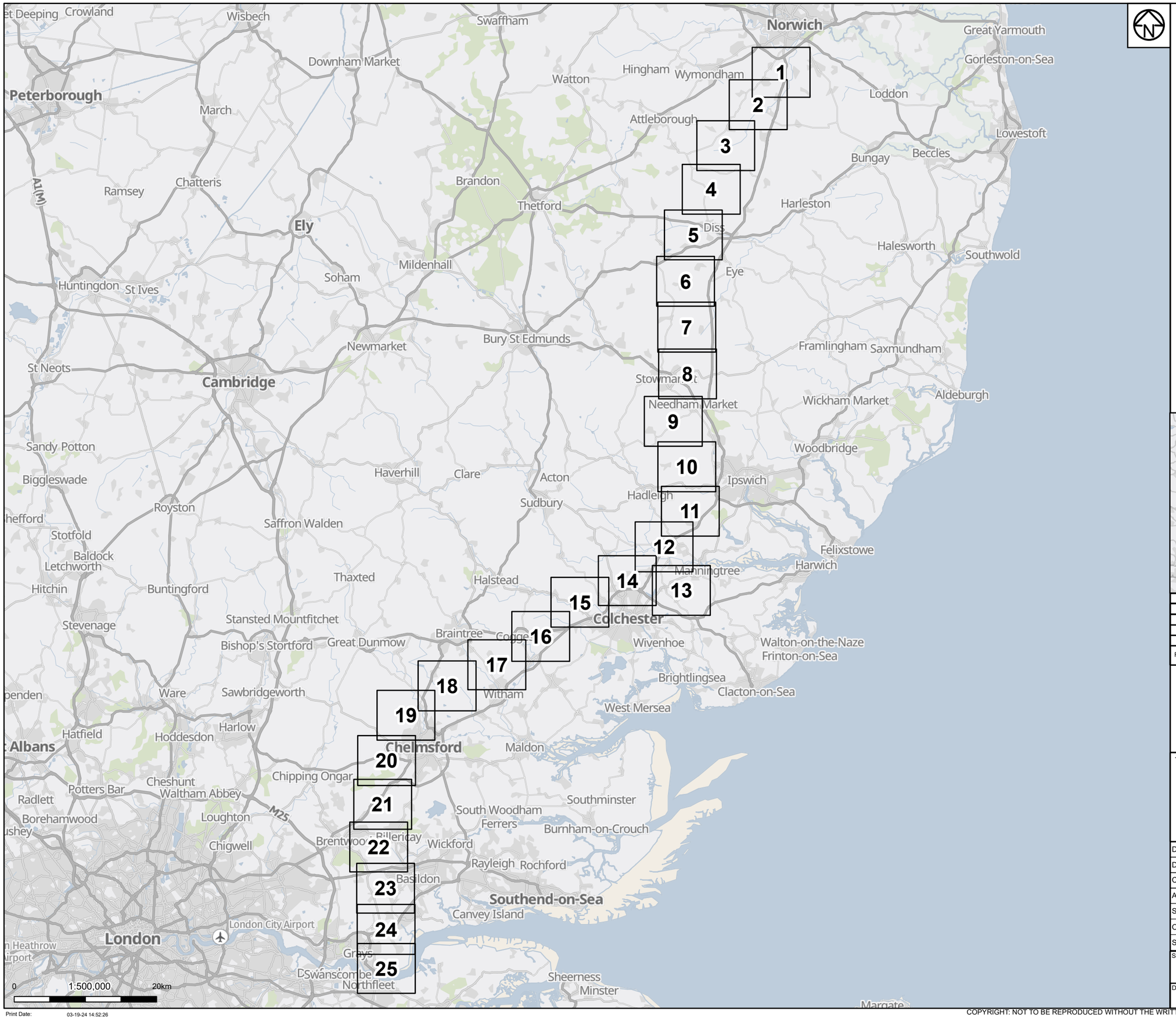
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Annex A: Bat Detector Settings

Deployment Scenario		Reason
SM4BAT-FS		
Start dd/mm/yy hh:mm:ss	Ignore	
Slot A	128GB	
Slot B	128GB	
Mic 0:	SMM-U1	
Trig Ratio (%)	10% (default)	
Battery (Wh)	72 Wh (default)	
Setting		
Prefix	SM4-FS-001 (to 030)	
Gain	12dB	
Timezone	UTC+01 (= *BST. Need to change to UTC when the clock go back*	
Lat:	xx.xxN	Add appropriate value
Lon:	yy.yyW	Add appropriate value
16 kHz HPF	Off	
Sample rate	256kHz	
Call duration min	0.5ms	
Call duration max	Off	
Call frequency min	10kHz (*default is 16kHz*)	
Trigger level	*Use default (12dB)*	
Trigger window	3s	
Trigger max time	00:15	
Sunrise/sunset		
LED delay off		
Schedule		
Start	Set - 00:30	
Duty	always	
End	Rise + 00:30	

Annex B: Figures

Figure A8.7.1: Bats: Static deployment 2023/2024.



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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Overview

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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

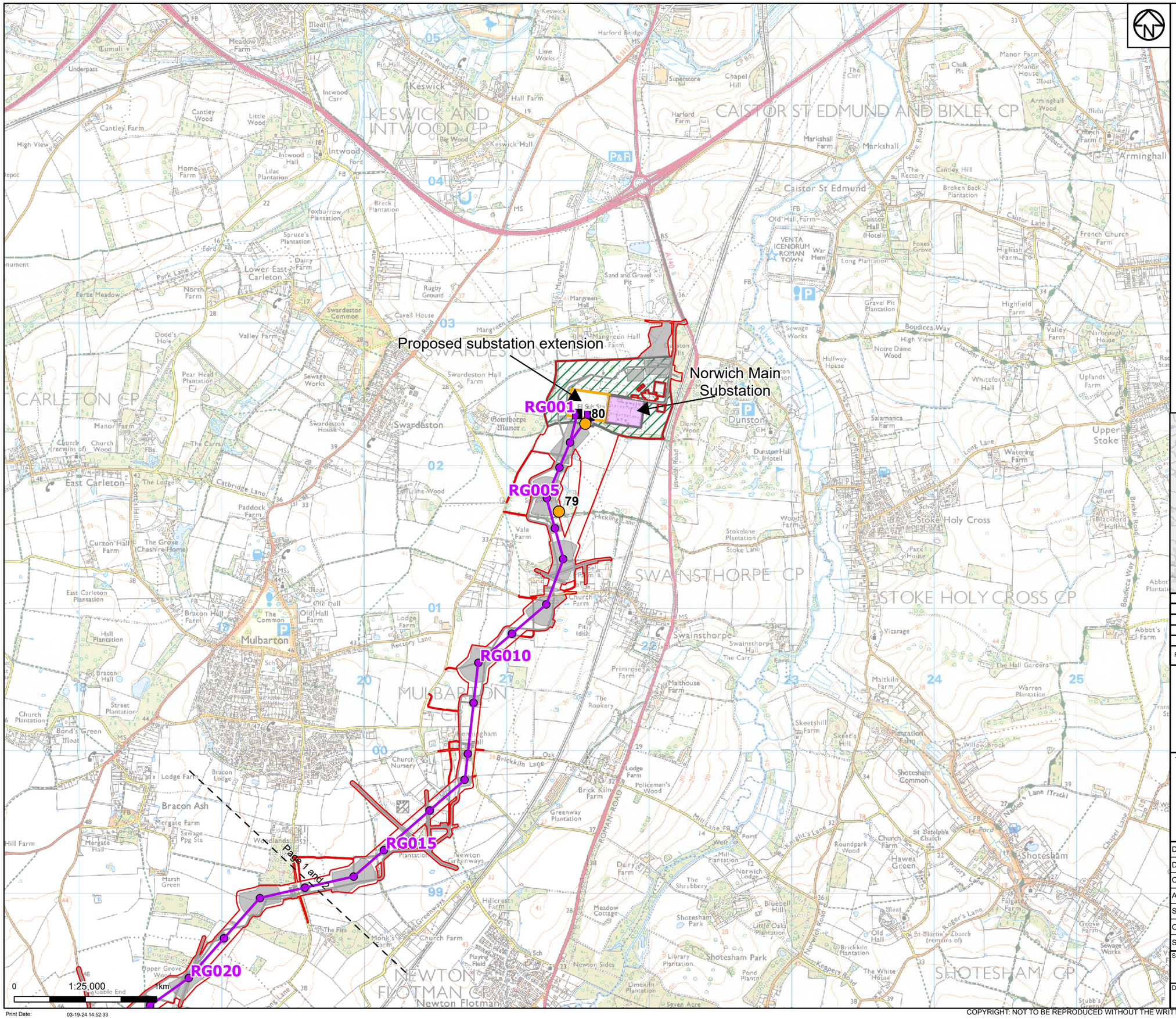
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

Risk Level - Medium

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 1 of 25

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RG010
RG015
RG020
RG025
RG030
RG035
78
77
82
Page 1 and 2
Page 2 and 3
BRACON ASH CP
WRENINGHAM CP
ASHWELLTHORPE AND FUNDENHALL CP
FLORDON CP
THARSTON AND HAPTON CP
TACOLNESTON CP
NEWTON FLOTMAN CP
MULBARTON CP
TASBURGH CP
Bracon Ash
Wreningham
Hethel
Hapton
Fundenhall
Forncett St Mary
Flordon
Tharston
Low Tharston
Newton Flotman
Saxlingham Thorpe
Tasburgh
Norwich
Cambridge
Ipswich
Chelmsford
London
Tilbury
0
1km
1:25,000
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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - Medium
Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 2 of 25

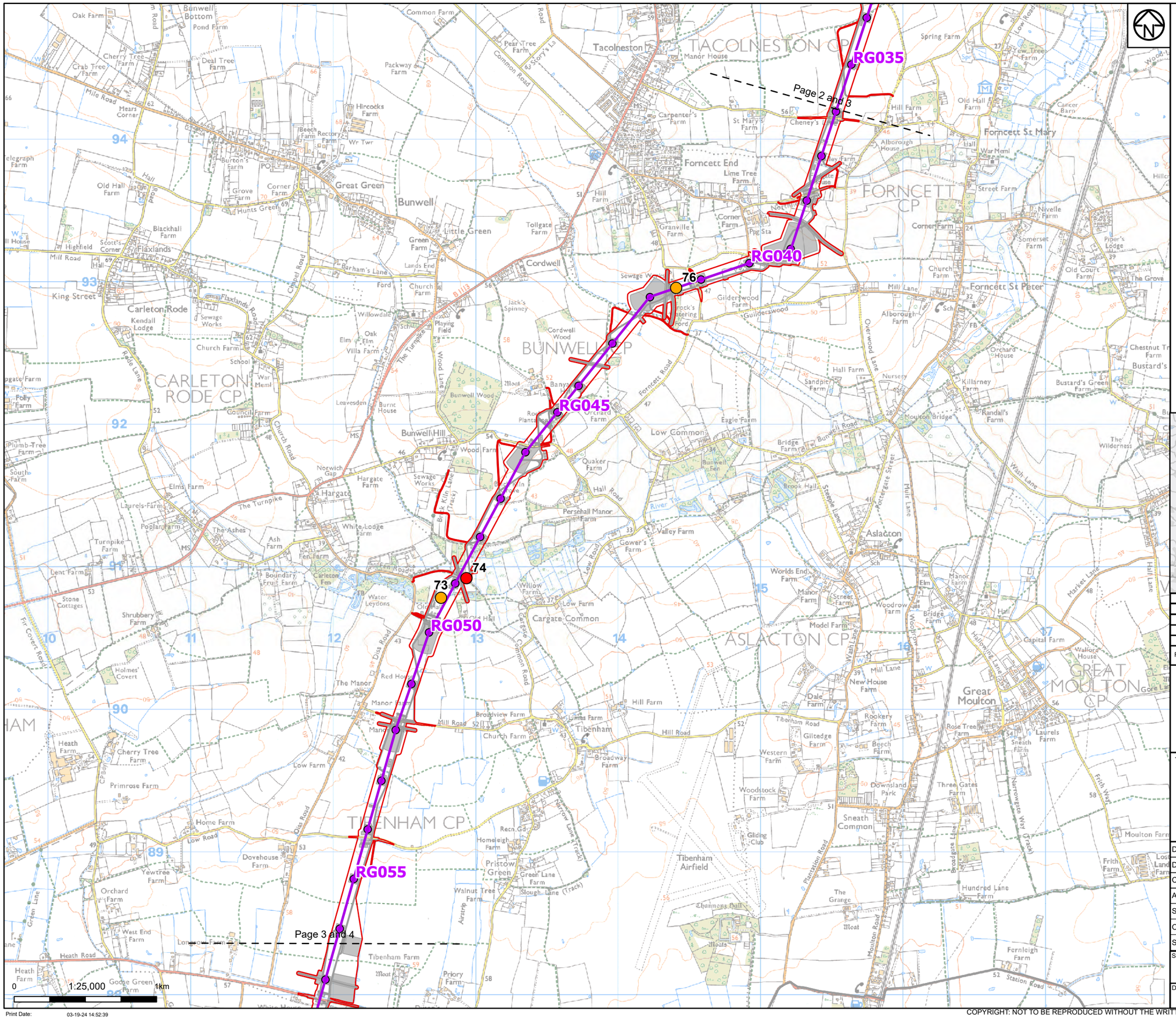
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Proposed overhead line alignment

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Other temporary and permanent construction and operational works

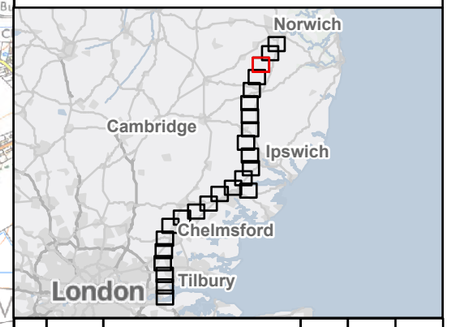
Discipline specific constraints

Risk Level - Medium

Risk Level - High

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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RG055

Page 3 and 4

RG060

RG065

72

RG070

87

71

RG075

Page 4 and 5

WINFARTHING CP

SHELFANGER CP

BRESSINGHAM CP

GISSING CP

BURSTON AND SHIMPLING CP

0 1:25,000 1km

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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - High

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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Waveney Valley Overhead Line

RG075
RG080
RG085
RG090
RG095
RG100

71
70
88
67
69
98
99
63

Page 4 and 5
Page 5 and 6

Section A
Section B

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - Medium
Risk Level - High

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0 1:25,000 1km

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 5 of 25

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Waveney Valley Alternative

RG070
87
71
RG075
RG080
70
88
RG85
67
69
98
RG90
99
RG095

Trenchless Crossing:
Waveney Valley Alternative
(north channel)

Trenchless Crossing:
Waveney Valley Alternative
(south channel)

Section A
Section B

BRESSINGHAM CP
SHELFANGER CP
ROYDON CP
DISS CP
PALGRAVE CP
WORTHAM CP
THRANDESTON CP

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed lattice pylons
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - Medium
Risk Level - High

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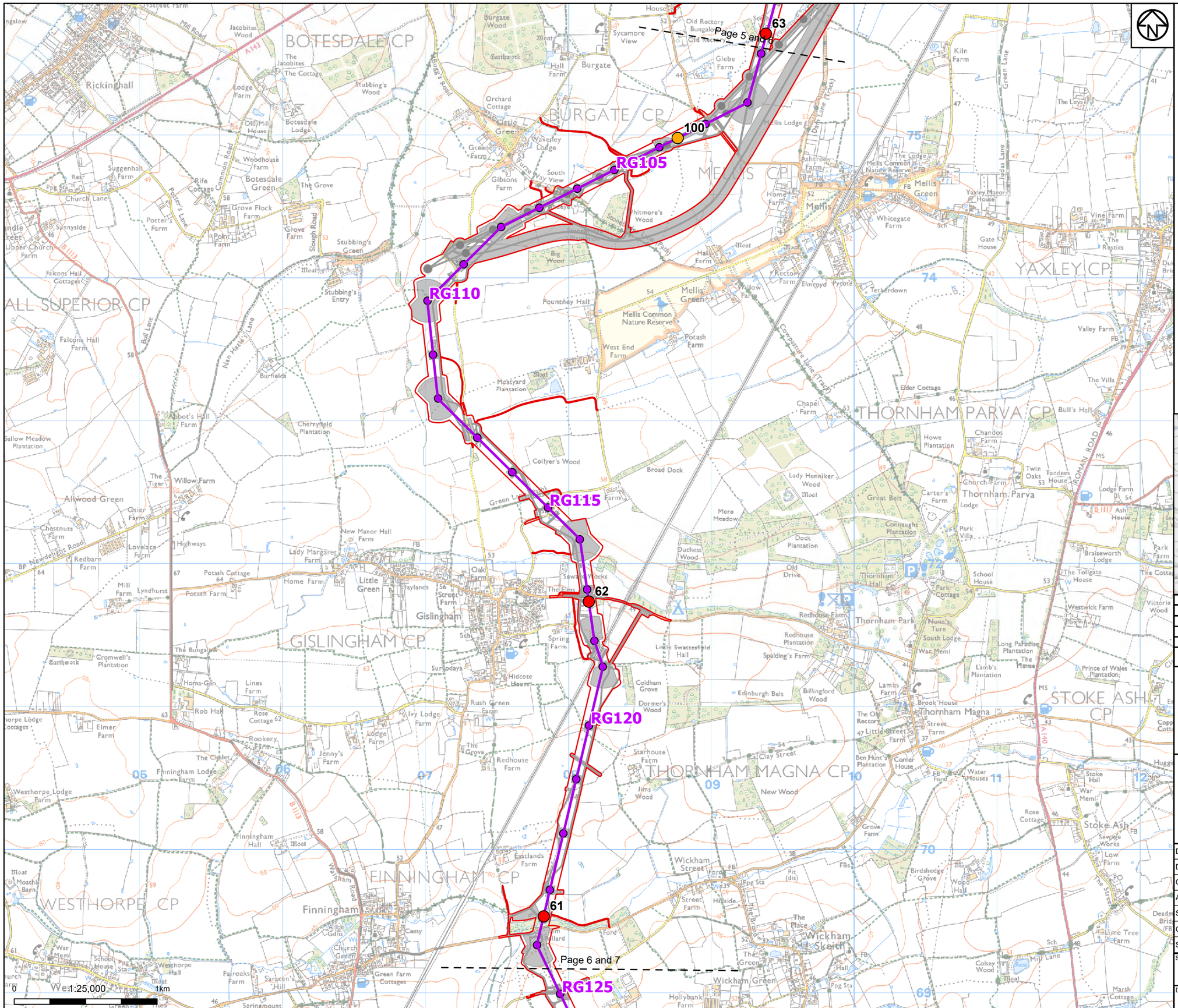
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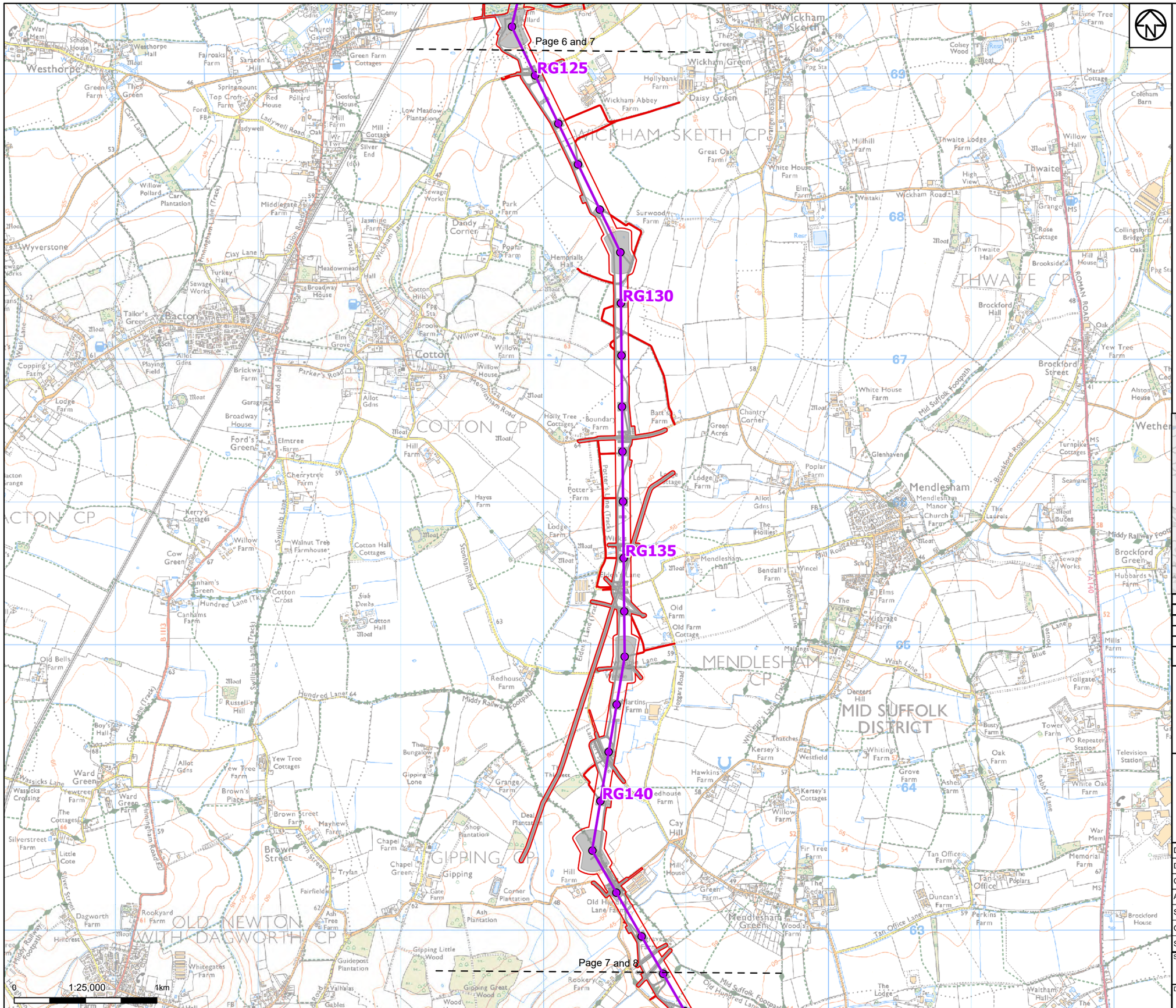
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Discipline specific constraints

Risk Level - High

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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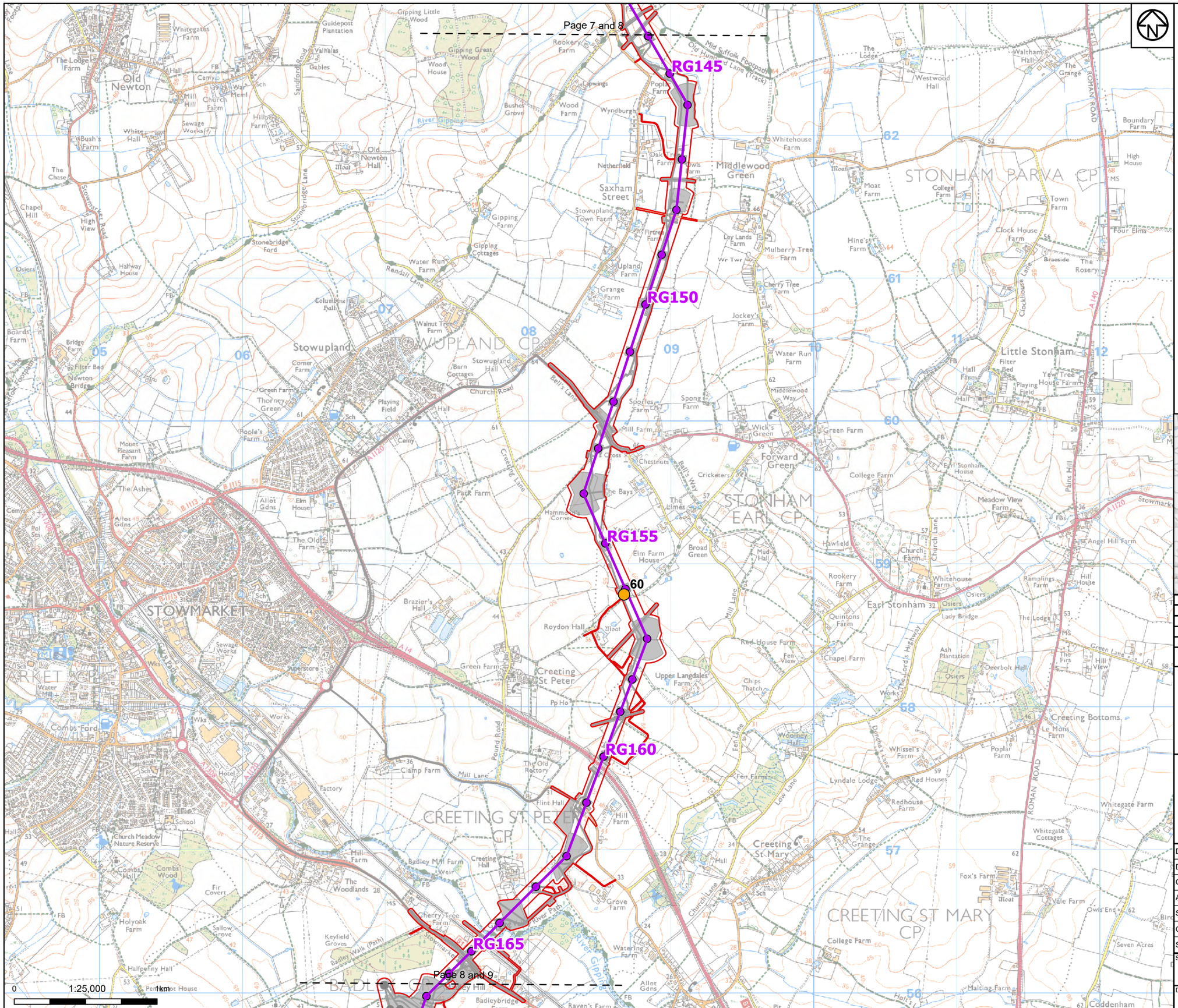
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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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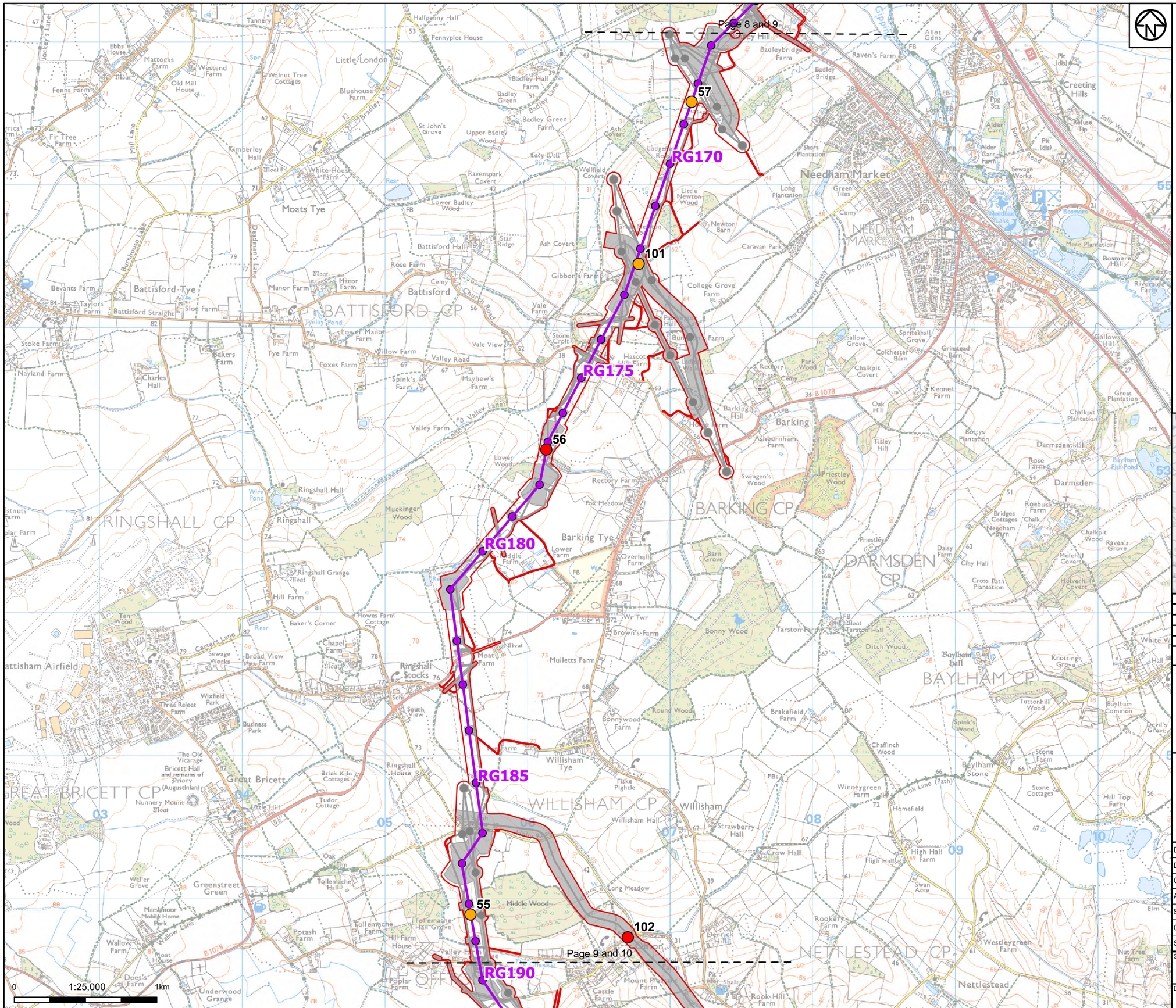
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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 9 of 25

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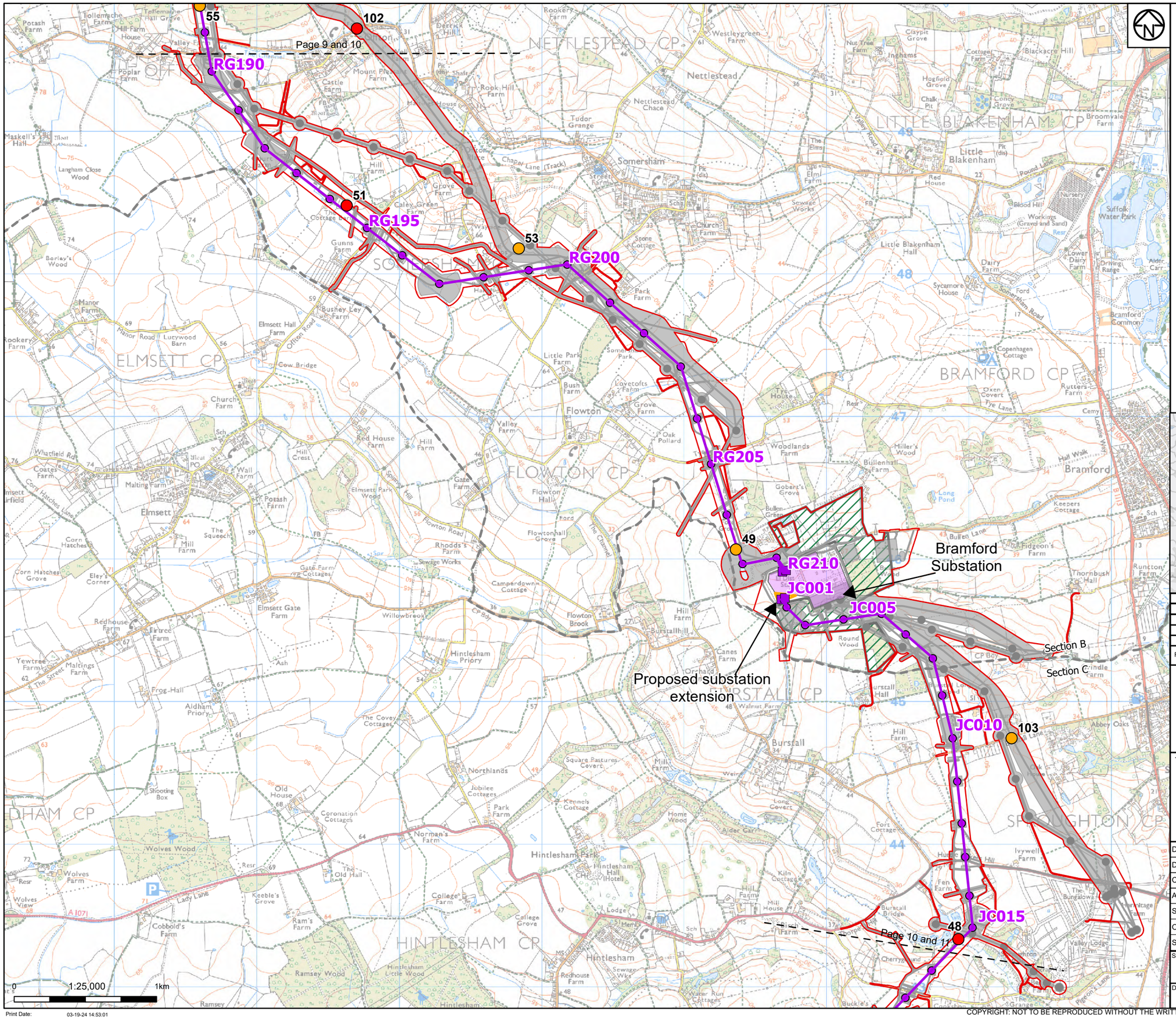
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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 10 of 25

Designed	H. Smith	Date	April 2024
Drawn	M. Shetye	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127 Revision: A

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JC015
JC020
JC025
JC030
48
46
21
Page 10 and 11
Page 11 and 12
HINTLESHAM CP
CHATTISHAM CP
COPDOCK AND WASHBROOK CP
BELSTEAD CP
WENHAM PARVA CP
WENHAM MAGNA CP
HOLTON ST MARY CP
CAPEL ST MARY CP
BENTLEY CP
Capel St Mary
Holton St Mary
Great Wenham
Raydon
Hintlesham
Chattisham
Copdock
Washbrook
Bentley
Wenham Grange
Little Wenham
Lattinford Hill
0 1:25,000 1km

Print Date: 03-19-24 14:53:05

Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Risk Level - Medium
Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 11 of 25

Designed	H. Smith	Date	April 2024
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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Revision: A

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Trenchless Crossing: Higham Road

Trenchless Crossing: River Stour (north part)

Trenchless Crossing: River Stour (south part)

Trenchless Crossing: Woodland Crossing Near St Mary's Church Langham

Trenchless Crossing: A12 highway crossing

Page 11 and 12

Page 12 and 13

0 Langham 1:25,000 1km

Draft order limits

Project sections

Proposed project design details

Proposed underground cable alignment

Other temporary and permanent construction and operational works

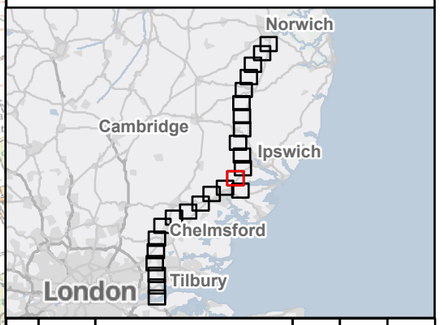
Discipline specific constraints

Risk Level - Medium

Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 12 of 25

Designed	H. Smith	Date	April 2024
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Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

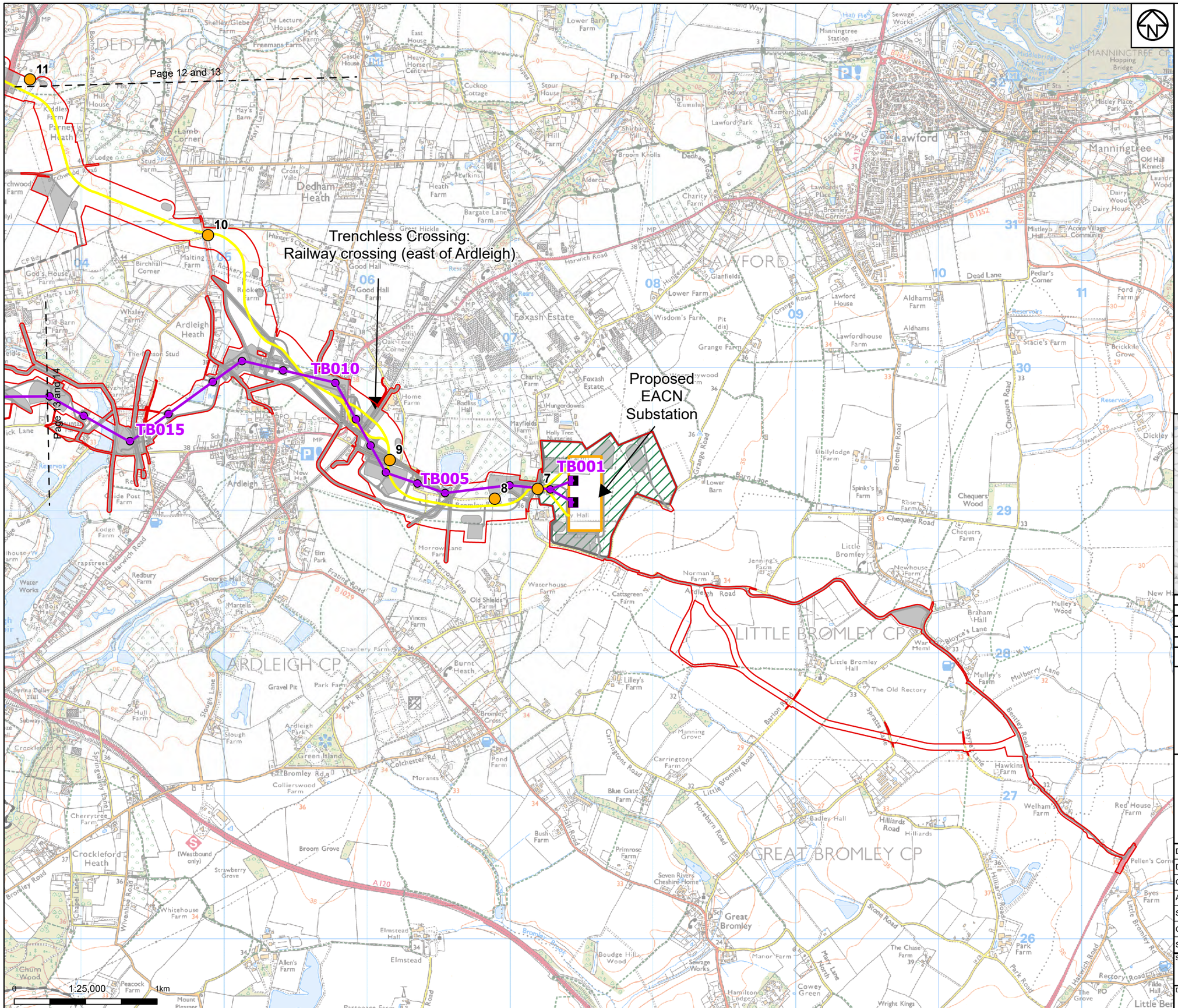
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127

Revision: A

Print Date: 03-19-24 14:53:08

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Draft order limits

Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed EACN substation
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Risk Level - Medium

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 13 of 25

Designed	H. Smith	Date	April 2024
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Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

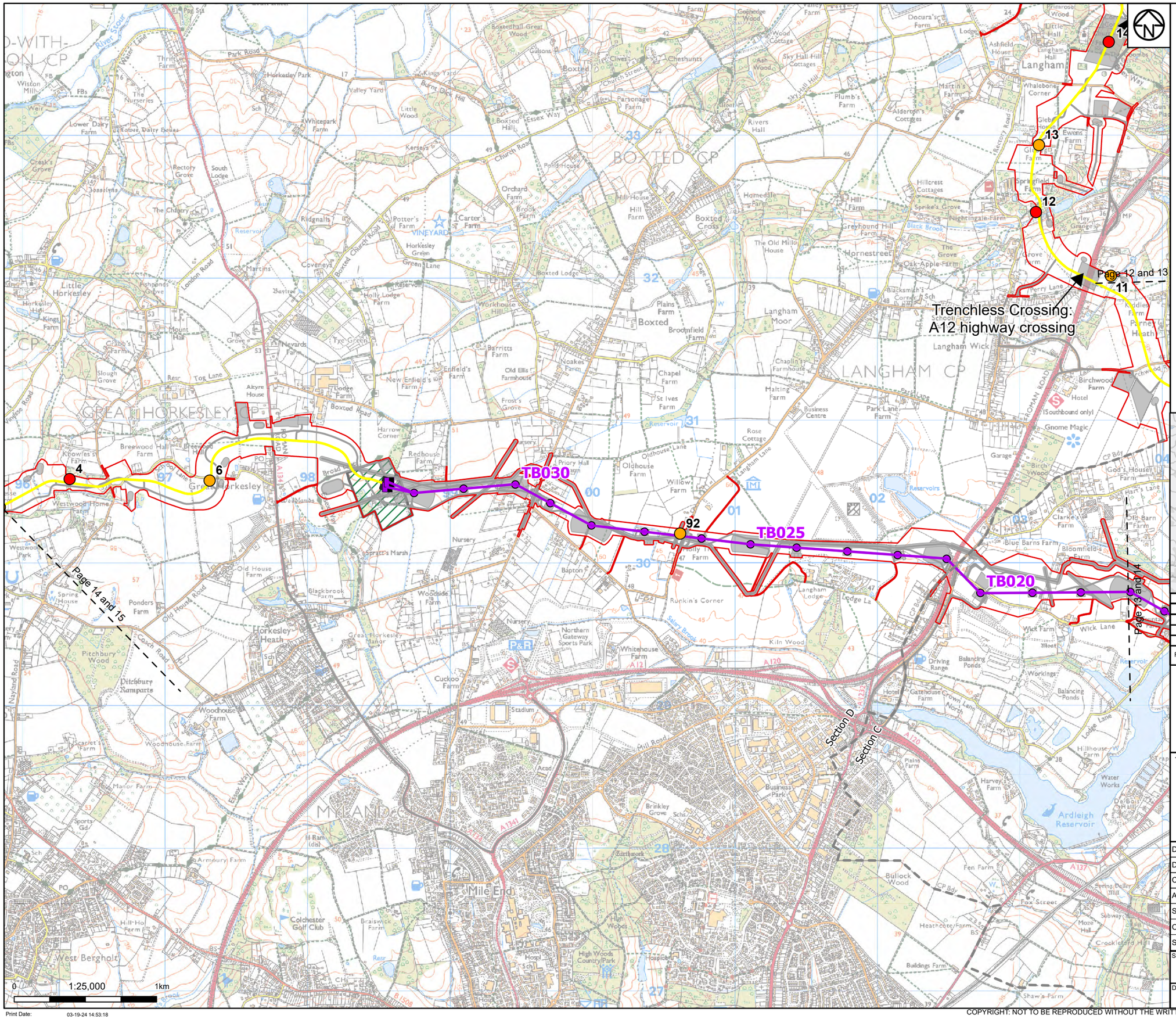
Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127

Revision: A

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Draft order limits

Project sections

Proposed project design details

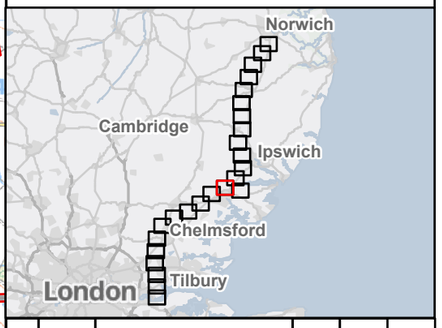
- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Risk Level - Medium
- Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 14 of 25

Designed	H. Smith	Date	April 2024
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Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127

Revision: A

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TB035
TB040
TB045
TB050
TB055
TB060
42
40
3
4
Page 14 and 15
Page 15 and 16
FORDHAM CP
WEST BERGHOLT CP
ALDHAM CP
EIGHT ASH GREEN CP
0 1:25,000 1km

Draft order limits
Project sections

Proposed project design details

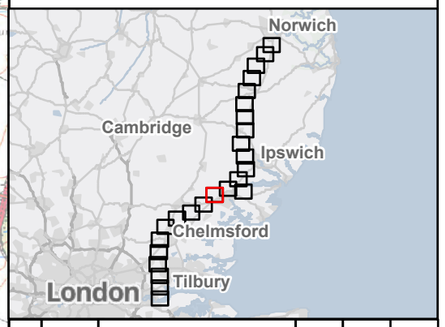
Proposed overhead line alignment
Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

Risk Level - Medium
Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 15 of 25

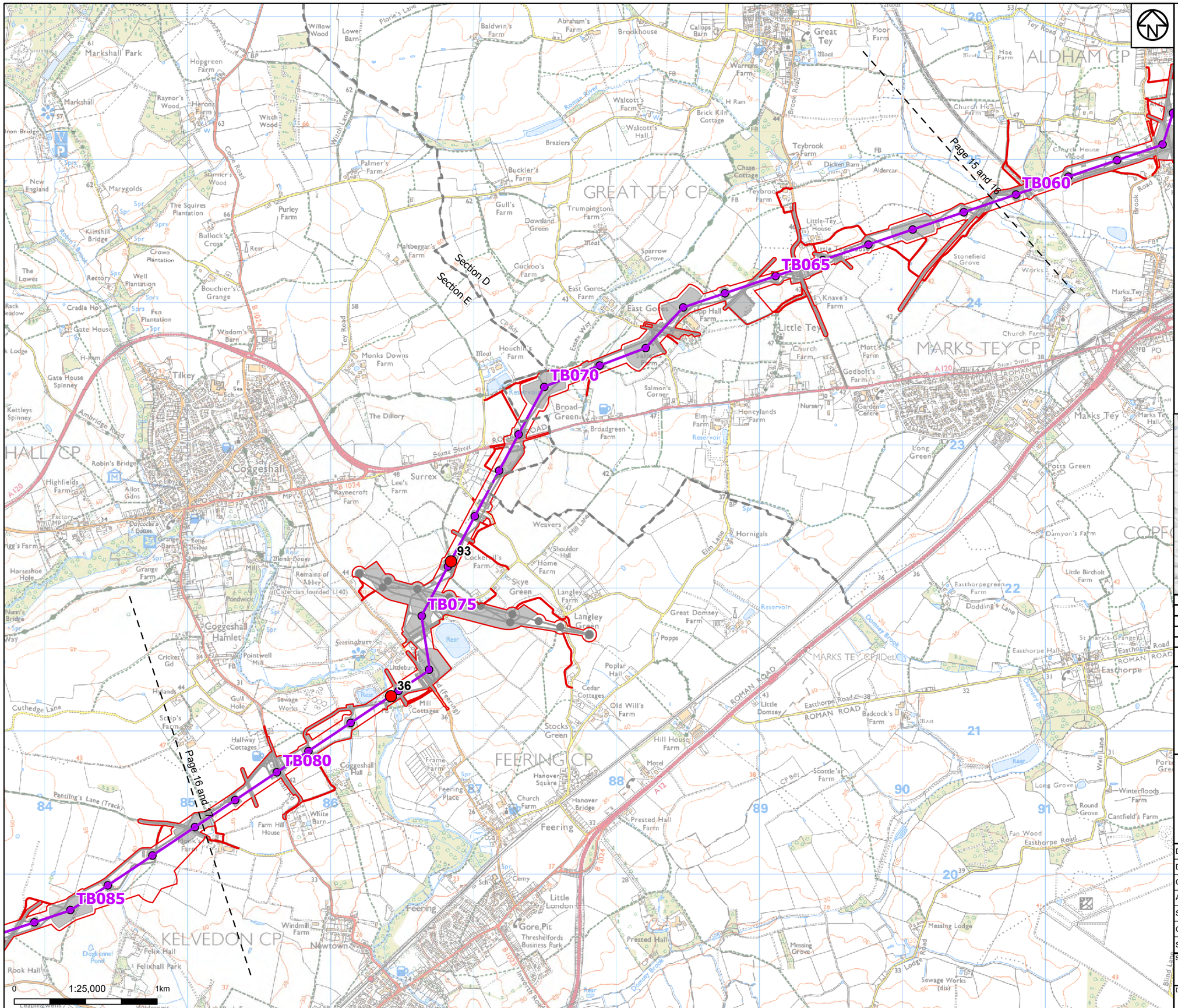
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Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127 Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

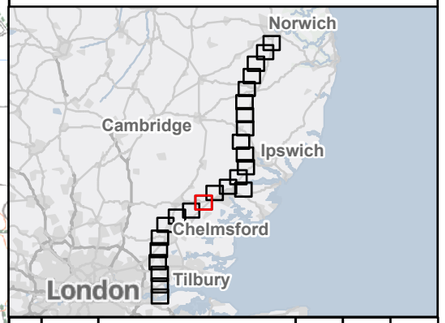
Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 16 of 25

Designed	H. Smith	Date	April 2024
Drawn	M. Shetye	Date	April 2024
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Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
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Suitability Code:	A2	Project Number:	10059280

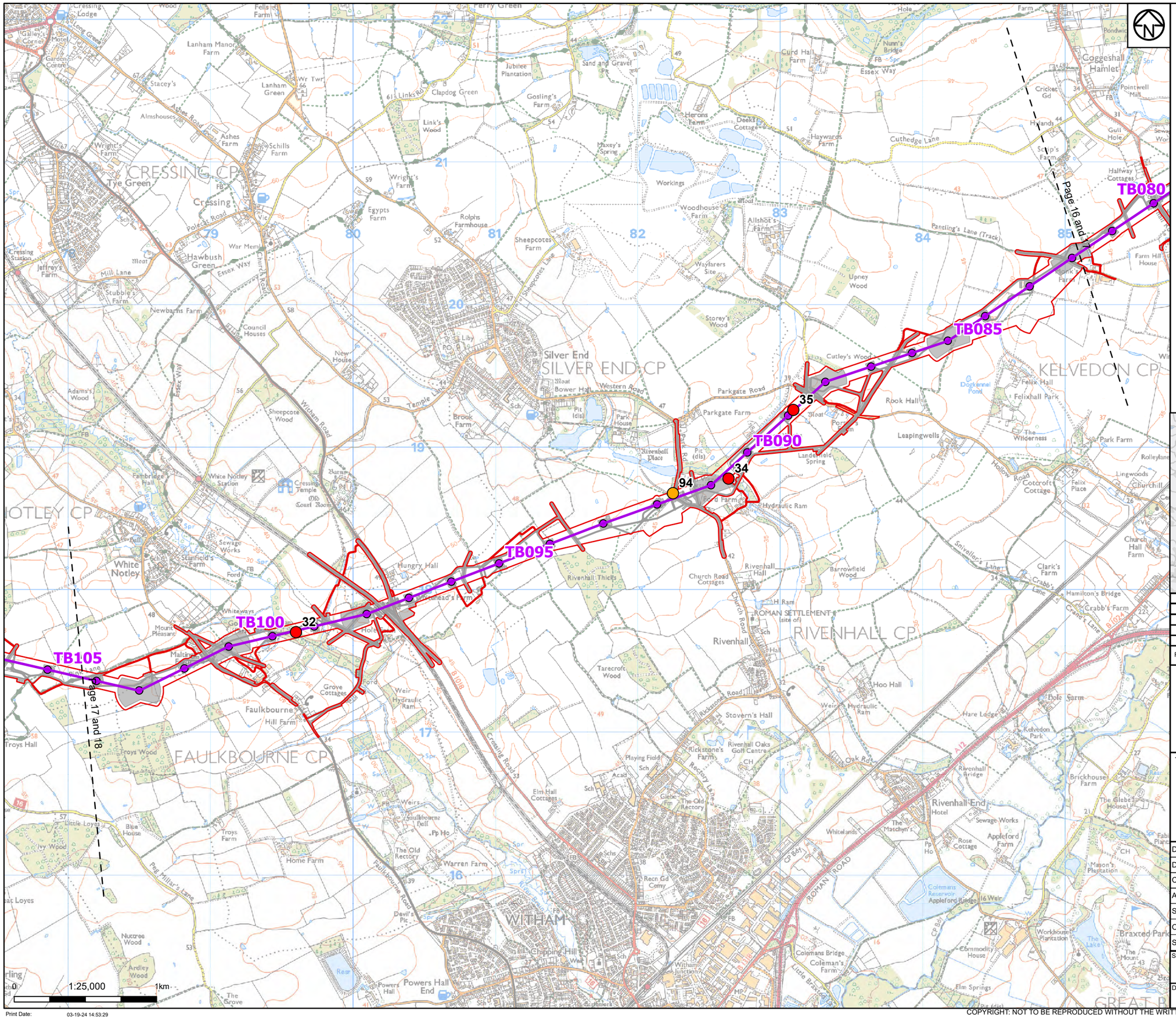
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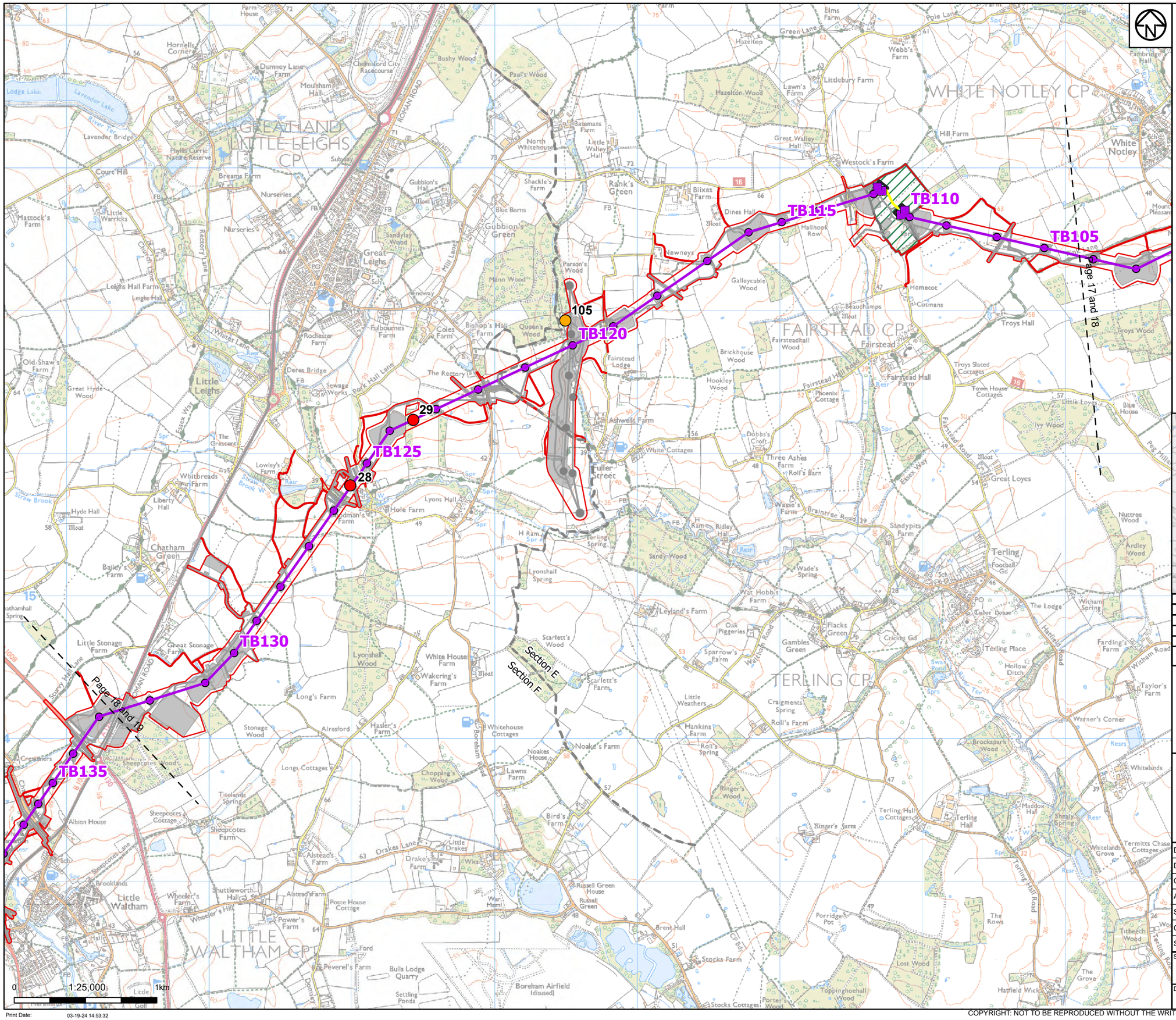
Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127

Revision: A

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TB080
TB085
TB090
TB095
TB100
TB105
35
34
94
32
Page 16 and 17
Page 17 and 18
CRESSING CP
SILVER END CP
KELVEDON CP
FAULKBOURNE CP
RIVENHALL CP
WITHAM
Silver End
Tye Green
Hawbush Green
Cressing
Rivenhall End
Coggeshall Hamlet
Lanham Green
Clapdog Green
Sheepcotes Lane
Parkgate Road
Western Road
Essex Way
Church Road
Mill Lane
Temple Lane
Witham Road
Faulkbourne Road
Crossing Road
Rickstone's Farm
Stovern's Hall
Rivenhall Oaks Golf Centre
Hungry Hall
Whitehead's Farm
Rivenhall Thicks
Rivenhall Hall
Church Road Cottages
ROMAN SETTLEMENT (site of)
Rivenhall
Tarecroft Wood
Hoo Hall
Hare Lodge
Kelvedon Park
Brickhouse Farm
The Glebe House
Rivenhall Bridge
Rivenhall End Hotel
Sewage Works
Appleford Farm
Rose Cottage
Whitelands
The Matchyn's
ROMAN ROAD
Coleman's Farm
Coleman's Bridge
Coleman's Reservoir Appleford Bridge
Commodity House
Workhouse Plantation
Braxted Park
Elm Springs
Chipping Hill
Powers Hall End
Faulkbourne Hall
Troys Wood
Troys Farm
Home Farm
Warren Farm
Faulkbourne Hall Farm
Grove Cottages
Weir Hydraulic Ram
Hydraulic Ram
Elm Hall Cottages
Playing Field
The Old Rectory
Glebe Fm
Recn Gd Cemy
Faulkbourne Dell
Pp Ho
Devil's Plc
Powers Hall
Whitehead's Farm
Whiteways
Mount Pleasant
Maltings Plc
Grove Cottages
Stanfield's Farm
Sewage Works
White Notley
White Notley Station
Fambridge Hall
Cressing Temple
Old Court Room
Nuttree Wood
Ardley Wood
Peg Millar's Lane
Blue House
Ivy Wood
Little Loyes
Troys Wood
Troys Hall
Cressing Lodge
Galley's Corner
Motel
Garden Centre
Lanham Manor Farm
Stacey's
Almshouses
Ashes Road
Ashes Farm
Schills Farm
Wright's Farm
Egypts Farm
Rolphs Farmhouse
Sheepcotes Farm
Link's Wood
Jubilee Plantation
Sand and Gravel Pit
Gosling's Farm
Maxey's Spring
Herons Farm
Deeks Cottage
Curd Hall Farm
Haywards Farm
Cuthedge Lane
Workings
Woodhouse Farm
Allshot's Farm
Wayfarers Site
Upney Wood
Storey's Wood
Cutley's Wood
Rook Hall
Dogkennel Pond
Felix Hall
Felixhall Park
The Wilderness
Park Farm
Leapingwells
Landfield Spring
Hydraulic Ram
Cotcroft Cottage
Hollow Road
Lingwoods
Churchill
Felix Place
Rolleylane
Snivellers Lane
Clark's Farm
Crabb's Lane
Hamilton's Bridge
Crabb's Farm
Church Hall Farm
Barrowfield Wood
Pointwell Mill
Gull Hole
Halfway Cottages
Farm Hill House
Scrip's Farm
Pondwicks
Nunn's Bridge
Essex Way
Hole
Newbarns Farm
Council Houses
New House
Adams's Wood
Sheepcote Wood
Brook Farm
Park House
Riverball Place
Bower Hall
Moat
Liby
PO
Sch
Jeffrey's Farm
Stubble's Farm
War Meml
Vic
Cressing Station
Parkgate Farm
Landfield Spring
Dogkennel Pond
Porters Farm
Rook Hall
Felix Hall
Felixhall Park
The Wilderness
Park Farm
Leapingwells
Hollow Road
Cotcroft Cottage
Lingwoods
Churchill
Felix Place
Rolleylane
Snivellers Lane
Clark's Farm
Crabb's Lane
Hamilton's Bridge
Crabb's Farm
Church Hall Farm
Barrowfield Wood
Pointwell Mill
Gull Hole
Halfway Cottages
Farm Hill House
Scrip's Farm
Pondwicks
Nunn's Bridge
Essex Way
Hole
Curd Hall Farm
Haywards Farm
Cuthedge Lane
Pantling's Lane (Track)
Workings
Woodhouse Farm
Allshot's Farm
Wayfarers Site
Upney Wood
Storey's Wood
Cutley's Wood
Rook Hall
Dogkennel Pond
Felix Hall
Felixhall Park
The Wilderness
Park Farm
Leapingwells
Landfield Spring
Hydraulic Ram
Cotcroft Cottage
Hollow Road



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Draft order limits

Project sections

Proposed project design details

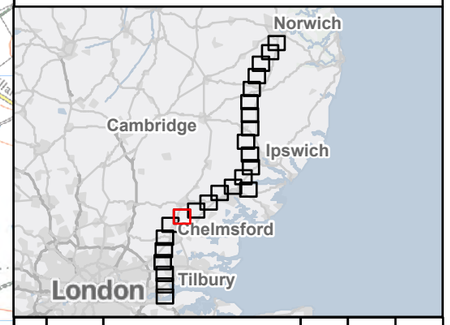
- Proposed overhead line alignment
- Proposed low duty gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- Risk Level - Medium
- Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
nationalgrid Norwich to Tilbury

Title:

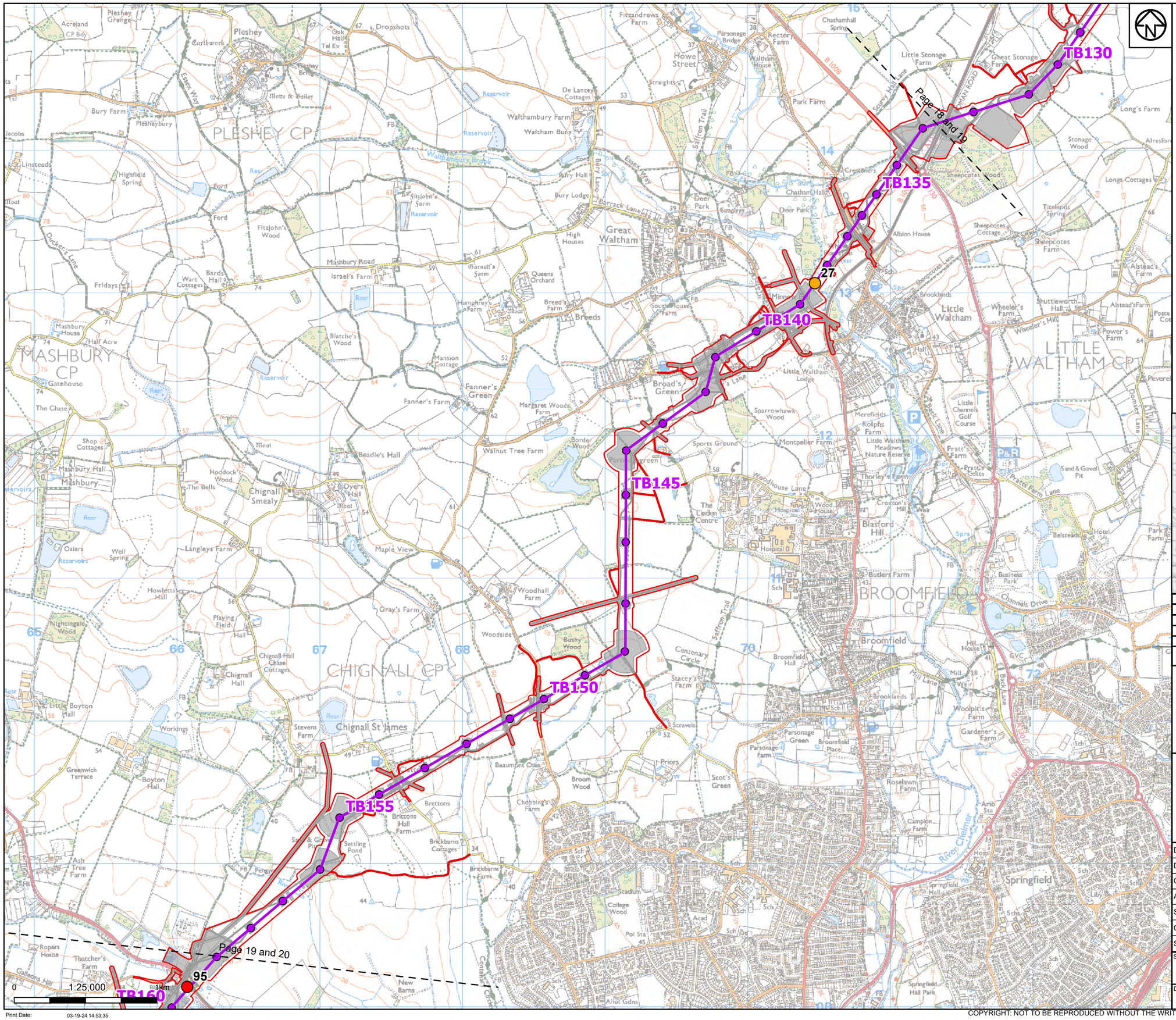
Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 18 of 25

Designed	H. Smith	Date	April 2024
Drawn	M. Shetye	Date	April 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00127
Revision: A

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

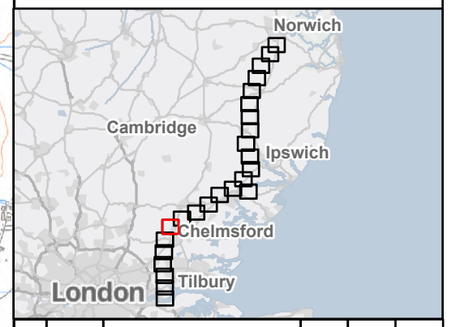
Discipline specific constraints

Risk Level - Medium

Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 19 of 25

Designed	H. Smith	Date	April 2024
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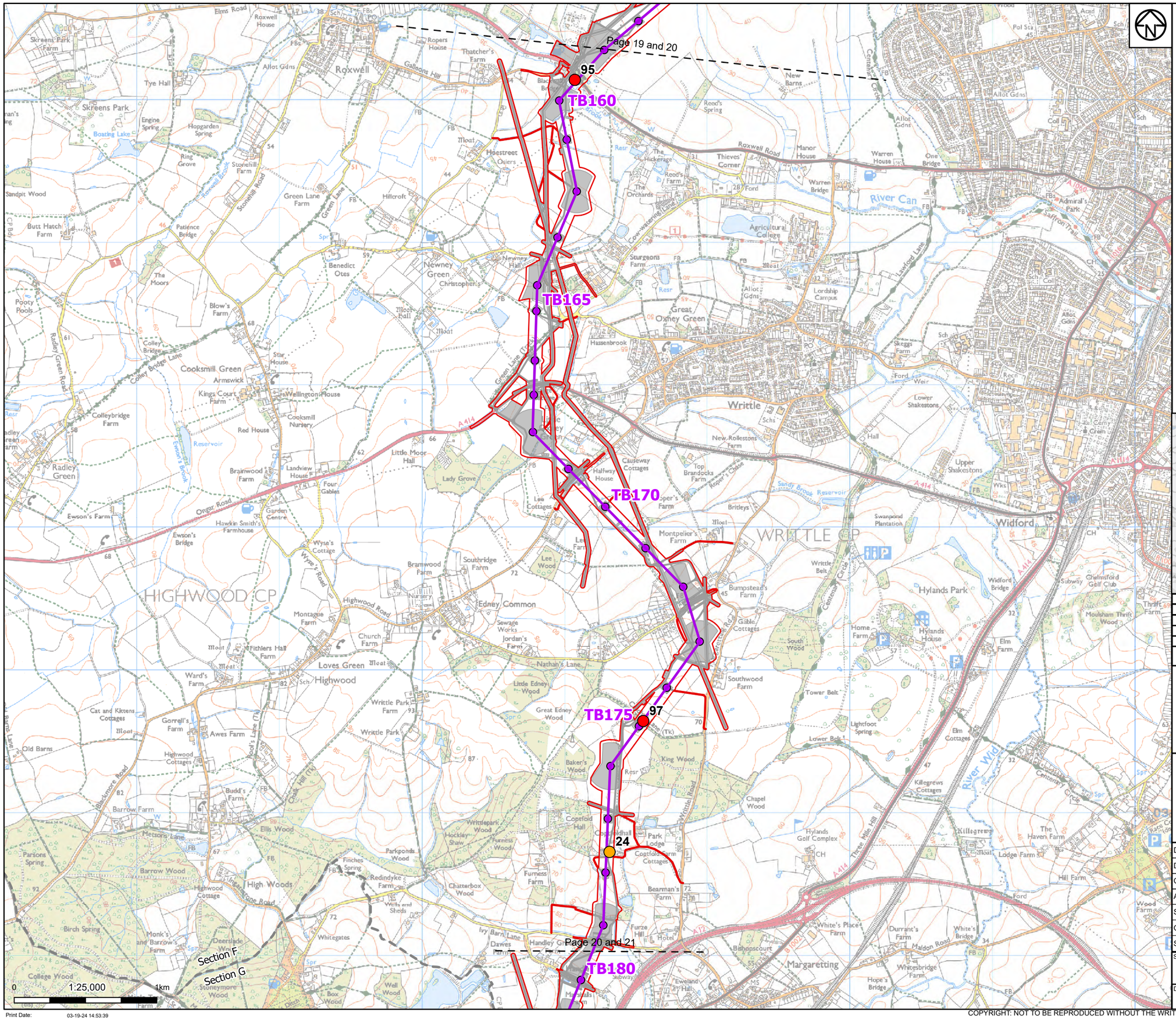
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - Medium

Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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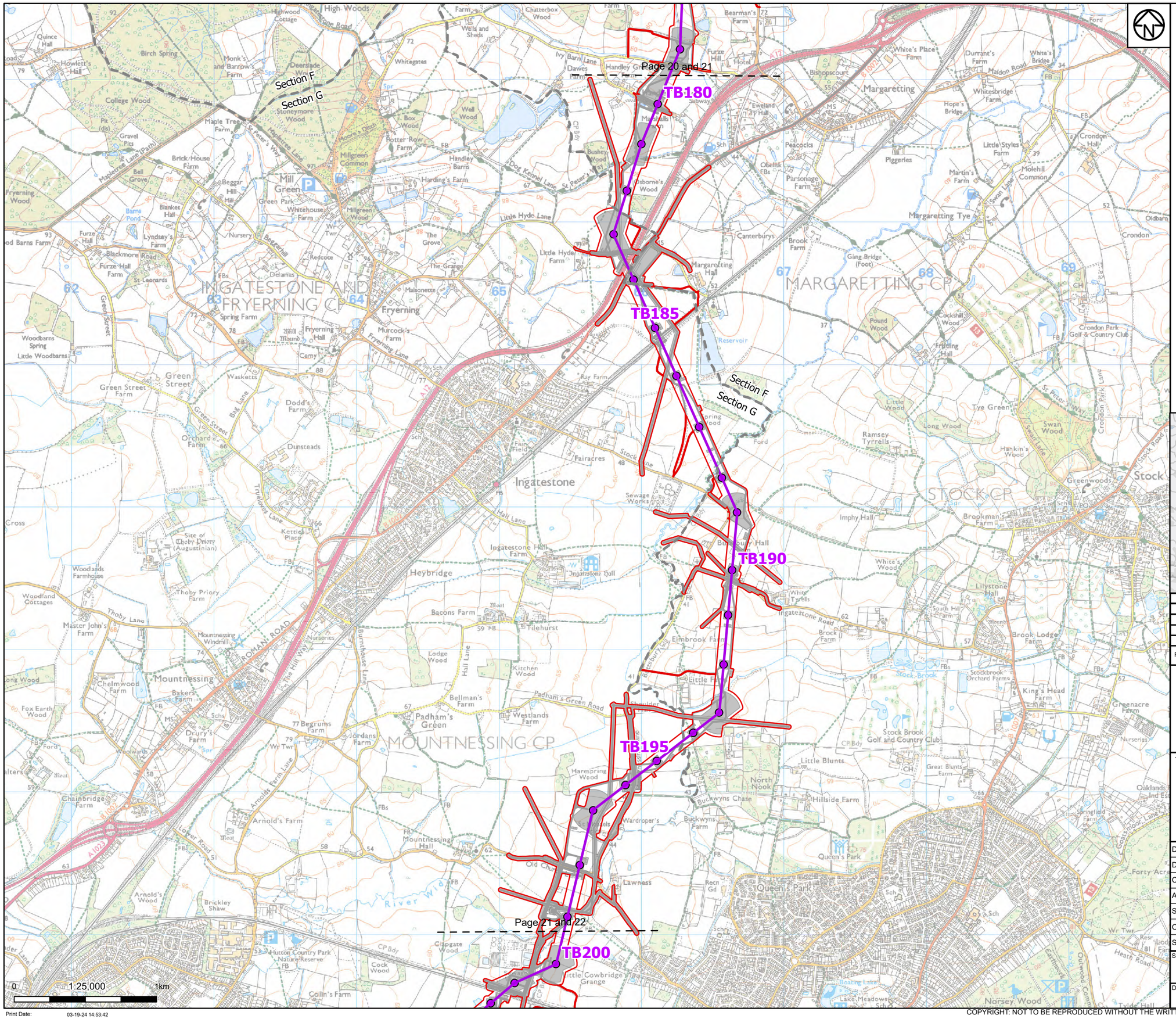
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Revision: A

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Project sections

Proposed project design details

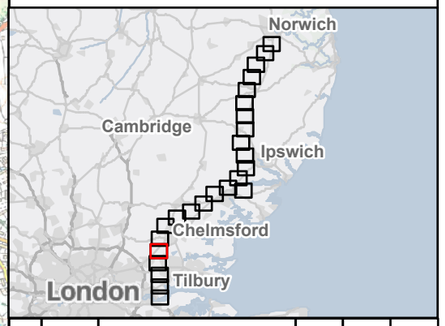
Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 21 of 25

Designed	H. Smith	Date	April 2024
Drawn	M. Shetye	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

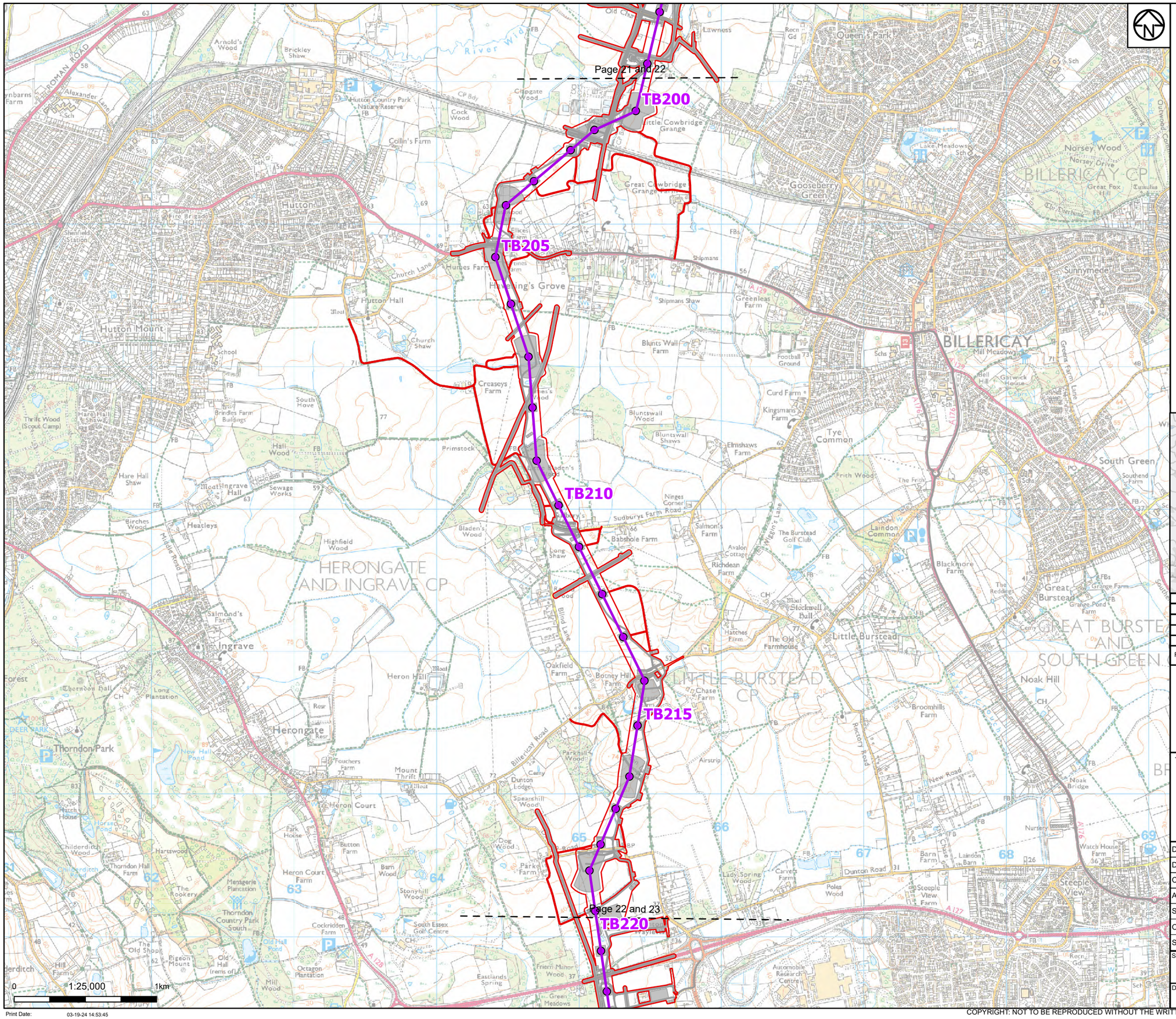
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Draft order limits

Project sections

Proposed project design details

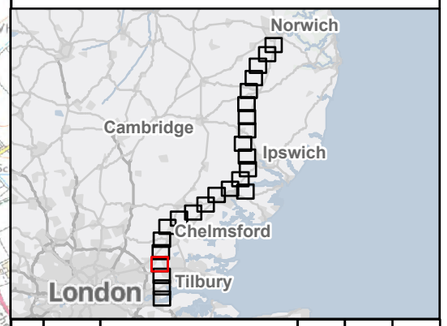
Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
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Designed	H. Smith	Date	April 2024
Drawn	M. Shetye	Date	April 2024
Checked	A. Fell	Date	April 2024
Approved	K. Burrows	Date	April 2024
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Page 22 and 23

TB220

TB225

106

Section G

Section H

TB230

TB235

TB240

Page 23 and 24

TB245

0 1:25,000 1km

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

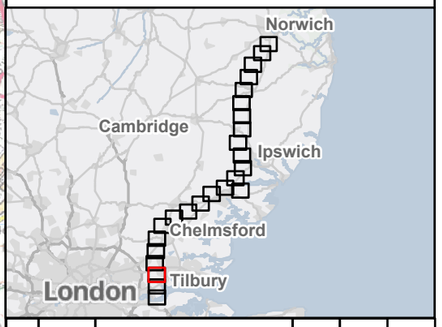
Other temporary and permanent construction and operational works

Discipline specific constraints

Risk Level - High

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Title:

Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024 Page 23 of 25

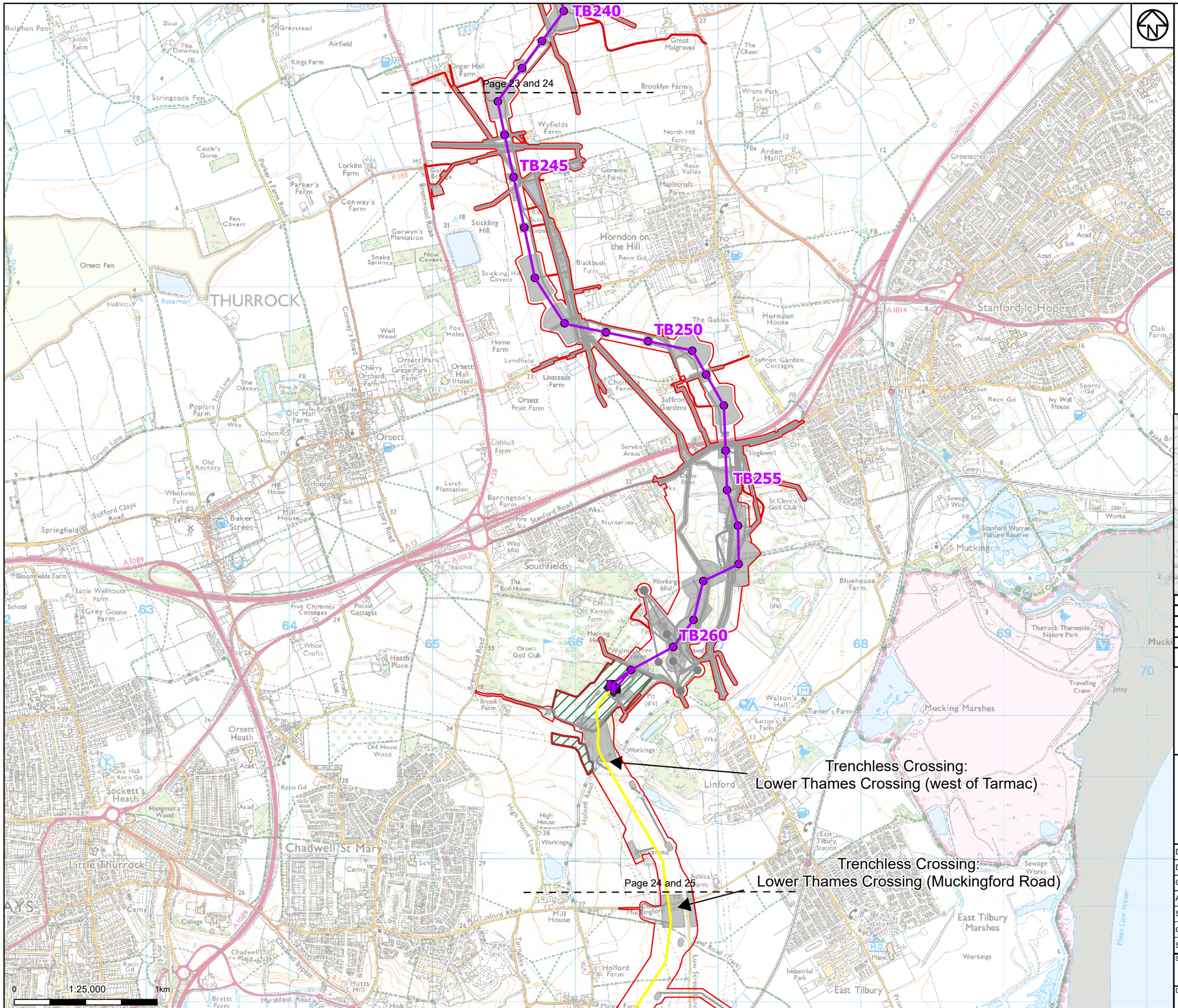
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Draft order limits

Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 24 of 25

Designed	H. Smith	Date	April 2024
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Approved	K. Burrows	Date	April 2024
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Trenchless Crossing:
Lower Thames Crossing (Muckingford Road)

Page 24 and 25

Trenchless Crossing:
Tilbury Loop Railway and existing overhead lines (NGET and DNO)

Tilbury Substation

0 1:25,000 1km

Print Date: 03-19-24 14:53:55

- Draft order limits
- Project sections

Proposed project design details

- Proposed underground cable alignment
- Existing substation
- Other temporary and permanent construction and operational works

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PROJECT:
Norwich to Tilbury

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Figure A.8.7.1 - Ecology and Biodiversity - Bats: Static Deployment 2023/2024
Page 25 of 25

Designed	H. Smith	Date	April 2024
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Annex C: Static Reference and Dates of the Static Detector Surveys.

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
80	Section A	Amber	03 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
79	Section A	Amber*	03 July 2023 (summer) 04 September 2023 (autumn) TBC May 2024 (spring)
78	Section A	Red	19 June 2023 04 July 2023 08 August 2023 04 September 2023 20 September 2023 TBC May 2024
82	Section A	Amber	17 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
77	Section A	Red	20 June 2023 03 July 2023 07 August 2023 04 September 2023 TBC May 2024
76	Section A	Amber	04 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
74	Section A	Red	20 June 2023 03 July 2023 20 September 2023 TBC May 2024 TBC August 2024
73	Section A	Amber	03 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
72	Section A	Red	21 June 2023 04 July 2023 08 August 2023 04 September 2023 TBC May 2024
87	Section A	Red	09 August 2023 20 September 2023 TBC May 2024 TBC June 2024 TBC July 2024
71	Section A	Red	19 June 2023 04 July 2023 08 August 2023 25 September 2023 TBC May 2024
70	Section A	Amber	08 August 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
88	Section A	Red	21 June 2023 04 July 2023 08 August 2023 25 September 2023 TBC May 2024
67	Section A	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
69	Section A	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
98	Section B	Red	TBC May 2024 TBC June 2024 TBC July 2024

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
			TBC August 2024 TBC September 2024
99	Section B	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
63	Section B	Red	21 June 2023 05 July 2023 09 August 2023 25 September 2023 TBC May 2024
100	Section B	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
62	Section B	Red	19 June 2023 05 July 2023 09 August 2023 05 September 2023 TBC May 2024
61	Section B	Red	21 June 2023 05 July 2023 09 August 2023 05 September 2023 TBC May 2024
60	Section B	Amber	19 September 2023 (autumn) TBC May 2024 (spring) TBC June-August 2024 (summer)
57	Section B	Amber	05 July 2023 (summer) 25 September 2023 (autumn) TBC May 2024 (spring)
101	Section B	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
56	Section B	Red	21 June 2023 05 July 2023 09 August 2023

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
			20 September 2023 TBC May 2024
55	Section B	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
102	Section B	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
51	Section B	Red	09 August 2023 04 September 2023 TBC May 2024 TBC June 2024 TBC July 2024
53	Section B	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
49	Section B	Amber	18 July 2023 (summer) 19 September 3023 (autumn) TBC May 2024 (spring)
103	Section C	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
48	Section C	Red	21 June 2023 05 July 2023 09 August 2023 04 September 2023 TBC May 2024
46	Section C	Red	21 June 2023 05 July 2023 09 August 2023 20 September 2023 TBC May 2024
21	Section C	Amber	19 July 2023 (summer)

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
			19 September 2023 (autumn) TBC May 2024 (spring)
20	Section C	Red	21 June 2023 04 July 2023 08 August 2023 20 September 2023 TBC May 2024
15	Section C	Amber	19 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
14	Section C	Red	19 June 2023 04 July 2023 08 August 2023 04 September 2023 TBC May 2024
13	Section C	Amber	19 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
12	Section C	Red	21 June 2023 05 July 2023 08 August 2023 20 September 2023 TBC May 2024
11	Section C	Amber	19 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
10	Section C	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
9	Section C	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
8	Section C	Amber	17 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
7	Section C	Amber	17 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
92	Section D	Amber	17 July 2023 (summer) 20 September 2023 (autumn) TBC May 2024 (spring)
6	Section D	Amber	17 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
4	Section D	Red	19 June 2023 04 July 2023 08 August 2023 05 September 2023 TBC May 2024
3	Section D	Amber	18 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
42	Section D	Amber	18 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
40	Section D	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
93	Section E	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
36	Section E	Red	19 June 2023 03 July 2023 07 August 2023 05 September 2023 TBC May 2024

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
35	Section E	Red	07 August 2023 19 September 2023 TBC May 2024 TBC June 2024 TBC July 2024
34	Section E	Red	21 June 2023 04 July 2023 07 August 2023 05 September 2023 TBC May 2024
94	Section E	Amber	03 July 2023 (summer) 05 September 2023 (autumn) TBC May 2024 (spring)
32	Section E	Red	20 June 2023 03 July 2023 07 August 2023 19 September 2023 TBC May 2024
105	Section E	Amber	TBC May 2024 (spring) TBC June-August 2024 (summer) TBC September 2024 (autumn)
29	Section F	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
28	Section F	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024
27	Section F	Amber	18 July 2023 (summer) 19 September 2023 (autumn) TBC May 2024 (spring)
95	Section F	Red	20 June 2023 03 July 2023

Static GIS Reference Number (see Figure A.8.7.1)	Project Section	RAG status	Static deployment date (listed as TBC if to be confirmed)
			07 August 2023 26 September 2023 TBC May 2024
97	Section F	Red	20 June 2023 09 August 2023 25 September 2023 TBC May 2024 TBC July 2024
24	Section F	Amber	25 September 2023 (autumn) TBC May 2024 (spring) TBC June – August 2024 (summer)
106	Section G	Red	TBC May 2024 TBC June 2024 TBC July 2024 TBC August 2024 TBC September 2024

Annex D: Weather Conditions of the Static Detector Surveys

Survey Visit	Date	Weather Conditions
June	19 June 2023	Rain – 0, Wind – Gentle Breeze, Cloud cover – 15 - 55%
	20 June 2023	Rain – 0, Wind – Moderate breeze, Cloud cover – 60 - 100%
	21 June 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 20 - 70%
July	03 July 2023	Rain – 0, Wind – Moderate Breeze, cover – 40 - 100%
	04 July 2023	Rain – 0, Wind – Gentle Breeze, Cloud cover – 30 to 100%
	05 July 2023	Rain – 0, Wind – Moderate Breeze, Cloud cover – 40 to 100%
	17 July 2023	Rain – 0, Wind – Moderate Breeze, Cloud cover – 30 - 80%
	18 July 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 85 - 100%
	19 July 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 90 - 100%
	20 July 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 90 - 100%
August	07 August 2023	Rain – 0, Wind – Moderate Breeze, Cloud cover – 20 - 80%
	08 August 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 20 - 100%
	09 August 2023	Rain – 0, Wind – Gentle Breeze, Cloud cover – 5 - 80%
September	04 September 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 0%
	05 September 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 0%
	06 September 2023	Rain – 0, Wind – Light Breeze, Cloud cover – 0%
	19 September 2023	Rain – 0, Wind – Fresh Breeze, Cloud cover – 100%
	20 September 2023	Rain – 0, Wind – Strong Breeze, Cloud cover – 50 - 100%
	25 September 2023	Rain – 0, Wind – Gentle Breeze, Cloud cover – 10 – 40%

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Appendix 8.8: Hazel Dormouse Report

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Norwich to Tilbury

Preliminary Environmental Information Report - Volume III

Appendix 8.8: Dormouse Report

April 2024

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Annex A: Figures

1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of the National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council (including part of Chelmsford City Council)
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description of the PEIR within Volume I.

1.2 Ecological Background

1.2.1 The East Anglia Green Energy Enablement (Green): Environmental Impact Assessment (EIA) Scoping Report (National Grid, 2022) identified the requirement for hazel dormouse (*Muscardinus avellanarius*), hereafter referred to as 'dormouse' surveys to inform the baseline for the ecological impact assessment.

1.2.2 Woodland and hedgerows which could provide suitable habitat for dormouse are located within the draft Order Limits. The general approach to impact assessment for dormouse is to ensure that effects to dormouse are avoided, where possible, minimised and/or mitigation provided to maintain the favourable conservation status of dormouse that utilise the habitats across the Project. The Project approach aims to provide replacement and/or areas of better-quality habitat than that affected by the Project and ensure that these habitats are well connected to the wider landscape. This would be achieved by avoiding permanent effects to habitats of perceived value to dormouse,

reinstating habitats affected by temporary habitat loss to equal or better condition than existing and improving the quality and availability of ecological networks across the Project.

1.2.3 To minimise potential effects on dormouse, nesting tube surveys are being undertaken to confirm the presence or absence of dormouse in areas of suitable habitat which could be affected by the Project. This report details this approach to surveying for dormouse.

1.3 Brief and Objectives

1.3.1 The aim of the survey work is to obtain a baseline data for the Project. This would be achieved by undertaking the following:

- A detailed desk study
- Field surveys to establish the presence/ likely absence of dormouse
- Characterise the value of the habitat within the draft Order Limits for dormouse

1.3.2 The objectives of the study were to:

- Assess the importance of the draft Order Limits for dormouse
- Outline requirements for further survey work to inform detailed mitigation design and any European Protected Species licence applications (should they be required)

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided in Table A8.8.1.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.8.1) has been considered with regards to the methodology included within this report.

Table A8.8.1 - Legal Compliance

Legislation	Details
Conservation of Habitats and Species Regulations 2017, as amended ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for either habitats or species (Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)) and to provide protection for these sites through designation, planning, and other controls. The Regulations make it an offence (subject to exceptions) to deliberately kill, injure, disturb, or capture, trade in the animals such as dormouse listed in Schedule 2. It is also an offence to damage or destroy their breeding sites and resting places, and possess, control, transport them (alive or dead). However, these actions can be made lawful through the granting of licences by the appropriate authorities (Natural England in England). Licences may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the species concerned.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	It is also an offence under the WCA to intentionally or recklessly: - Disturb dormouse while they occupy a structure or place used for shelter or protection - Obstruct access to a place of shelter or protection
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	The NERC Act 2006 places a duty upon public bodies to maintain Section 41 (S41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions. Dormouse is listed in S41 and as such identified as species of principal importance.

Legislation	Details
The Environment Act 2021 (HMSO, 2021a)	In line with the 25 Year Plan for the Environment (HM Government, 2018), new development should identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Act 2021 introduces a mandatory requirement for 10% biodiversity net gain for new developments to ensure that they enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, however there are options to deliver these gains offsite and this would be demonstrated via the Statutory Biodiversity Metric calculation tool.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides further details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Desk Study

3.1.1 A desk study was conducted in September 2023 and subsequently January 2024 following a design change. The study identified records for dormouse within the draft Order Limits and a search area extending 2 km from the draft Order Limits, over the past 10 years in accordance with standard practice. Records were obtained from the Local Environmental Record Centres (LERCs):

- Norfolk Biodiversity Information Service (NBIS)
- Suffolk Biodiversity Information Service (SBIS)
- Essex Field Club (EFC)

3.1.2 Local record centres also provided the locations on non-statutory County Wildlife Sites (CWS) and Local Wildlife Sites (LWS). These sites were reviewed for any mention of dormouse within their citation.

3.1.3 A search for statutory designated sites with 2 km of the draft Order Limits was conducted using Multi-Agency Geographic Information for the Countryside (MAGIC) maps. These included Sites of Special Scientific Interest (SSSI), SPA, SAC and Ramsar sites. These sites were reviewed for any mention of dormouse within their citation.

3.2 Survey Methodology

3.2.1 The survey methodology followed Natural England's standing advice which refers to the Dormouse Conservation Handbook (English Nature, 2006). To determine presence or likely absence of dormouse, a minimum of 50 nest tubes must be placed in a site (equivalent to one of the survey areas identified for this Project) within suitable habitat between the months of April and October (and up to November dependant on geographical location).

3.2.2 Suitable habitat usually consists of species-rich hedgerows or broad-leaved woodland (Wembridge *et al.,* 2016). Dormouse has a strong preference for woodland which includes coppiced hazel (*Corylus avellana*), a species often found in woodlands designated as Ancient Woodland.

3.2.3 Hedgerows were sampled by placing nest tubes at 15 to 25 m intervals, while in woodland the tubes were placed to incorporate both edge and central areas, where the understory provided suitable vegetation for their placement (horizontal branches around 150 cm above ground level).

3.2.4 Tubes were then checked every 4 to 6 weeks. Checking tubes involved a quiet and careful approach to seal the entrance with a cloth. The insert was then carefully removed to check for the presence of an animal or of nesting materials. Alternatively, a mirror was used to visually inspect the inside of the tube. Dormouse nests have a characteristic structure which is tightly woven with a closed domed roof and an entrance hole, with fresh (green) surrounding leaves.

3.2.5 Using aerial imagery, 26 discrete survey areas were identified based on their habitat type and connectivity to locations with dormouse records. These survey locations are shown on Figure A8.8.**1**: Dormouse Desk Study Records and Survey Locations, in Annex A. Survey area 8 has been removed as a survey location due to changes in the draft Order Limits.

3.3 Dates of Survey and Personnel

3.3.1 Lead surveyors hold a Natural England licence allowing the disturbance of dormouse during surveys. Table A8.8.2 shows the dates of 2023 survey visits. Sites not surveyed in 2023 will be surveyed in the 2024 survey season. Surveys will be curtailed in a location as soon as a positive result has been established.

Table A8.8.2 - Survey Dates

Dormouse Area	Installation	Survey Visits
1	13/05/2023	03/08/2023, 06/09/2023, 24/10/2023, 23/11/2023
4	17/05/2023	29/06/2023, 08/09/2023, 06/10/2023, 27/11/2023
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12	14/06/2023	26/07/2023, 06/09/2023, 16/10/2023, 23/11/2023
14	25/05/2023	06/07/2023, 18/08/2023, 29/09/2023, 21/11/2023
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23	25/05/2023	06/07/2023, 08/09/2023, 29/09/2023, 24/11/2023

3.4 Notes and Limitations

3.4.1 All the tubes were installed for a long enough time period to meet the required 20-point threshold as outlined in the Dormouse Conservation Handbook (English Nature, 2006).

4. Results

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4. Results

4.1 Overview

4.1.1 Dormouse has strong associations with Ancient Woodlands and hedgerows of longstanding that provide links between these woodlands. Dormouse may occasionally be found in sub-optimal habitats particularly when the young are dispersing seeking to establish new territories. They live at very low densities; they hibernate in winter and go into periods of torpor when food is scarce, or weather conditions are poor. It is for this reason that surveys must be undertaken during the full survey season to be confident of a negative result.

4.1.2 Once a positive result is established in a location, the survey may be curtailed on the basis that dormouse has the potential to occupy all suitable habitat that is linked to this location.

4.1.3 The dormouse presence and absence surveys, as discussed within Section 3 above were undertaken between May and November 2023, with remaining areas to be surveyed in 2024. Desk study results are presented on Figure A8.8.1: Dormouse Desk Study Records and Survey Locations in Annex A. Further survey results obtained beyond November 2023 will be reported within the ES.

4.2 Desk Study Results

Statutory Designated Sites

4.2.1 Twenty-four SSSI, one Ramsar site, one SAC and one SPA are situated within 2 km of the draft Order Limits; as illustrated in Figure 8.1: Statutory Sites Designated for Biodiversity in Volume II. None of these sites include dormouse within their citation.

Non-Statutory Designated Sites

4.2.2 The desk study returned the locations of CWS and LWS with 2 km of the draft Order Limits, CWS were received from NBIS and SBIS whereas LWS were only received from EFC. The locations of these are illustrated in Figure 8.2: Non-Statutory Sites Designated for Biodiversity in Volume II.

4.2.3 Figure A8.8.1: Dormouse Desk Study Records and Survey Locations in Annex A shows the location of the four CWS which are in the southern part of Suffolk, and two LWS which are located Essex which have dormouse within their citation. None of the CWS in Norfolk have been identified as supporting dormouse. The details of these records can be found in Table A8.8.3.

Table A8.8.3 - CWS and LWS with Dormouse in the Citation

Site Name	Project Section(s)	Distance / Direction to draft Order Limits	Local Record Centre	Citation Comment
Bonny Wood CWS	Section B	0.505 km south	SBIS	The diversity within the wood provides habitat opportunities for a wide range of species, several of which are Priority species including hazel dormouse.
Bentley Long Wood CWS	Section C	1.87 km south-east	SBIS	Priority species hazel dormouse, for which Suffolk records are restricted to the Stour Valley in the south of the county, is also recorded here.
Hadleigh Railway Walk CWS	Section C	0.27 km north-west	SBIS	Dormouse has also been recorded in association with this part of the line, as the Ancient Woodland coppice structure that this species requires remains on the embankments.
Raydon Great Wood CWS	Section C	0.134 km west	SBIS	Dormouse, for which Suffolk records are restricted to the south of the county, is also recorded here.
Hylands Park LWS	Section F	0.334 km south-east	EFC	Two important protected species recorded from Hylands Park are great crested newt (*Triturus cristatus*), found to inhabit most of the parks, ponds, and dormouse, which is thought to be sustaining a strong population due to the quality, diversity, and extent of the habitat.
Swan Wood LWS	Section F	1.97 km east	EFC	Both the ancient and recent woodland components of this site are home to the dormouse, a European Protected Species, and a species of very restricted distribution in Chelmsford.

Species Records

4.2.4 The locations of the records for dormouse are illustrated in Figure A8.8.1: Dormouse Desk Study Records and Survey Locations in Annex A.

4.2.5 The desk study returned 28 records of dormouse within 2 km of the draft Order Limits, all of which were recorded in the southern part of Suffolk. No records were found in

Norfolk or Essex within the 2 km search area. No records of dormouse were reported within the draft Order Limits.

4.2.6 Twenty three of the 28 records were recorded within woodland habitats, with one within cropland directly adjacent to woodland. Four records were found in both arable fields and urban gardens, directly adjacent to hedgerows.

4.3 Survey Results

4.3.1 The desk study revealed that dormouse is absent from Norfolk and a large part of Suffolk, with all records being associated with the southern half of Suffolk and the non-statutory sites in Essex. where dormouse was mentioned in the citation. This information was used to identify the 26 survey locations.

4.3.2 Out of the 12 locations that were surveyed in 2023, evidence of dormouse was observed at survey location 20 in Bushey Wood, west of Margaretting, Essex. In this area two dormouse nests were recorded during the November 2023 survey. No evidence of dormouse was observed at the other 11 survey locations, a confident negative result can be concluded from these sites.

4.3.3 Surveys will commence again in April 2024 at the remaining 14 locations which were not subject to surveys in 2023. All results will be reported within the ES.

4.4 Incidental Records

4.4.1 In addition to the dormouse survey results, there has been one incidental record of a possible dormouse nest, found on 11 November 2023. The record was located within King Wood within survey location 18, southeast of Chelmsford, its location is illustrated on Figure A8.8.1: Dormouse Desk Study Records and Survey Locations in Annex A. This survey location will be surveyed with nest tubes in 2024.

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Annex A: Figures

Figure A8.8.1: Dormouse Desk Study Records and Survey Locations.

Pages

Note: This figure has been revised. This does not affect the preliminary assessment in the PEIR. For more details we refer you to the Errata and Corrections Log (June 2024) on the Project website

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Overview

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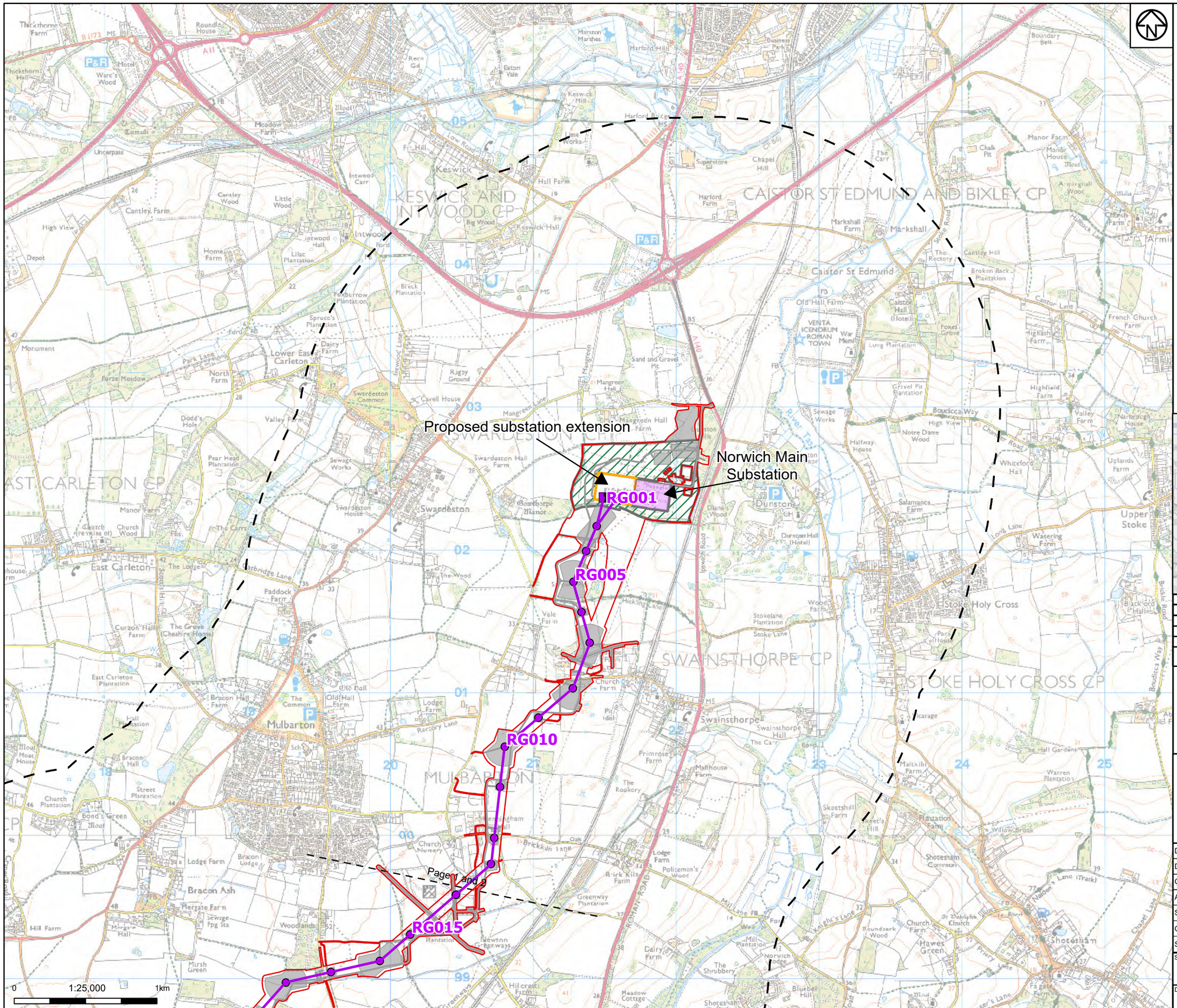
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
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Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 1 of 31

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RG020

RG025

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Page 1 and 2

Page 2 and 3

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Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

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Norwich to Tilbury

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Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
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Page 2 and 3

Page 3 and 4

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Project sections

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Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

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Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 3 of 31

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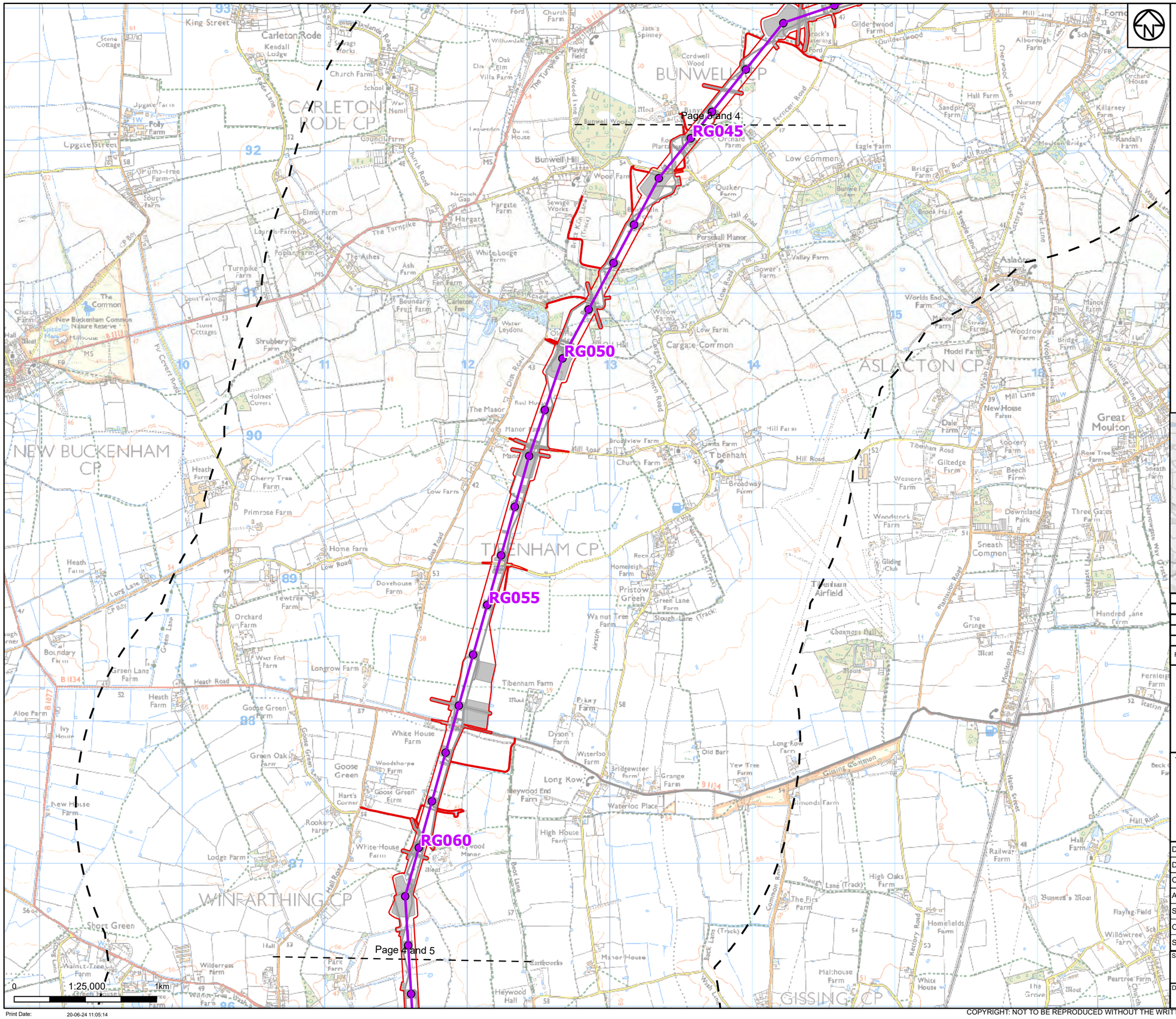
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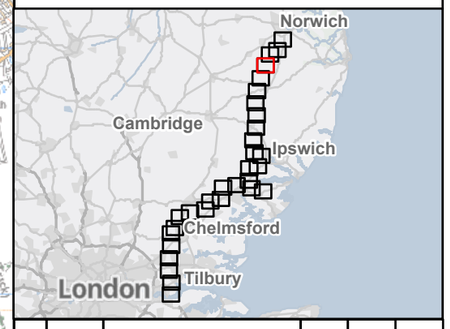
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Discipline specific constraints

2km Study Area

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Norwich to Tilbury

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Page 4 of 31

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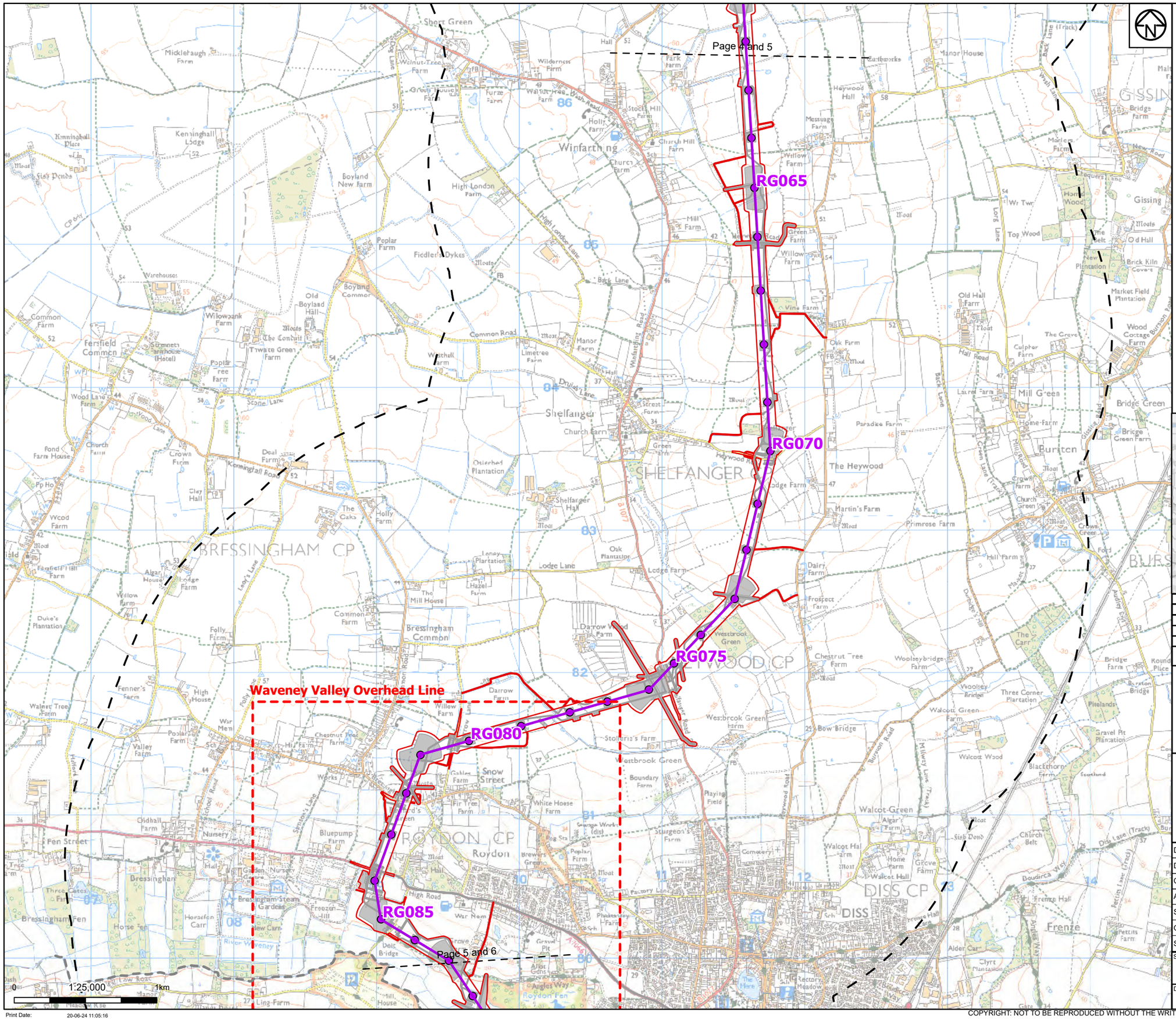
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Page 4 and 5
RG065
RG070
RG075
RG080
RG085
Waveney Valley Overhead Line
Page 5 and 6
Winfarthing
Shelfanger
SHELFANGER CP
BRESSINGHAM CP
ROYDON CP
DISS CP
Roydon
DISS
Bressingham
Burston
Gissing
Mill Green
Bridge Green
Frenze
Short Green
Kenninghall
Boyland Common
Common Road
Drulard's Lane
Lodge Lane
Church Lane
Snow Street
Fen Street
Wood Lane
Stone Lane
Kenninghall Road
Back Lane
Lord's Lane
Lovers Lane
Bressingham Common
Bressingham Fen
Roydon Fen
Walcot Green
Westbrook Green
Boyland New Farm
High London Farm
Poplar Farm
Fiddlers Dykes
Old Boyland Hall
Wilowbank Farm
Ferrsfield Common
Limetree Farm
Manor Farm
Oak Farm
Vine Farm
Willow Farm
Green Farm
Mill Farm
Church Farm
Holly Farm
Stock Hill Farm
Walnut Tree Farm
Wildernese Farm
Park Farm
Heywood Hall
Manor House
Earthworks
Messuage Farm
Old Hall Farm
Culpher Farm
Laurel Farm
Paradise Farm
The Heywood
Martin's Farm
Primrose Farm
Dairy Farm
Frescent Farm
Chestrut Tree Farm
Woolseybridge Farm
Three Corner Plantation
Walcott Green Farm
Walcot Wood
Blackthorn Farm
Gravel Pit Plantation
Pitelands
Bow Bridge
Burston Bridge
Bridge Farm
Home Farm
Grove Farm
Walcot Hall
Algar's Farm
Sturgeon's Farm
Playing Field
Boundary Farm
Stollaria's Farm
Westbrook Green
Snow Street
Gables Farm
Fir Tree Farm
White House Farm
Bluepump Farm
Poplar Farm
Oldhall Farm
Nursery
Valley Farm
Fenner's Farm
Walnut Tree Farm
High House
Darrow Farm
Darrow Wood Farm
Willow Farm
Chestnut Tree Farm
Oak Plantation
Laney Plantation
Hazel Farm
The Mill House
Common Farm
Folly Farm
Duke's Plantation
Algar House
Lodge Farm
Willow Farm
Ferrsfield Hall Farm
Crown Farm
Clay Hall
Church Farm
Fond Farm House
Pp Ho
Wood Farm
Deal Farm
Ostierbed Plantation
Shelfanger Hall
The Oaks
Holly Farm
Oak Plantation
Lodge Farm
Dairy Farm
Frescent Farm
Westbrook Green

RG070

RG075

RG080

Waveney Valley Alternative

RG85

Trenchless Crossing:
Waveney Valley Alternative
(north channel)

Trenchless Crossing:
Waveney Valley Alternative
(south channel)

RG90

RG095

Section A

Section B

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- Proposed low duty gantry
- Proposed lattice pylons
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area

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Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
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RG085

Page 5 and 6

RG090

Section A

Section B

Waveney Valley Overhead Line

RG095

RG100

RG105

RG110

Page 6 and 7

25

REDGRAVE CP

WORTHAM CP

PALGRAVE CP

BOTESDALE CP

BURGATE CP

MELLIS CP

YAXLEY CP

THRANDESTON CP

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Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Dormouse survey locations

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Page 6 of 31

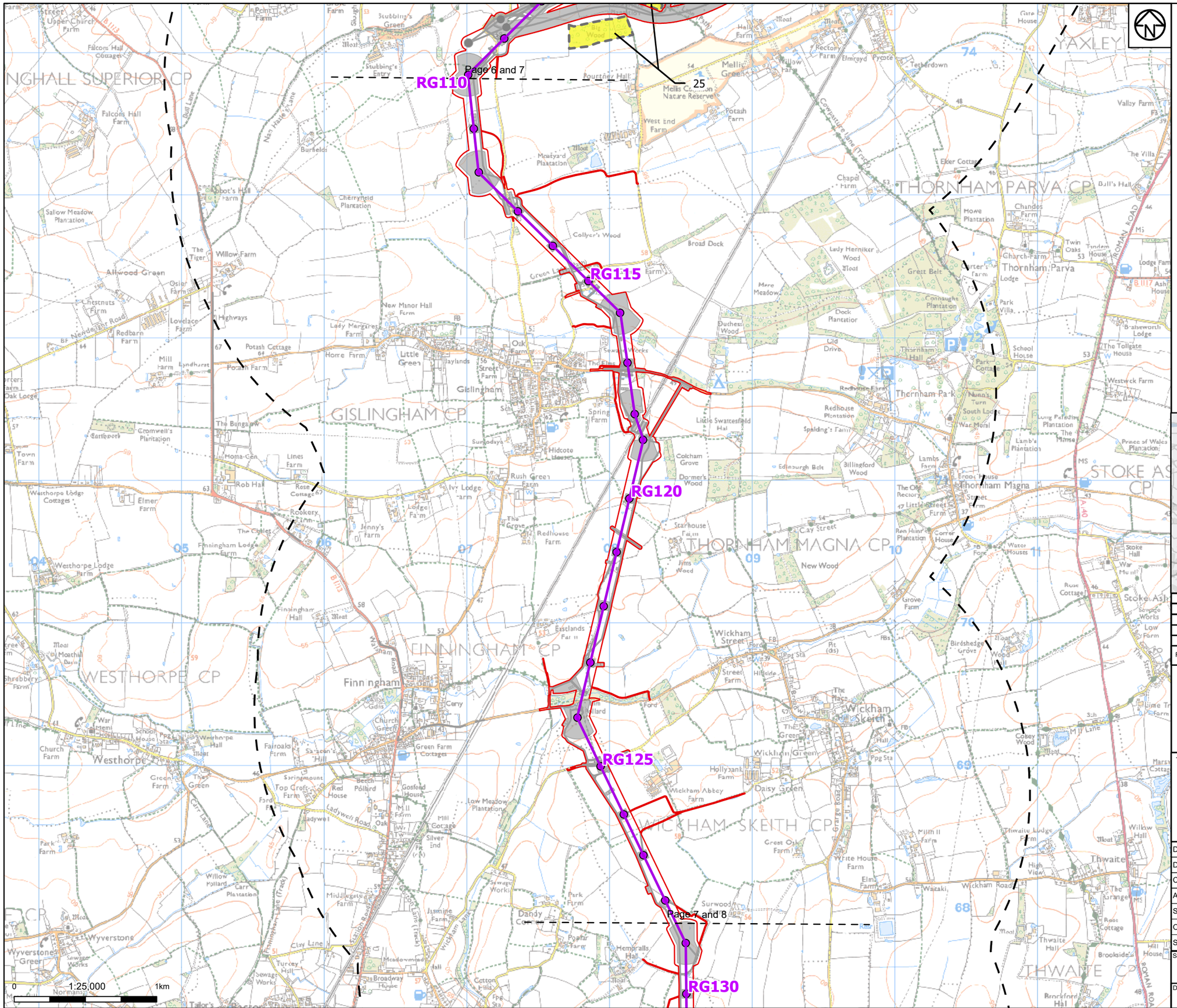
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Project sections

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Proposed overhead line alignment

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Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 7 of 31

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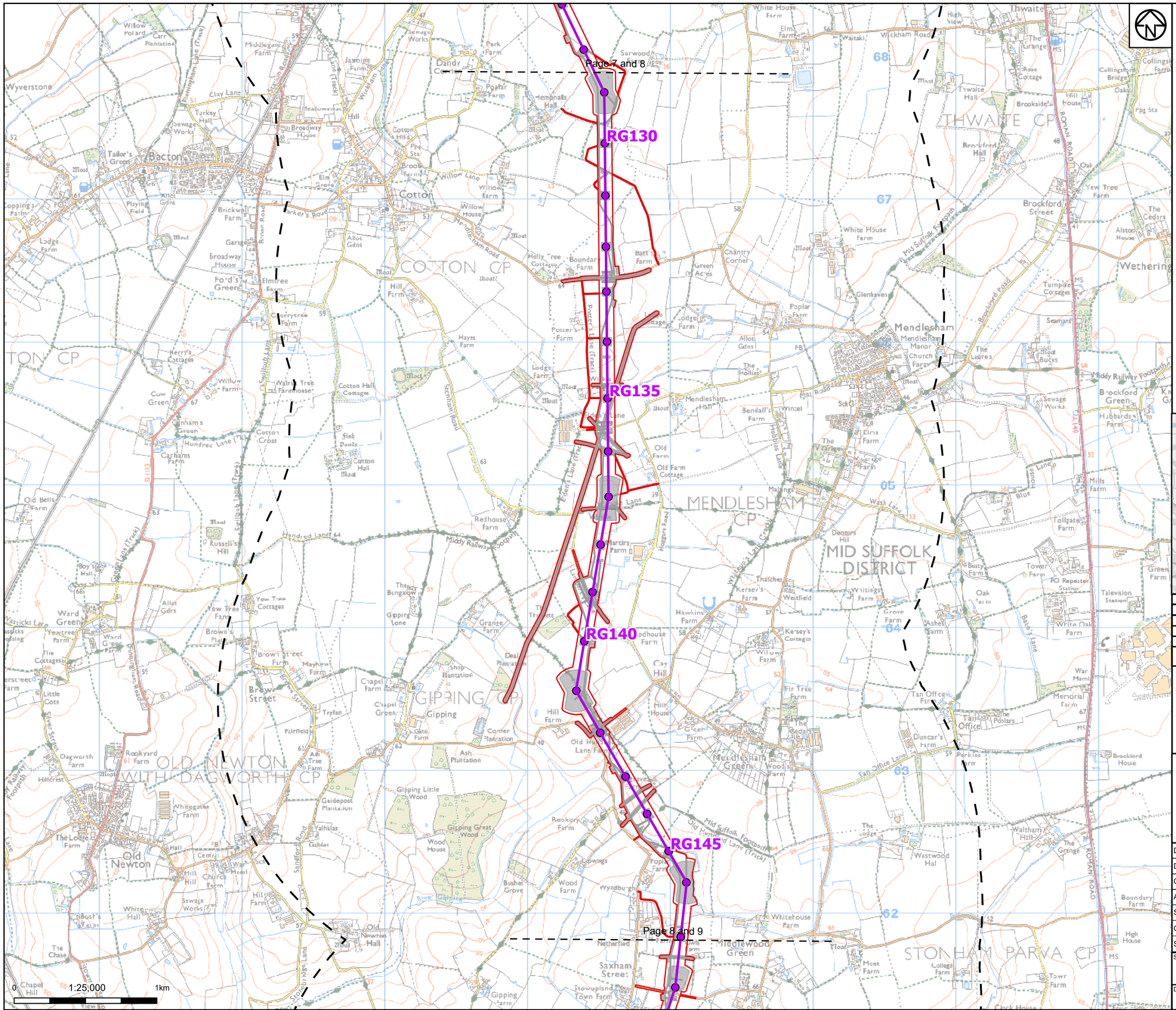
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Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

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Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations

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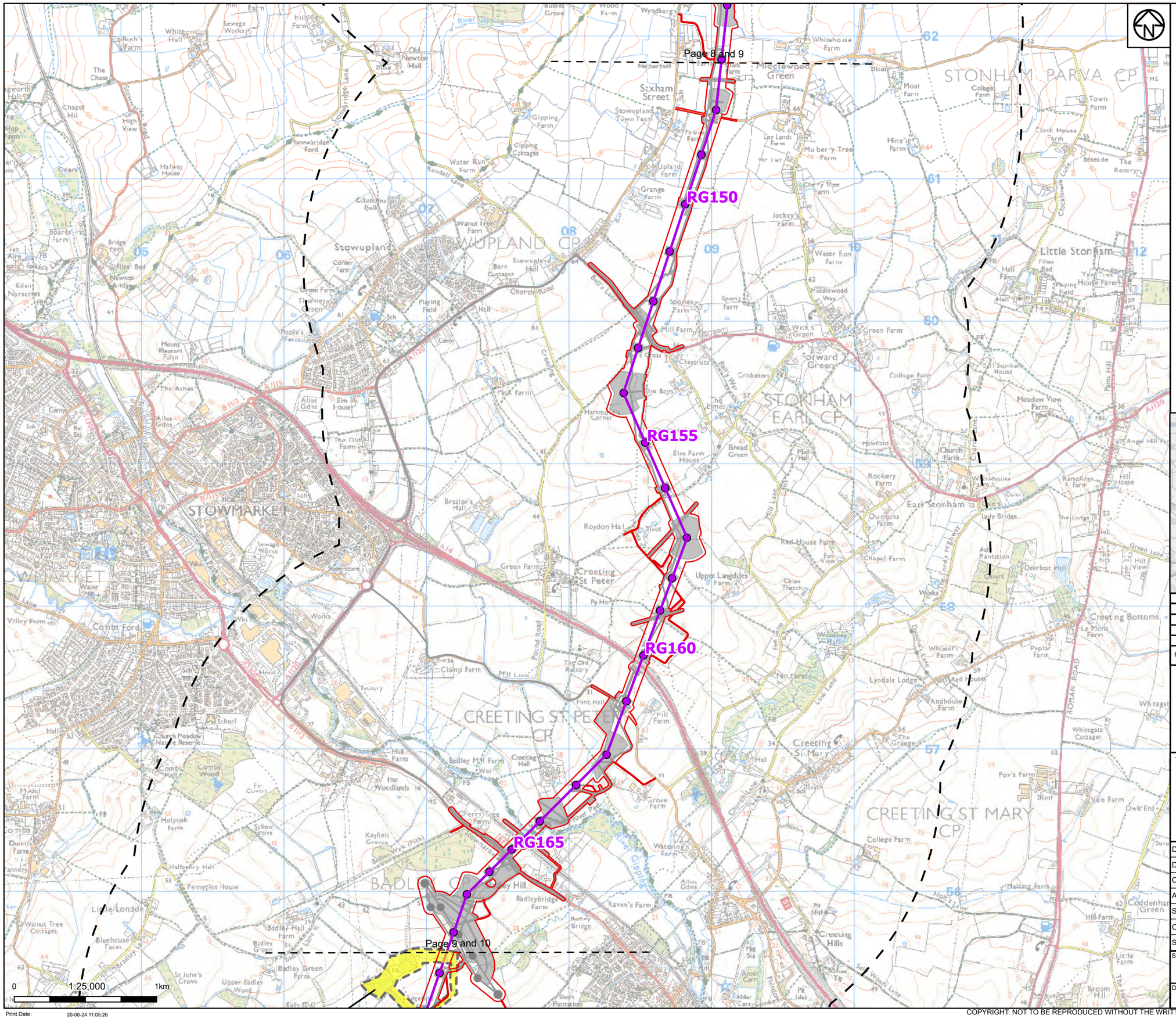
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Dormouse survey locations

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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B	June 2024	FOR STATUTORY CONSULTATION	KF	AF	KB
A	April 2024	FOR STATUTORY CONSULTATION	IS	AF	KB

nationalgrid

PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 9 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

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Page 9 and 10

RG170

RG175

RG180

RG185

RG190

1

2

3

Page 10 and 11

Bonny Wood

0 1:25,000 1km

Print Date: 20-06-24 11:05:29

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Dormouse desk study records

Dormouse survey locations

Survey location 8 has been descoped as it is no longer impacted by the draft order limits

Non-Statutory Sites

Country Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Page 10 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
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Scale:	1:25,000	Datum:	AOD
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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

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RG190
RG195
RG200
RG205
RG210
JC001
JC005
JC010
JC015
3
4
5
26
Page 10 and 11
Page 11 and 12
Bramford Substation
Proposed substation extension
NETTLESTEAD CP
SOMERSHAM CP
ELMSETT CP
FLOWTON CP
BURSTALL CP
ALDHAM CP
HINTLESHAM CP
LITTLE BLAKENHAM
BRAMFORD
0 1:25,000 1km

Print Date: 20-06-24 11:05:31

- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed low duty gantry
- Proposed pylon position
- Existing substation
- Proposed substation extension
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- 2km Study Area
- Dormouse survey locations

Survey location 8 has been descoped as it is no longer impacted by the draft order limits

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Page 11 of 31

Designed	E. Pickering	Date	June 2024
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Original Size:	A3	Grid:	OS
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Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

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RG195
RG200
RG205
RG210
JC001
JC005
JC010
JC015
JC020
Bramford Substation
Proposed substation extension
Section B
Section C
Page 11 and 12
Page 12 and 13
4
5
6
SOMERSHAM
FLOWTON CP
BRAMFORD CP
WHITTON
HINTLESHAM CP
CHATTISHAM CP
SPROUGHTON CP
PINEWOOD CP
Flowton
Bramford
Whitton
Hintlesham
Chattisham
Sproughton
Westbourne
Copdock
Washbrook
Burstall
Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London

0 1:25,000 1km

Print Date: 20-06-24 11:05:34

- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed low duty gantry
- Proposed pylon position
- Existing substation
- Proposed substation extension
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- 2km Study Area
- Dormouse desk study records
- Dormouse survey locations

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Page 12 of 31

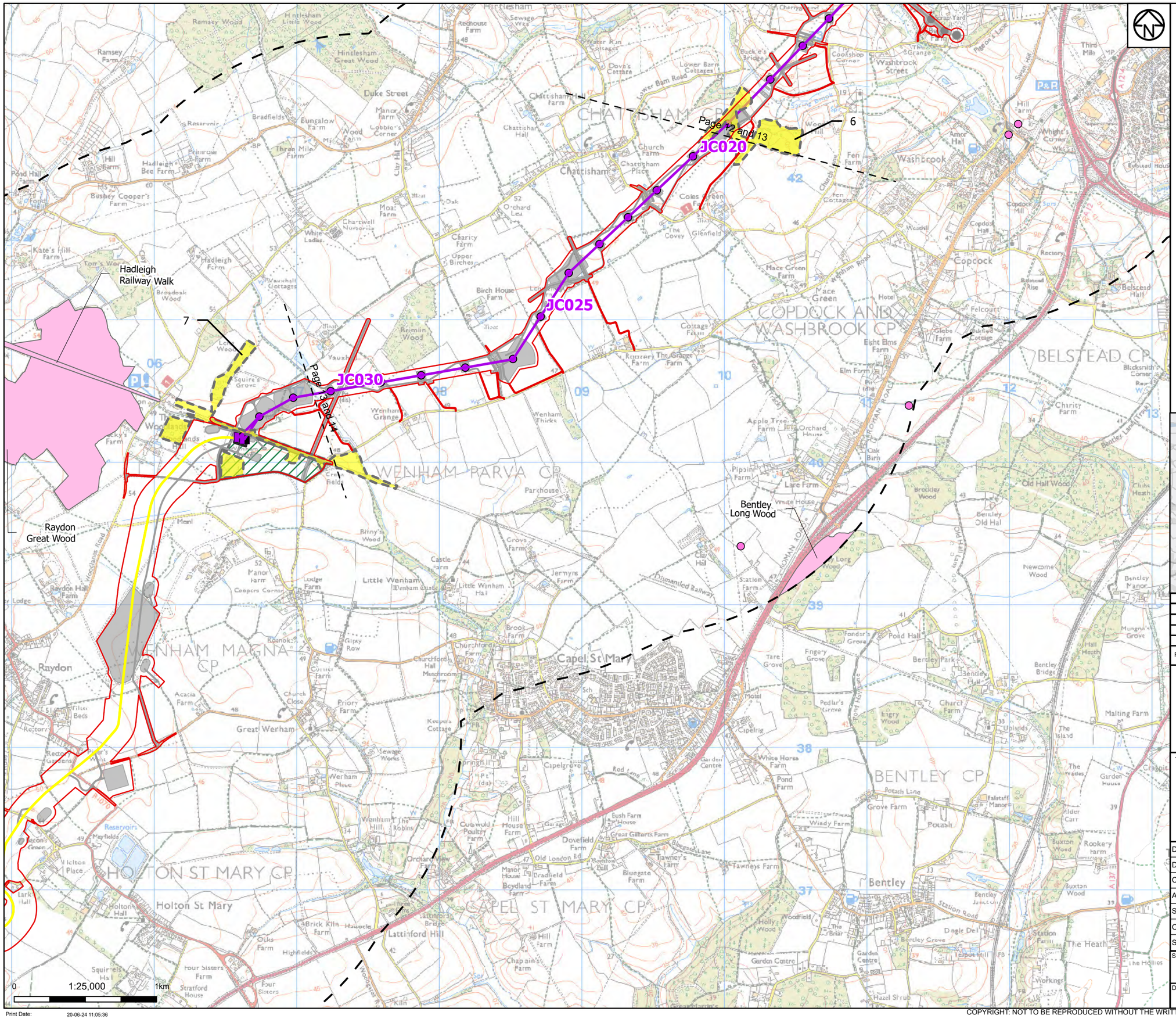
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Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

Revision: B

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Dormouse desk study records

Dormouse survey locations

Non-Statutory Sites

Country Wildlife Sites

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Page 13 of 31

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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Hadleigh Railway Walk

Raydon Great Wood

JC025

JC030

7

9

Page 13 and 14

Page 14 and 15

Trenchless Crossing:

0 1:25,000 1km

Print Date: 20-06-24 11:05:39

- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- 2km Study Area
- Dormouse survey locations

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Non-Statutory Sites

- Country Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 14 of 31

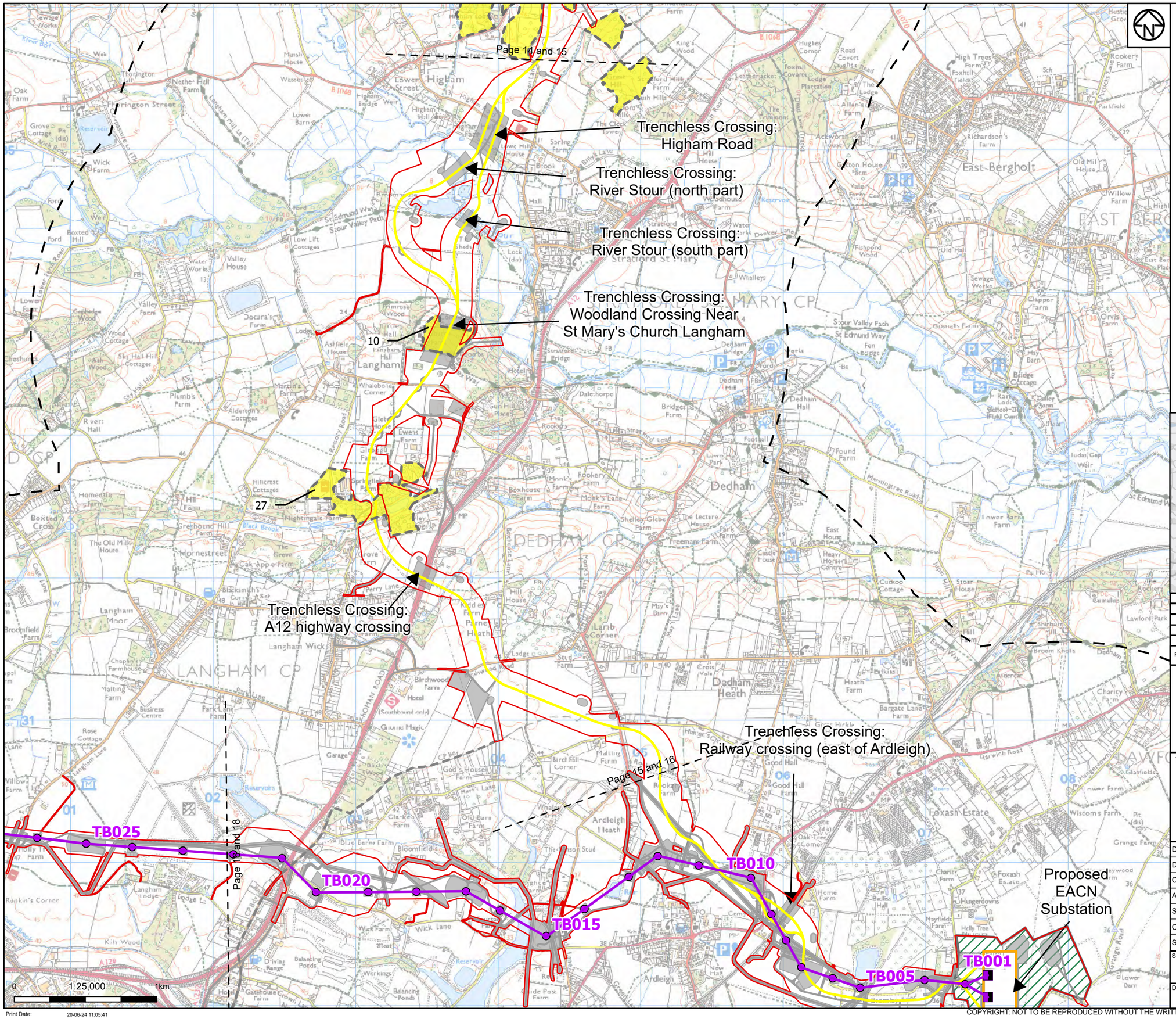
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

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Draft order limits

Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed EACN substation
- Other temporary and permanent construction and operational works
- Proposed environmental areas

Discipline specific constraints

- 2km Study Area
- Dormouse survey locations

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 15 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
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Approved	K. Burrows	Date	June 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

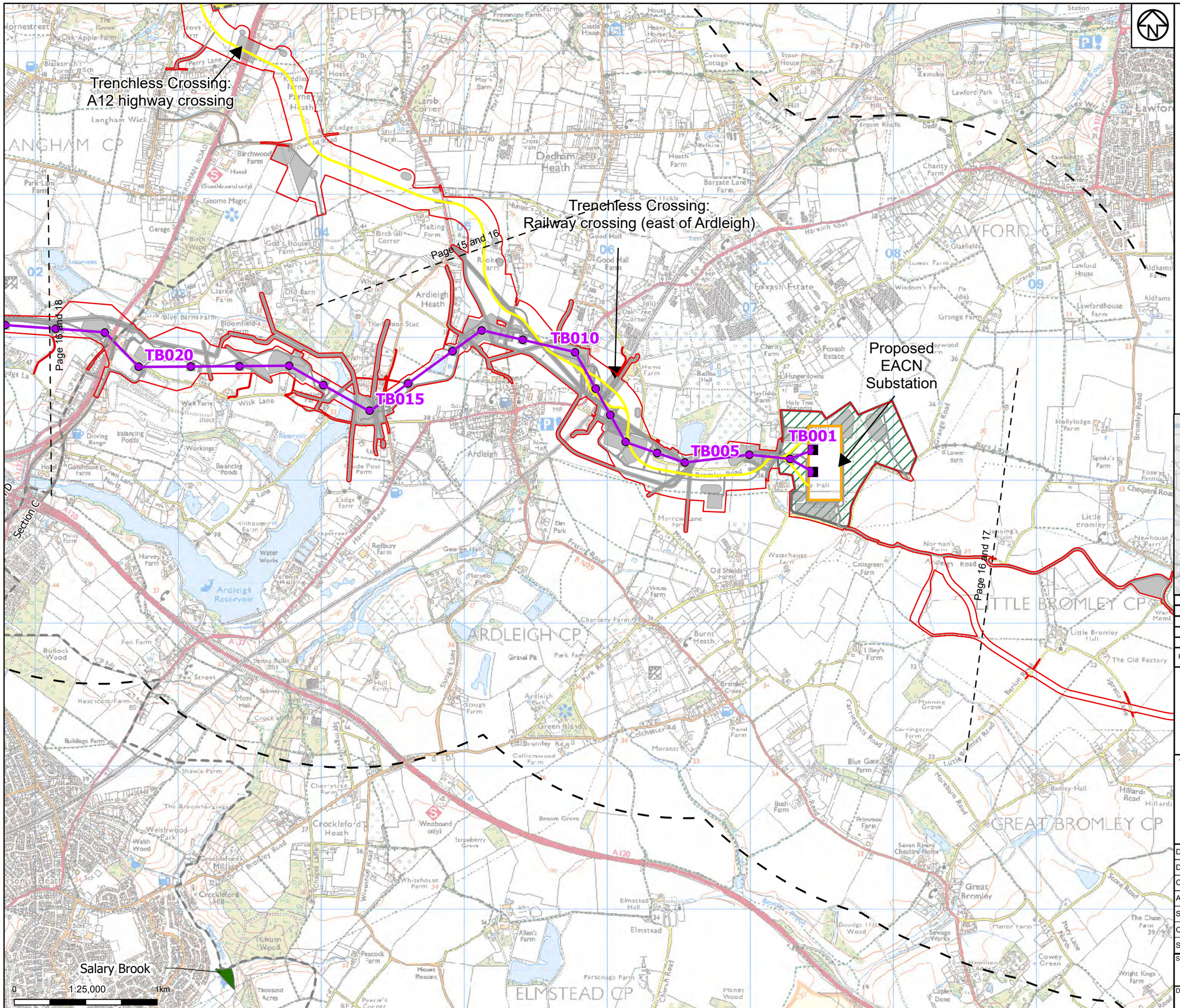
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

Revision: B

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed EACN substation
Other temporary and permanent construction and operational works
Proposed environmental areas

Discipline specific constraints

2km Study Area
Dormouse survey locations

Non-Statutory Sites

Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 16 of 31

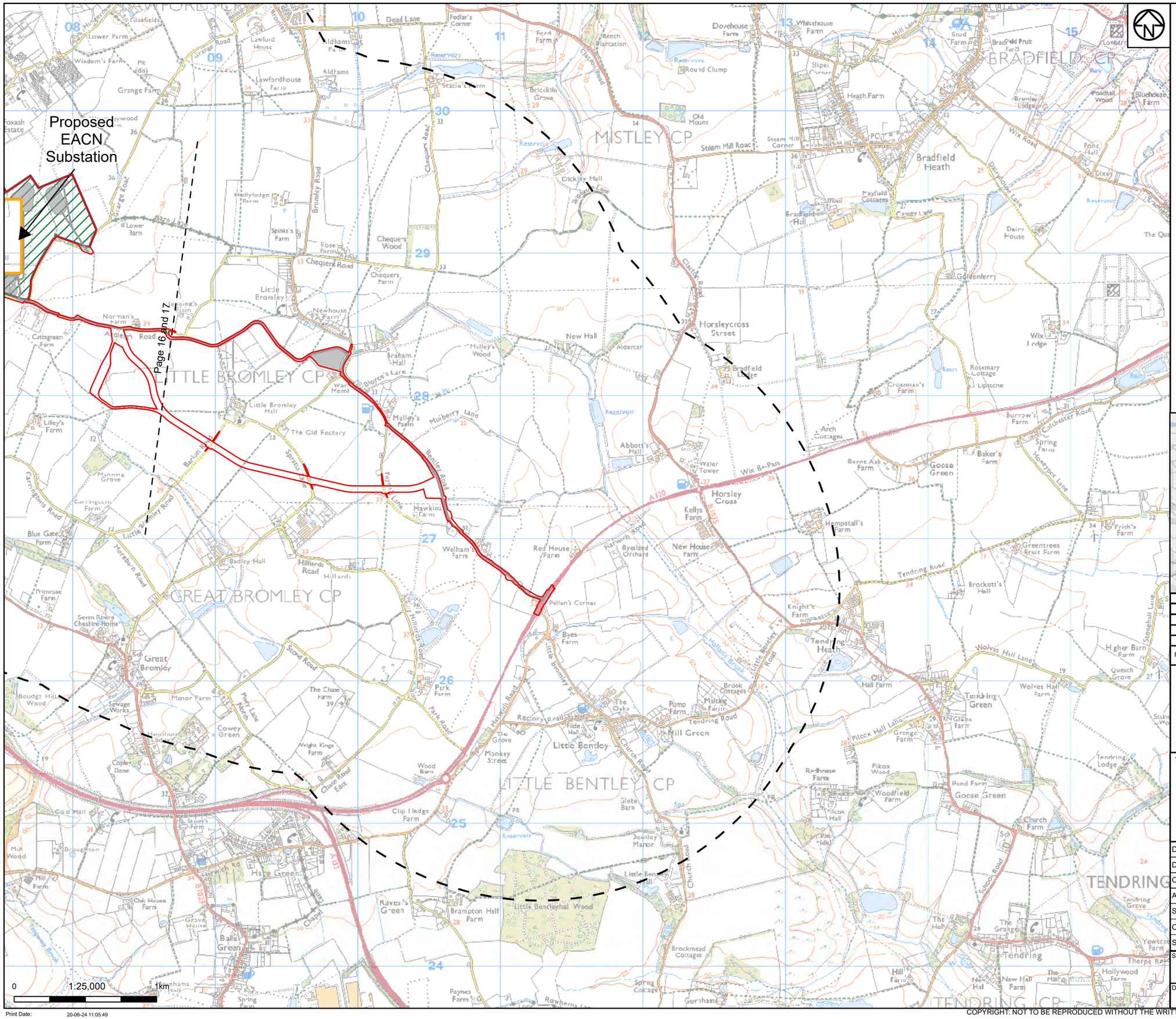
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Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:25,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

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Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103
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Draft order limits

Project sections

Proposed project design details

Proposed EACN substation

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 17 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:25,000	Datum:	AOD
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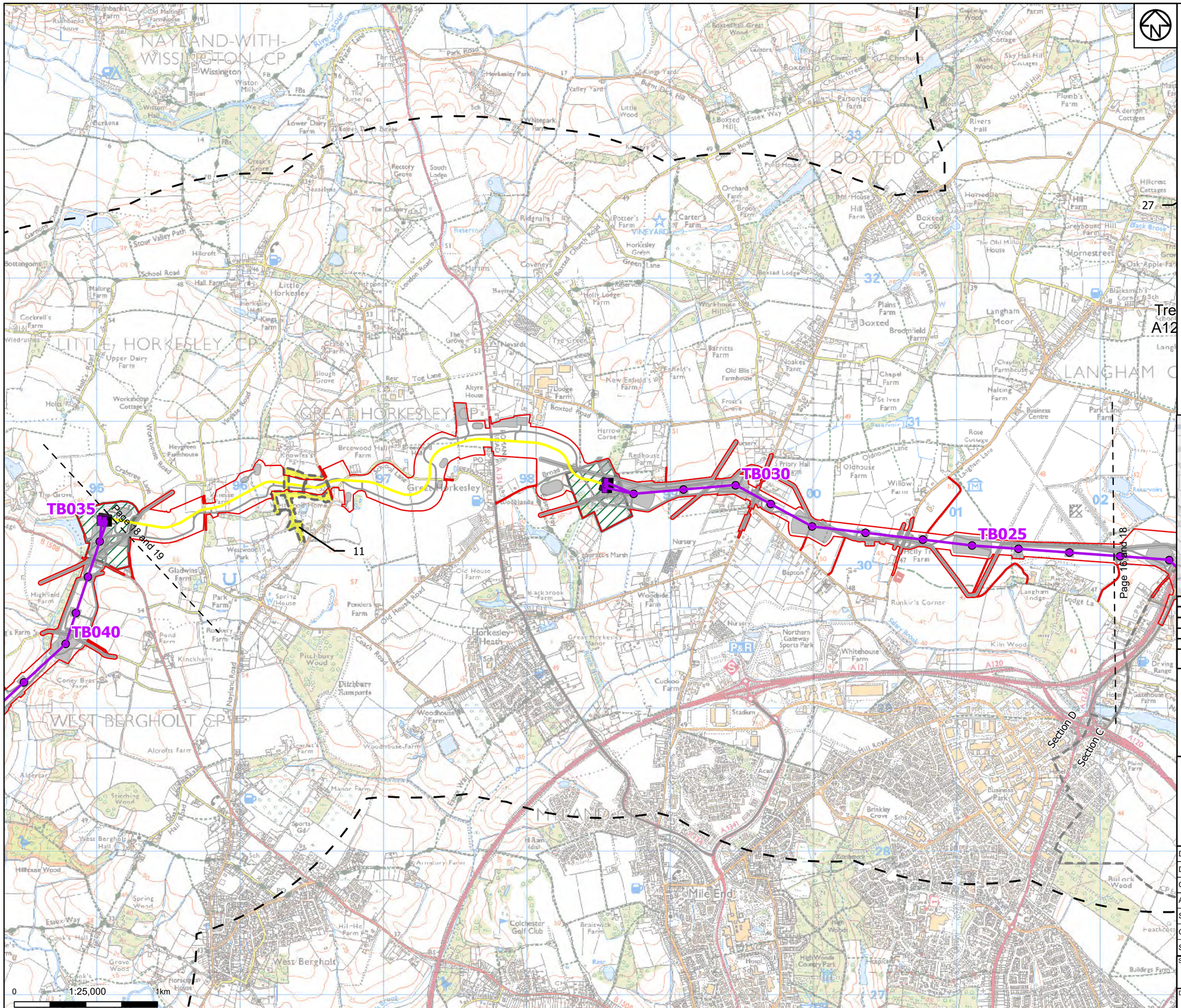
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10059280-ARC-ELS-ZZ-DR-00103

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B

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Dormouse survey locations

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 18 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
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Approved	K. Burrows	Date	June 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

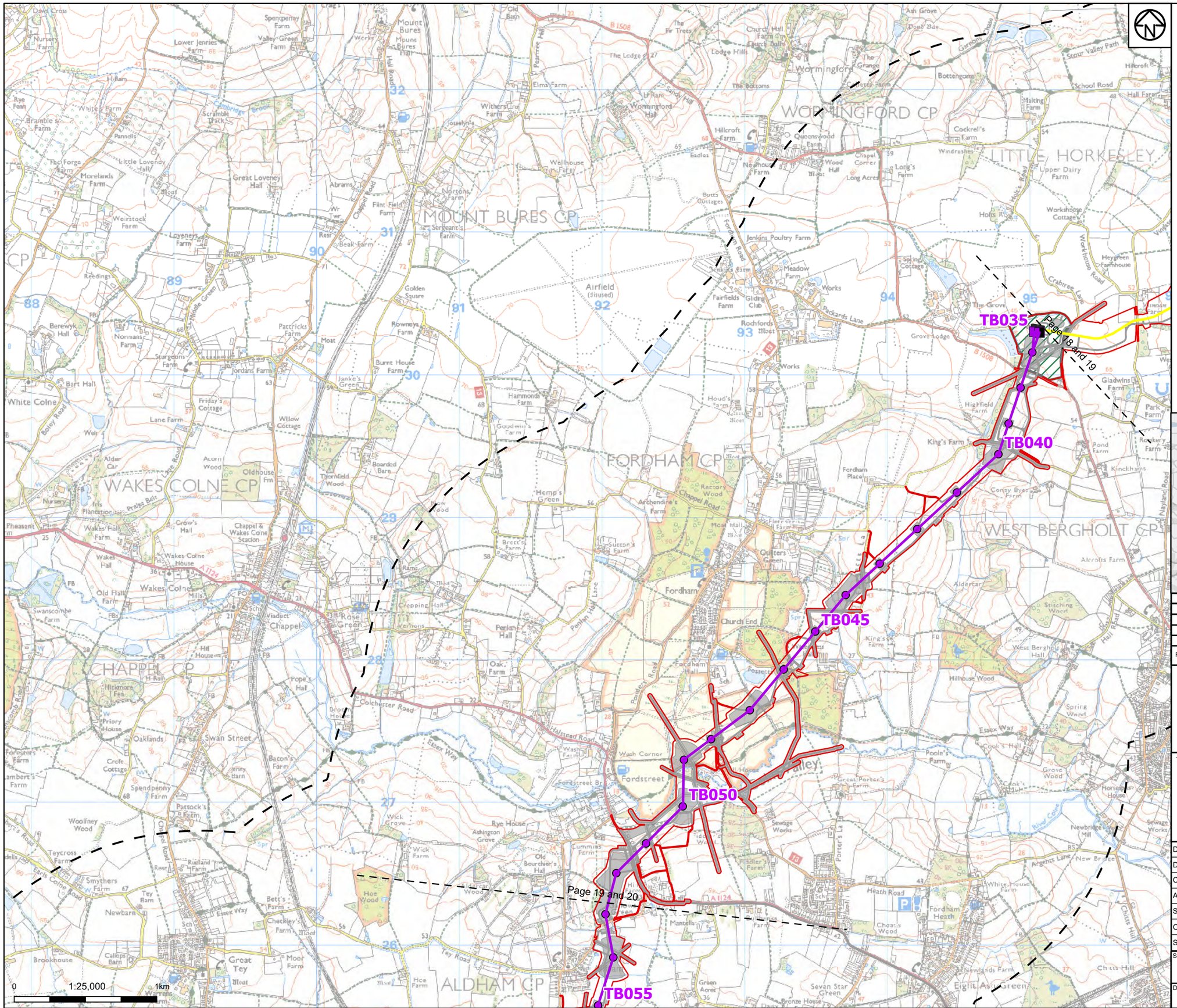
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Drawing Number: 10059280-ARC-ELS-ZZ-DR-00103

Revision: B

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Draft order limits

Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
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- Proposed environmental areas

Discipline specific constraints

- 2km Study Area
- Survey location 8 has been descoped as it is no longer impacted by the draft order limits

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations Page 19 of 31

Designed	E. Pickering	Date	June 2024
Drawn	K. Fischer	Date	June 2024
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Scale:	1:25,000	Datum:	AOD
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Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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TB050

TB055

TB060

TB065

TB070

Page 19 and 20

Page 20 and 21

Section D

Section E

12

ALDHAM CP

EIGHT ASH GREEN CP

GREAT TEY CP

MARKS TEY CP

COPFORD CP

STANWAY

FEERING CP

BIRCH CP

0 1:25,000 1km

Print Date: 20-06-24 11:05:57

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Dormouse survey locations

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 20 of 31

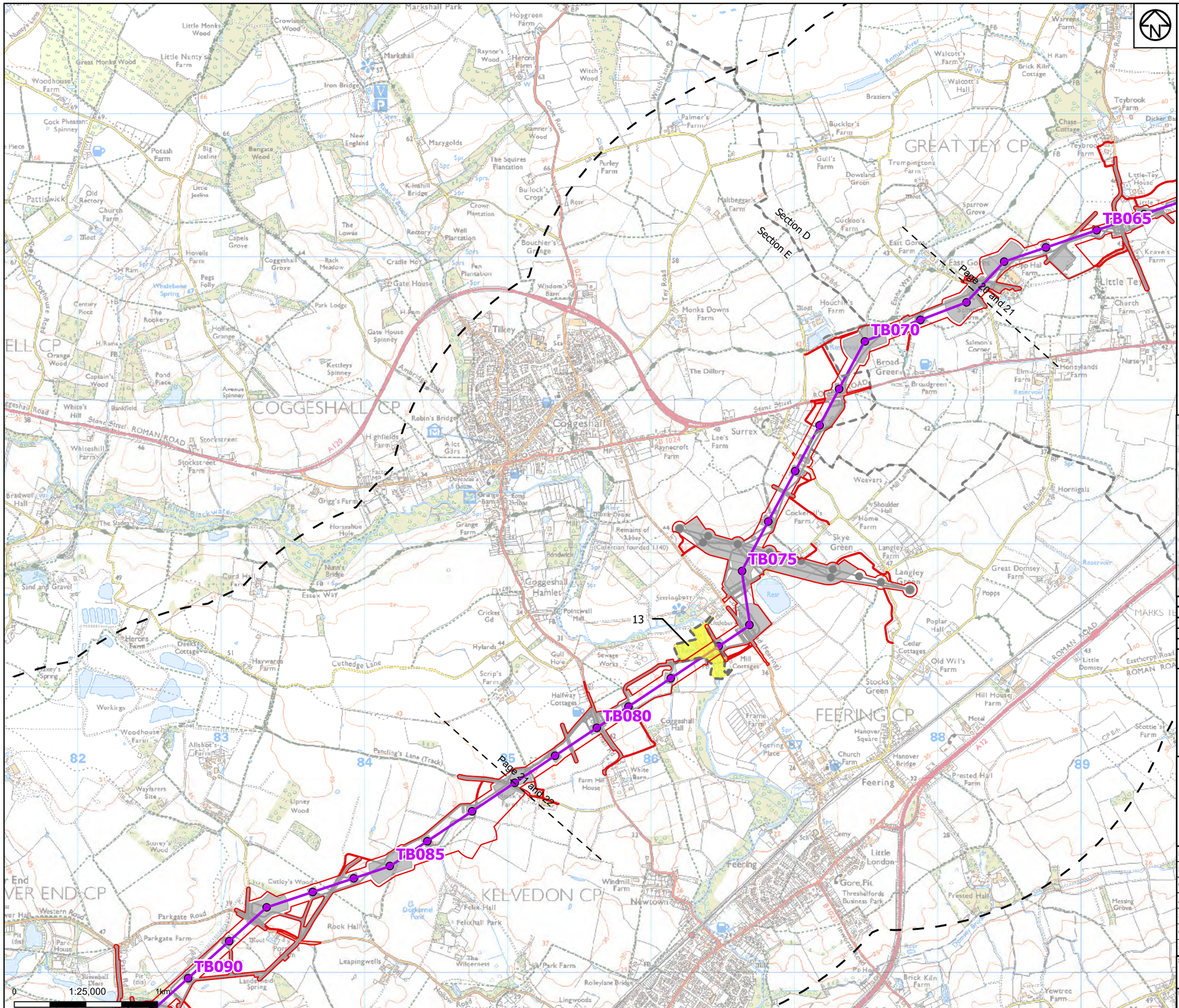
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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 21 of 31

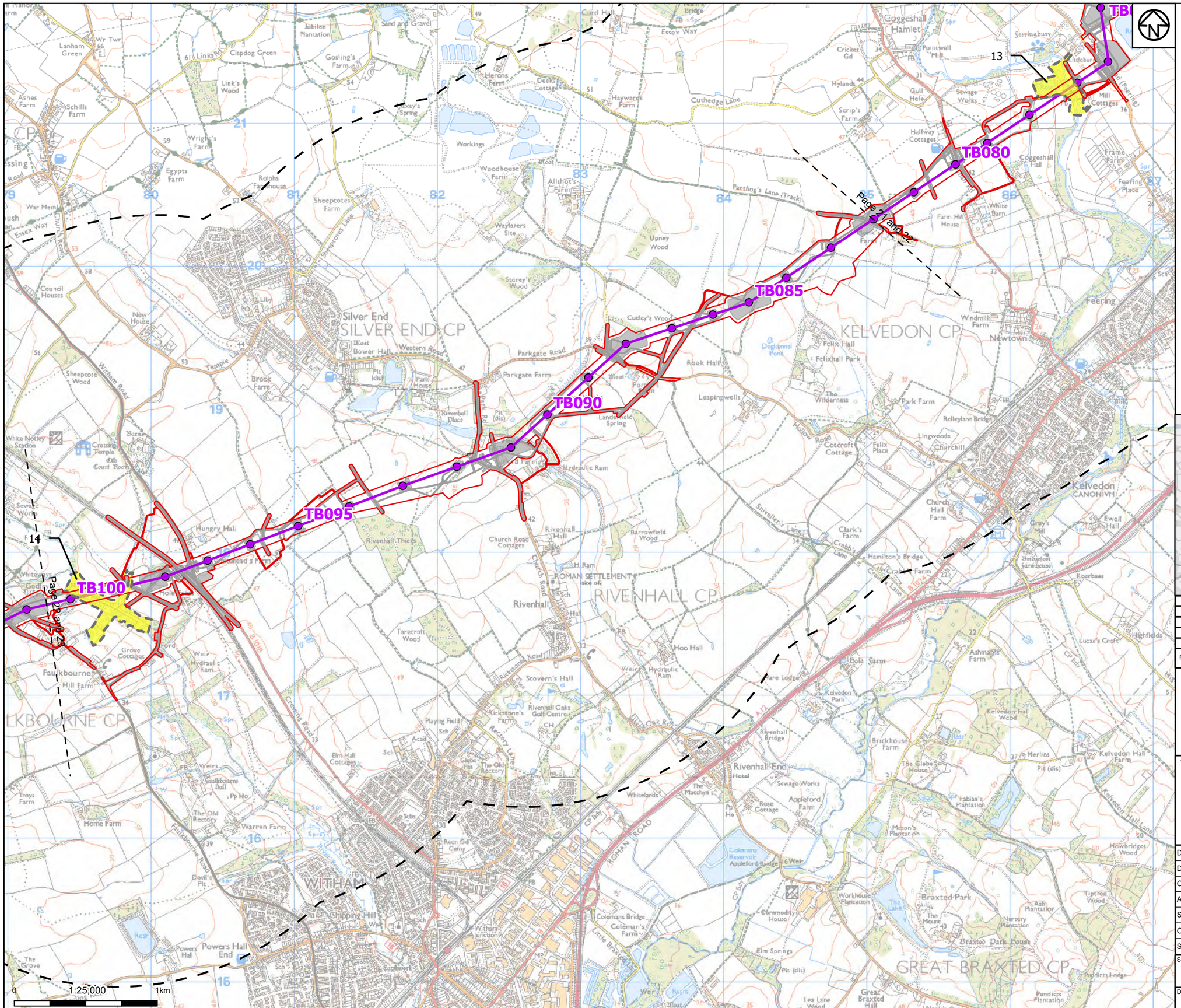
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Dormouse survey locations

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PROJECT:
Norwich to Tilbury

Title:
Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Dormouse survey locations

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations
Page 23 of 31

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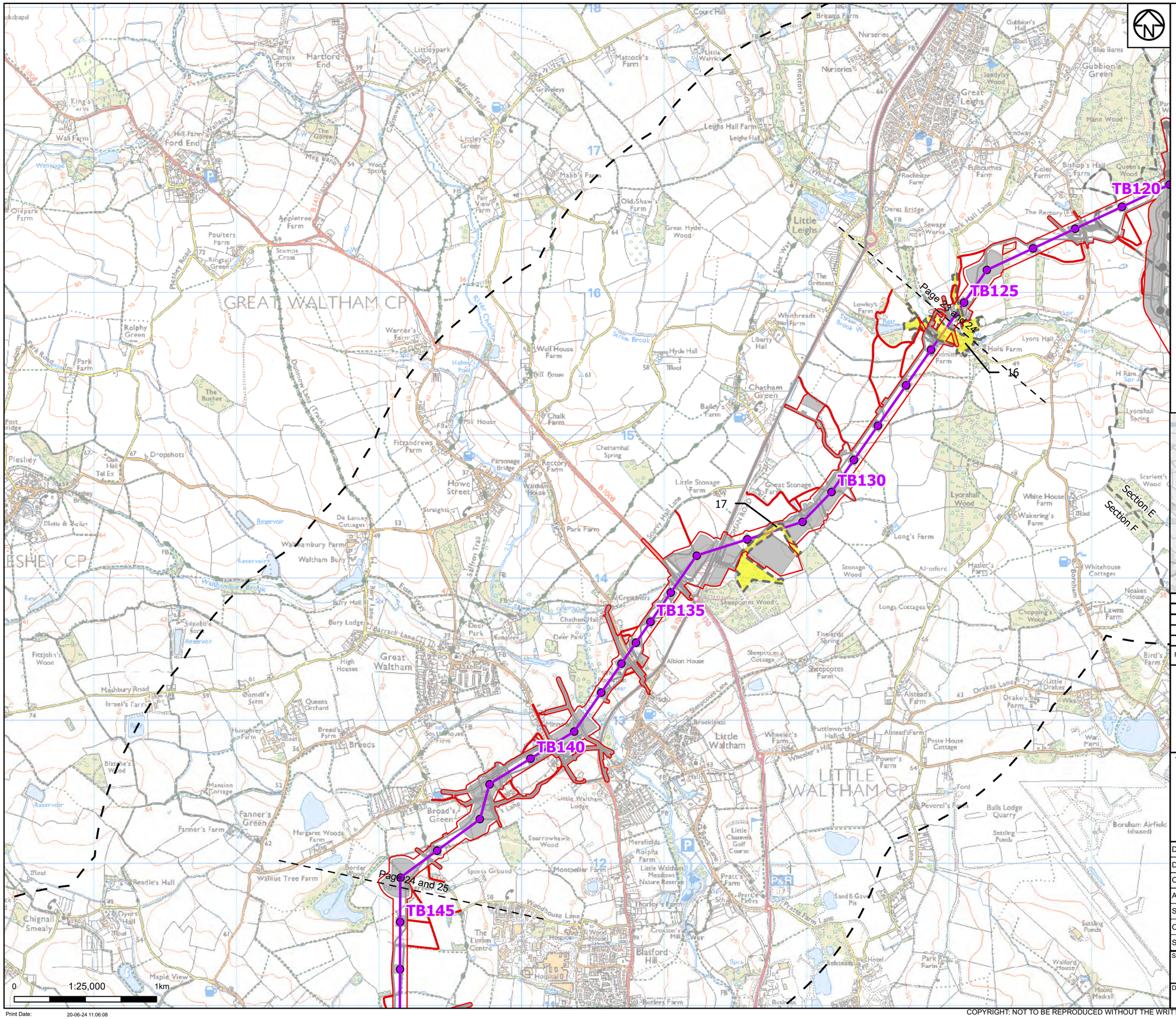
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

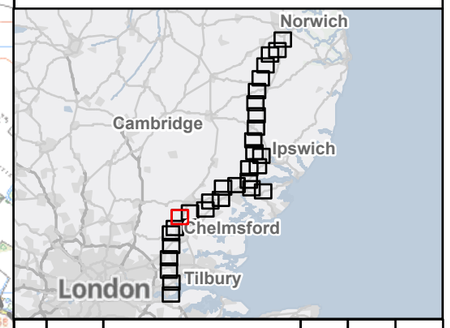
Discipline specific constraints

2km Study Area

Dormouse survey locations

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PROJECT:
Norwich to Tilbury

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Page 24 of 31

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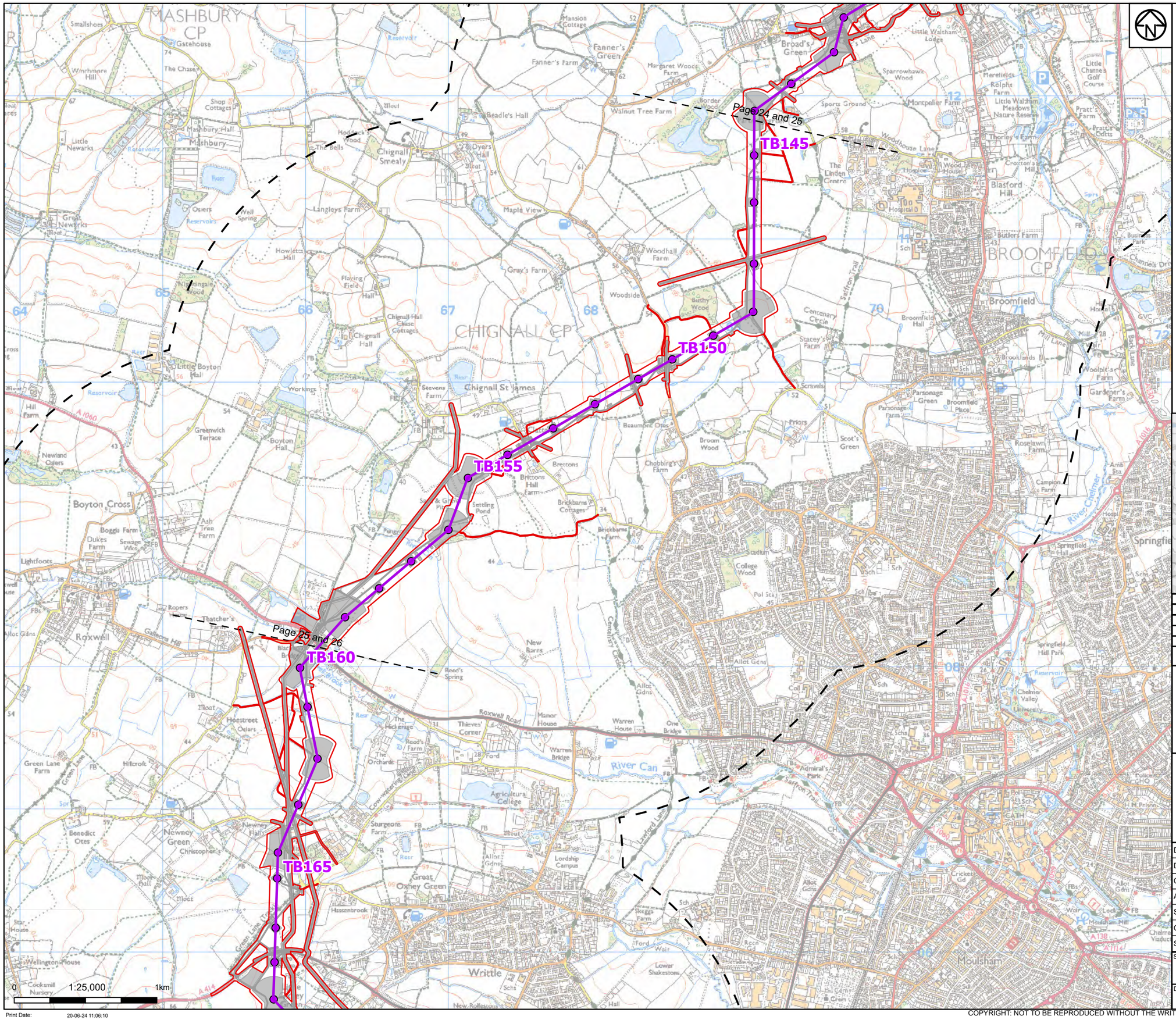
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TB145
TB150
TB155
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TB165
Page 24 and 25
Page 25 and 26
MASHBURY CP
CHIGNALL CP
BROOMFIELD CP
Chignall Smealy
Chignall St James
Great Oxney Green
Roxwell
Writtle
Moulsham
Broomfield
Boyton Cross
Little Boyton
Great Newarks
Little Newarks
Mashbury
Fanner's Green
Broad's Green
Woodhall Farm
Gray's Farm
Maple View
Langleys Farm
Woodside
Broomfield Hall
Parsonage Green
Broomfield Place
Brooklands
Blasford Hill
Montpelier Farm
Sparrowhawk Wood
Walnut Tree Farm
Margaret Woods Farm
Beadle's Hall
Dyers Hall
Chignall Hall
Howletts Hall
Playing Field
Nightingale Wood
Osiers Reservoirs
Hill Farm
Greenwich Terrace
Boyton Hall
Newland Osiers
Workings
Stevens Farm
Brettons
Brettons Hall Farm
Brickbarns Cottages
Brickbarns Farm
Settling Pond
Beaumont Otes
Broom Wood
Chobbing's Farm
Scot's Green
Priors
Scrawls
Stacey's Farm
Centenary Circle
Saffron Trail
Butlers Farm
Rolphs Farm
Little Waltham Meadows Nature Reserve
Little Channels Golf Course
Pratt's Farm
Pratt's Cotts
Crotton's Mill
Weir
Wood Hall House
Hospice
The Linden Centre
Woodhouse Lane
Little Waltham Lodge
Sports Ground
Border Wood
Hoddesdon Wood
The Bells
Shop Cottages
Gatehouse
Winchmore Hill
The Chase
Smallshoes
Reservoir
Osiers Reservoirs
Well Spring
Moat
Hall
Farm
Cottages
Lodge
Cross
Green
Wood
Hill
Mill
Lane
Road
Park
Sch
Hosp
Allot Gdns
Pol Sch
Acad
Stadium
College Wood
Lodge Farm
Springfield Hall
Springfield Hall Park
Chelmer Valley University
Police HQ
H.M. Prison
Admiral's Park
Agricultural College
Lordship Campus
Sturgeons Farm
Newney Hall
Newney Green
Christopher's
Benedict Otes
Moore Hall
Hussenbrook
Skegg's Farm
Lower Shakestone
New Barns
Reed's Farm
Reed's Spring
Thieves' Corner
Manor House
Warren House
Warren Bridge
One Bridge
The Hickerage
The Orchards
Hoestreet Osiers
Thatcher's Farm
Green Lane Farm
Hitcroft
Star House
Wellington House
Cocksmill Nursery
Ash Tree Farm
Boggs Farm
Dukes Farm
Sewage Wks
Lightfoots
Newney Green
Roxwell Road
River Can
River Chelmer
A1060
A414
A138
A12
A120
A1016
A1114
A1168
A1168(M)
A1168(M)
A1168(M)

TB155

TB160

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TB170

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Page 25 and 26

Page 26 and 27

Hylands Park

18

ROXWELL CP

HIGHWOOD CP

WRITTLE CP

0 1:25,000 1km

Print Date: 20-06-24 11:06:13

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Incidental Records

Dormouse survey locations

Survey location 8 has been descoped as it is no longer impacted by the draft order limits

Non-Statutory Sites

Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.8.1 - Ecology and Biodiversity - Dormouse Desk Study Records and Survey Locations

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Draft order limits
Project sections

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Incidental Records
Dormouse survey locations

Non-Statutory Sites

Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Hylands Park
TB175
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Section F
Section G
TB185
Swan Wood
TB190
21
TB195
Page 27 and 28
Margaretting
MARGARETTING CP
INGATESTONE AND FRYERNING CP
MOUNTNESSING CP
STOCK CP
Ingatestone
Mill Green
Fryerning
Heybridge
Mountnessing
Margaretting Tye
Stock
Norwich
Cambridge
Ipswich
Chelmsford
Tilbury
London

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Page 27 and 28

Page 28 and 29

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- Draft order limits
- Project sections

Proposed project design details

- Proposed overhead line alignment
- Proposed pylon position
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Dormouse survey locations

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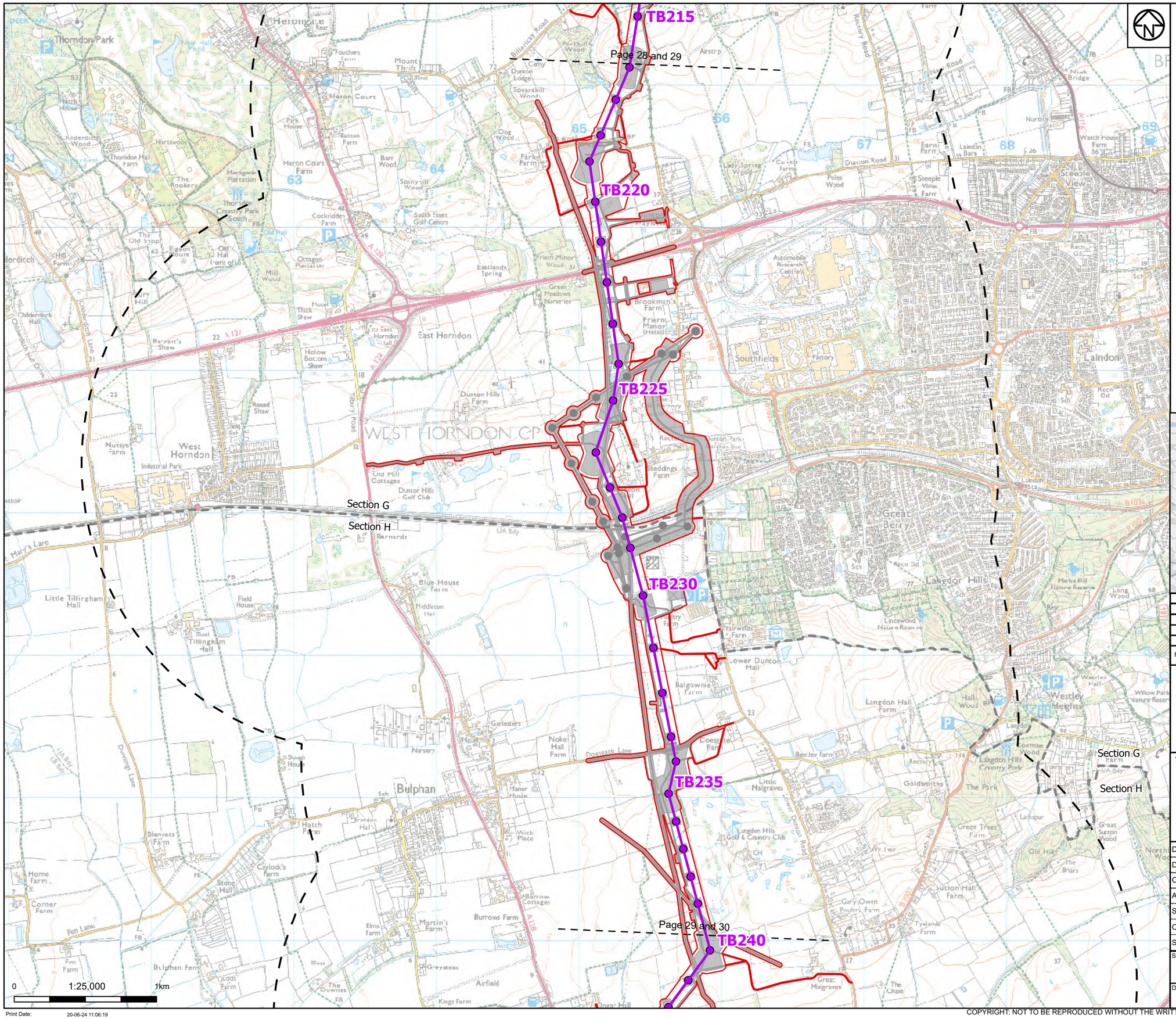
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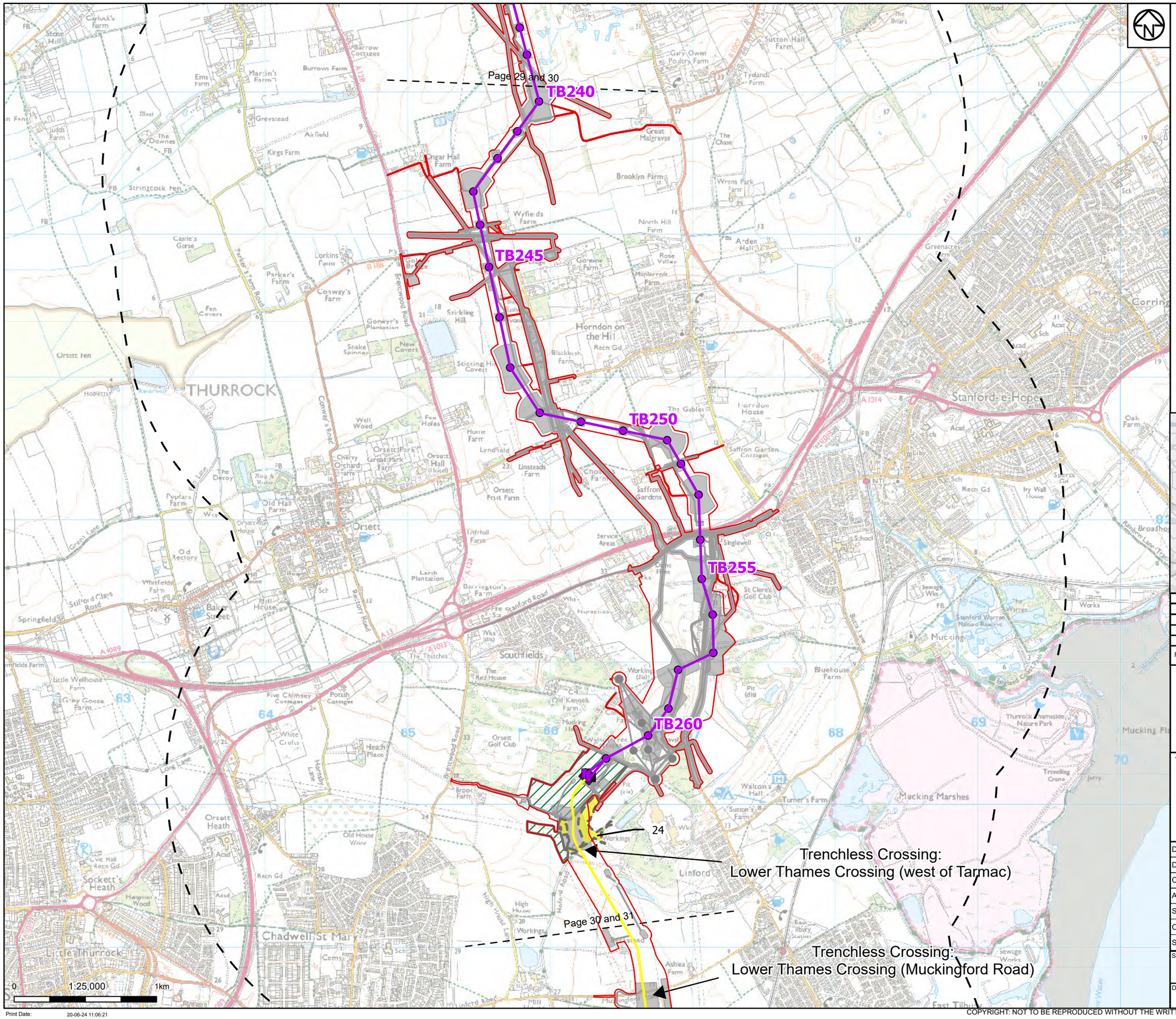
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Other temporary and permanent construction and operational works

Proposed environmental areas

Discipline specific constraints

2km Study Area

Dormouse survey locations

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Trenchless Crossing:
Lower Thames Crossing (west of Tarmac)

Trenchless Crossing:
Lower Thames Crossing (Muckingford Road)

Trenchless Crossing:
Tilbury Loop Railway and existing overhead lines (NGET and DNO)

Tilbury Substation

Page 30 and 31

0 1:25,000 1km

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- Draft order limits
- Project sections

Proposed project design details

- Proposed underground cable alignment
- Existing substation
- Other temporary and permanent construction and operational works
- Proposed environmental areas

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- Dormouse survey locations

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Appendix 8.9: Otter and Water Vole Report

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The Great Grid Upgrade

Norwich to Tilbury

Norwich to Tilbury

Preliminary Environmental Information Report - Volume III

Appendix 8.9: Otter and Water Vole Report

April 2024

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Annex C: Otter and Water vole current survey results
Annex D: Otter and Water vole Incidental Records

1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of the National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description in Volume I.

1.2 Ecological Background

1.2.1 The EIA Scoping Report (National Grid, 2022) for the Project, issued to the Planning Inspectorate in November 2022, defined the ecological background and scope of otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) surveys to be conducted for the Project. Watercourses and associated riparian areas, which could provide suitable habitats for otters and water voles are located within the draft Order Limits. The general approach to impact assessment for these species is to ensure that construction activities have minimal negative effects on their populations and habitats. This involves avoiding effects to sensitive habitats, mitigating any temporary disturbances, and implementing conservation measures.

1.3 Brief and Objectives

1.3.1 To undertake a comprehensive suite of surveys focused on otter and water vole presence. The objectives are as follows:

- Ascertain the presence or potential absence of otter and water vole within the draft Order Limits
- If identified, map the distribution of otter and water vole populations within the survey area
- Compile and present the survey outcomes in a baseline report

1.3.2 The results of these surveys will inform Project design and mitigation measures.

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided in Table A8.9.1.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.9.1) has been considered about the methodology included within this report.

Table A8.9.1 - Legal Compliance

Legislation	Details
Conservation of Habitats and Species Regulations 2017, as amended ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for either habitats or species (Special Areas if Conservation (SACs) and Special Protection Areas (SPAs)) and to provide protection for these sites through designation, planning and other controls. Otter is listed on Annex II of the Habitats Directive. This listing signifies that Special Areas of Conservation (SACs) can be designated to safeguard this species. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill or injure, disturb, or trade in, damage or destroy a breeding site or resting place of the animals such as otter that are listed in Schedule 2. However, these actions can be made lawful through the granting of licences by the appropriate authorities (Natural England in England). Licences may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the species concerned.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter by making it an offence to kill, injure, take, damage, destroy, sell, or possess them (with exceptions). The WCA grants full legal protection to otters. The Act prohibits intentional killing, injuring, or capturing of otters, as well as disturbing their places of shelter. Additionally, it is an offence to sell, possess, or transport otters or any parts of otters without a licence. Water voles are also afforded protection under the WCA. The Act makes it an offence to intentionally kill, injure, or capture water voles, or to disturb their breeding or resting places. It is illegal to sell, possess, or transport water voles or their parts without a licence.

Legislation	Details
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	The NERC Act 2006 places a duty upon public bodies to maintain Section 41 (s41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions. Otter and water vole are species of principal importance as listed in s41.
The Environment Act 2021 (HMSO, 2021a)	In line with the 25 Year Plan for the Environment (HM Government, 2018), new development should identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Act 2021 introduces a mandatory requirement for 10% biodiversity net gain for new developments to ensure that they enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, but there are options to deliver these gains offsite and this would be demonstrated via the Statutory Biodiversity Metric tool.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides further details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Stages of Screening

3.1.1 The need for otter and water vole surveys is determined based on a two-stage screening exercise outlined below:

Stage 1 - Sites of Known Importance

3.1.2 A desk study was undertaken to identify sites of known importance for otter and water vole within the draft Order Limits and a 2 km search area. These sites are locations where potential negative effects could arise due to the Project. Sites of known importance would be further surveyed to assess the presence of otter holts and water vole burrows.

3.1.3 Following the Stage 1 exercise, no sites of known importance for otter or water vole have been identified within the search area where negative effects could occur due to the Project.

Stage 2 - Areas of Potential Importance

3.1.4 A review of aerial photography, Ordnance Survey mapping, Phase 1 habitat data, and discussions with local consultees, was undertaken to identify areas that could be of potential importance for otter and water vole. These areas are those that may support notable species or assemblages of these species.

3.1.5 Based on this Stage 2 exercise, watercourse crossings have been identified that support diverse habitats potentially important for otter and water vole that would be affected by the Project, these have been or will be subject to survey.

3.2 Desk Study

3.2.1 A desk study was conducted in September 2023 and subsequently updated in January 2024 following a design change. The desk study identified records for otter and water vole within 2 km of the draft Order Limits over the past 10 years. Records were obtained from the Norfolk Biodiversity Information Service (NBIS), Suffolk Biodiversity Information Service (SBIS) and the Essex Field Club (EFC).

3.2.2 The record centres also provided information on non-statutory designated sites within 2 km of the draft Order Limits; these were County Wildlife Sites (CWS) and Local Wildlife Sites (LWS). Non-statutory designated sites were reviewed for any mention of otter and water vole in their designation citation.

3.2.3 A search for SACs within 10 km of the draft Order Limits, where otter is a qualifying feature, was conducted using The Multi-Agency Geographic Information for the Countryside (MAGIC) and the Joint Nature Conservation Committee (JNCC) website.

3.2.4 A further search of Sites of Special Scientific Interest (SSSIs) within 2 km of the draft Order Limits was conducted using MAGIC, where otter and/or water vole is identified as present in the citation.

3.2.5 The National Water Vole Database and Mapping Project (McGuire, C. and Morse, A., 2020) was reviewed for information on trends in water vole populations at a regional and national level.

3.3 Survey Methodology

Site Selection

3.3.1 A review of aerial photographs and Ordnance Survey maps revealed 161 watercourses within the draft Order Limits that may be affected by the Project, where the following design features are deemed to directly influence a watercourse: temporary haul road crossings, underground cable crossings and drainage outflows. Each of these survey locations has been given an individual reference number '[ditch ID]', which are presented in Figure A8.9.1:2 Otter and Water Vole Survey Locations and Desk Study Records in Annex A. Due to design changes, these ditch ID numbers are no longer in numerical order from north to south.

Otter

3.3.2 Where access allowed, otter surveys were undertaken in accordance with best practice guidance (Chanin, 2003; Liles, 2003; and Chanin, 2005) and CIEEM competencies for undertaking otter surveys (CIEEM, 2013).

3.3.3 Watercourses and associated riparian habitat that may be directly affected by the Project were surveyed for otter. Watercourses were searched for evidence indicating the presence of otter, 200 m downstream either side of the potentially affecting feature, in line with guidelines in Chanin (2003). Evidence of American mink (*Neovison vison*) was also recorded.

3.3.4 A resting site was classified as active where any of the following signs were present:

- Spraint or footprint within tunnel or immediate ground outside
- Scratch marks and/or body rubbing against tunnel wall
- Otter hair within tunnel or immediate ground outside

3.3.5 If a resting site or breeding holt was recorded, the location was recorded on GIS.

Water Vole

3.3.6 Survey methodology followed the Water Vole Mitigation Handbook (Dean et al., 2016).

3.3.7 A survey visit was undertaken to collect evidence of water vole presence, including latrines, burrows, runs, footprints, feeding remains and stashes, droppings, and sightings. Surveys covered 200 m downstream of either side of the potential influencing features.

3.3.8 Information on the habitat was collected including water flow direction, bank substrate, existing disturbance, bank vegetation type and structure, and adjoining land use.

3.3.9 If water vole presence was confirmed, the survey was stopped. Therefore, not all field signs may be accounted for.

3.3.10 Where there was uncertainty over droppings and additional field signs were inconclusive, dropping samples were collected and sent for DNA analysis in a laboratory.

3.4 Dates of Survey and Personnel

3.4.1 Field surveys were undertaken between August and September 2023, further surveys will be undertaken in the next water vole survey period (from mid-April to September 2024). Although otter surveys are not seasonally constrained, as the surveys were undertaken at the same time the water vole active season was used for programming the surveys. The lead surveyors in the surveys were experienced ecologists, competent at undertaking otter and water vole surveys.

3.5 Notes and Limitations

3.5.1 In some instances, access to watercourses was limited by dense vegetation cover (Ditch 1, 2,17, 25, 26(a), 50, 51, 52(a), 52(b), 52(c), 53, 54, 62, 68, 73, 87,88, 89) or logs and other debris (Ditch 54). In all cases, this only presented a minor constraint as there were enough access points/viewing points to complete the survey.

3.5.2 High rainfall immediately prior to surveys, affected surveys at Ditch 1, 2, 3, 31, 37 and 39. It is possible that field signs may have been washed away. Repeat visits to all sites with suitable habitat in spring 2024 should minimise the effects of this on the overall results of the surveys.

3.5.3 Land access restrictions may result in some land parcels not being surveyed on the ground and survey data may therefore be incomplete. Every effort will be made to obtain access. Where access is not possible desk study data and data collected as part of the Project will be used to infer likely presence or absence.

4. Results

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4. Results

4.1 Overview

4.1.1 One hundred and sixty-six ditches and watercourses were identified within the draft Order Limits that required field survey.

4.1.2 Desk study results are presented on Figure A8.9.1Figure A8.9.1: Otter and Water Vole Survey Locations and Desk Study Records in Annex A. Further desk-based data and survey results obtained beyond September 2023 shall be reported within the ES.

4.2 Desk Study Results

Statutory Designated Sites

4.2.1 Seven SACs were situated within 10 km of the draft Order Limits, of these, one was noted as supporting otter. The Broads SAC, identified otter as a qualifying feature, but not a primary reason for site selection. The Broads SAC consists of naturally nutrient-rich lakes that support the original Fenland flora and contains one of the richest assemblages of rare and local aquatic species. The site is located 8.93 km north-east of the draft Order Limits.

4.2.2 Twenty-four SSSIs were situated within 2 km of the draft Order Limits, and none included otter or water vole within their citation. It should be noted that desk study records identified the presence of otter and water vole within or close to most of these sites.

Non- Statutory Designated Sites

4.2.3 The citations for five non-statutory designated sites received from the desk study mention either otter or water vole, two CWS and three LWS. Details of these locations are provided in Table A8.9.2 and are illustrated on Figure A8.9.1: Otter and Water Vole Survey Locations and Desk Study Records in Annex A.

Table A8.9.2 – Non-statutory designated sites where citations mention otter or water vole

Site Name	District	Distance from Order Limits (km)	Site Description	Otter/water vole comment/records
Bramford Meadows CWS	Suffolk (*Section B*)	1.17 (East)	This site on the east bank of the River Gipping has grassland and scrub, and it is crossed by wet ditches and the former course of the river.	This is also key habitat for priority mammals including otter and water vole.

Site Name	District	Distance from Order Limits (km)	Site Description	Otter/water vole comment/records
Sproughton Park CWS	Suffolk (*Section B*)	Within draft Order Limits	The site consists of grassland, wet woodland (predominantly alder), scrub and hedgerow habitats. The site is adjacent to the Belstead Brook.	Otter (biodiversity priority species) has been seen on the Belstead Brook and the woodland provides ideal lying up habitat for this species. The ditches and ponds are important for water vole
Langham Water Works LWS	Essex (*Section C*)	1.18 (West)	A combination of multiple UK and Essex BAP priority habitats can be found on this site. Wet woodland, eutrophic standing water, traditional orchards (UK BAP) and old orchards (Essex BAP). A range of flora including nationally scarce species.	Water voles have also been recorded from some of the ditches.
Chelmer Valley riverside LWS	Essex	1.76 (East)	A mosaic of riverside habitats including grassland, scrub, and wooded plantations, which form a corridor into Chelmsford City Centre.	Water voles have been recorded along this stretch of the river and otters may use it to pass along the Chelmer to the quieter headwaters to the north.
Coggeshall Hall Farm LWS	Essex	Within draft Order Limits	A river valley site with a mosaic habitat of cricket-bat willow plantations, flower-rich grassland, and associated hedgerows.	The fauna of the site included otter within the river corridor.

Species Records

4.2.4 Desk study records showed a total of 53 otter sightings within 2 km of the draft Order Limits, distributed across the three counties. Slightly more records appeared in Suffolk and Norfolk, 24 and 19 respectfully, compared to Essex with ten.

4.2.5 A total of 73 water vole records were returned from the desk study with 2 km of the draft Order Limits. Norfolk held most of these recordings, 54, followed by Suffolk, 17. Only two records of water vole was recorded in Essex within 2 km of the draft Order Limits.

4.2.6 A review of these records identified the presence of otter in Norfolk on the River Tas and Waveney, and in Suffolk on the River Brett, Gipping and Stour. Records revealed the presence of water vole in Suffolk on the River Brett, Gipping and Stour and in Essex on the River Colne.

4.2.7 Desk study results are illustrated on Figure A8.9.1Figure A.8.9.1 Otter and Water Vole Survey locations and Desk Study Records in Annex A and presented in the Table 8.9.3 in Annex B.

4.2.8 The National Water Vole Database and Mapping project (McGuire, C. and Morse, A., 2020) revealed that water voles have been recorded in all three counties affected by the Project. The resolution of these records was not sufficient to make any other firm conclusions.

4.3 Survey Results

4.3.1 A total number of 161 watercourses had been identified as requiring survey and 33 of these were visited in 2023. Only data gathered between September 2022 and September 2023 has been included within this report, to allow enough time for the processing of results.

Otter

4.3.2 Of the 33 watercourses surveyed in 2023, it was determined that 14 were suitable (suitable, sub-optimal and optimal) for supporting otter, whereas 19 were deemed unsuitable. Where watercourses are deemed unsuitable, otter resting sites were considered absent, it is nevertheless possible that otters may use the feature when travelling across their range.

4.3.3 Confirmed field signs of otter (spraint and paths/slides) were reported on Ditch 54, 62 and 68. No holts or resting sites were reported.

Water Vole

4.3.4 Of the 33 watercourses surveyed in 2023, it was determined that 17 were suitable (suitable, sub-optimal and optimal) for supporting water vole, with 16 deemed unsuitable. Where watercourses are deemed unsuitable, water vole was considered absent and no further surveys for water vole are proposed.

4.3.5 None of the ditches surveyed showed confirmatory field signs of water vole. Field signs were recorded on Ditch 1, 31 and 52b that had potential to be water vole (potential burrow, footprint, and resting site respectively), but the lack of confirmatory signs in the form of droppings and latrines meant that their presence was not confirmed, and further surveys will be undertaken.

4.3.6 Further surveys will be undertaken in spring 2024 for watercourses that were not surveyed in 2023. Watercourses considered as suitable habitat for water vole in 2023 will undergo a second visit in 2024 to confirm presence/absence.

4.3.7 Full details of these results can be found in Annex C.

4.4 Incidental Findings

4.4.1 There have been three incidental records of water vole field signs, including two possible burrows (I1 and I3) and one confident sighting (I5). There have also been five

incidental records of otter, including three potential holts (I2, I6 and I7) and one sighting (I8). These incidental records are presented in Annex D. Further surveys will be undertaken in 2024 to confirm the presence absence of water vole and otter in these locations.

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Annex A: Figures

Figure A8.9.1 Otter and Water Vole Survey Locations and Desk Study Records

Pages

Note: This figure has been revised. This does not affect the preliminary assessment in the PEIR. For more details we refer you to the Errata and Corrections Log (June 2024) on the Project website

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PROJECT:
Norwich to Tilbury

Title:
A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Overview

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Proposed substation extension

Norwich Main Substation

RG001

RG005

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RG015

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Page 1 and 2

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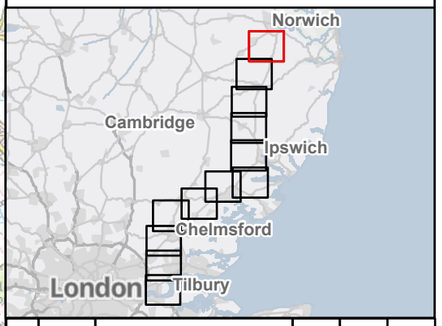
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Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Possible water vole burrow
Otter desk study records
Water vole desk study records
Otter and water vole ditch ID

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 1 of 12

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South Norfolk Council

Mid Suffolk District Council

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Page 2 and 3

Waveney Valley Overhead Line

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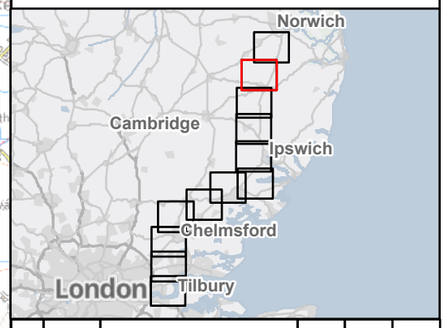
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Other temporary and permanent construction and operational works

Discipline specific constraints

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Otter desk study records
Water vole desk study records
Otter and water vole ditch ID

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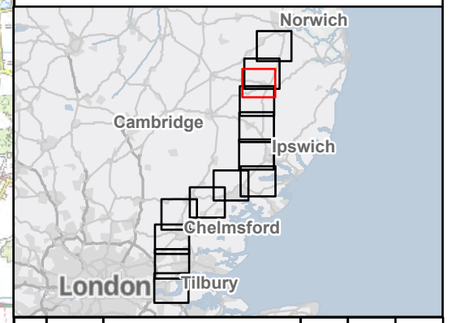
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- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Otter desk study records
- Water vole desk study records
- Otter and water vole ditch ID

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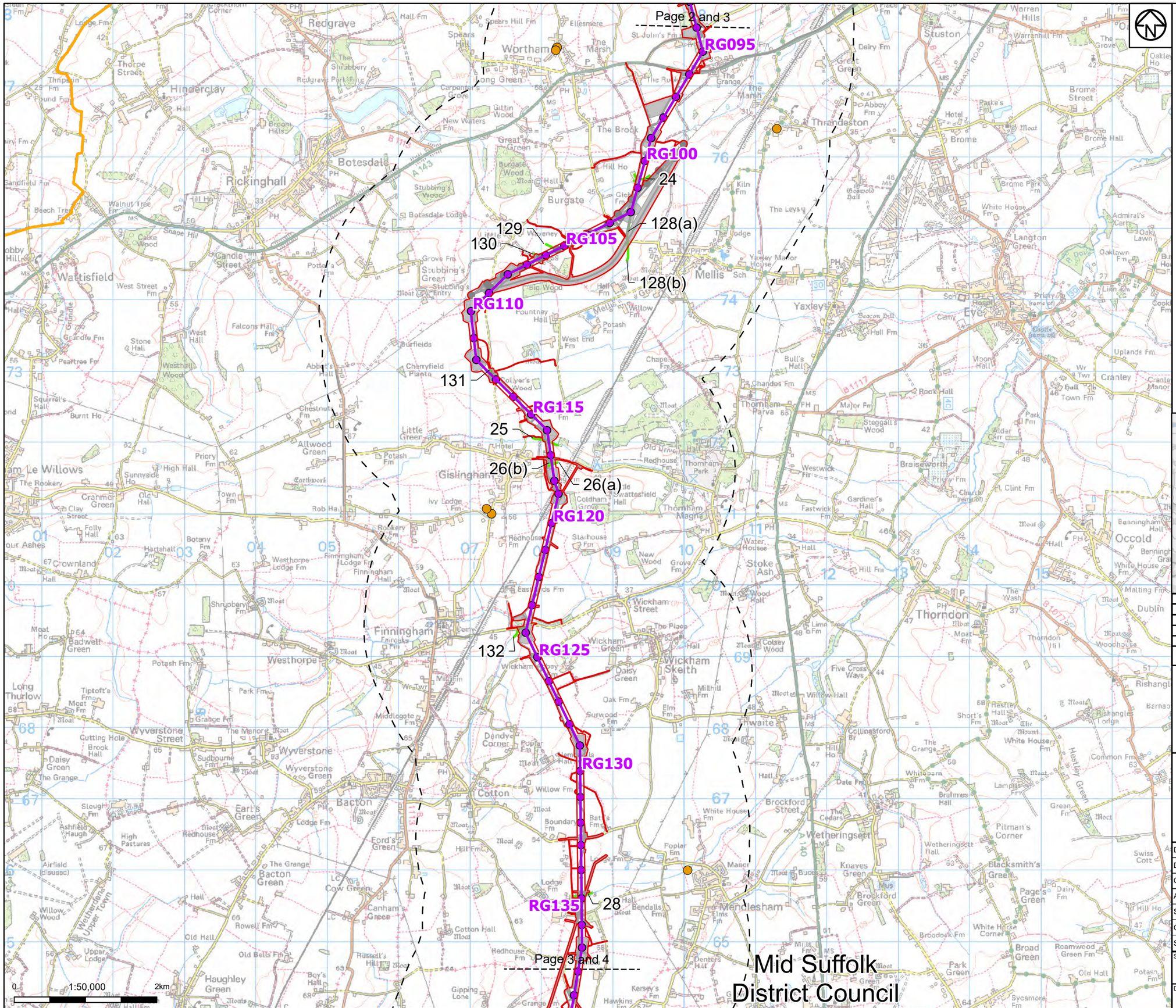
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Proposed overhead line alignment
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Discipline specific constraints

2km Study Area
Water vole desk study records
Otter and water vole ditch ID

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Norwich to Tilbury

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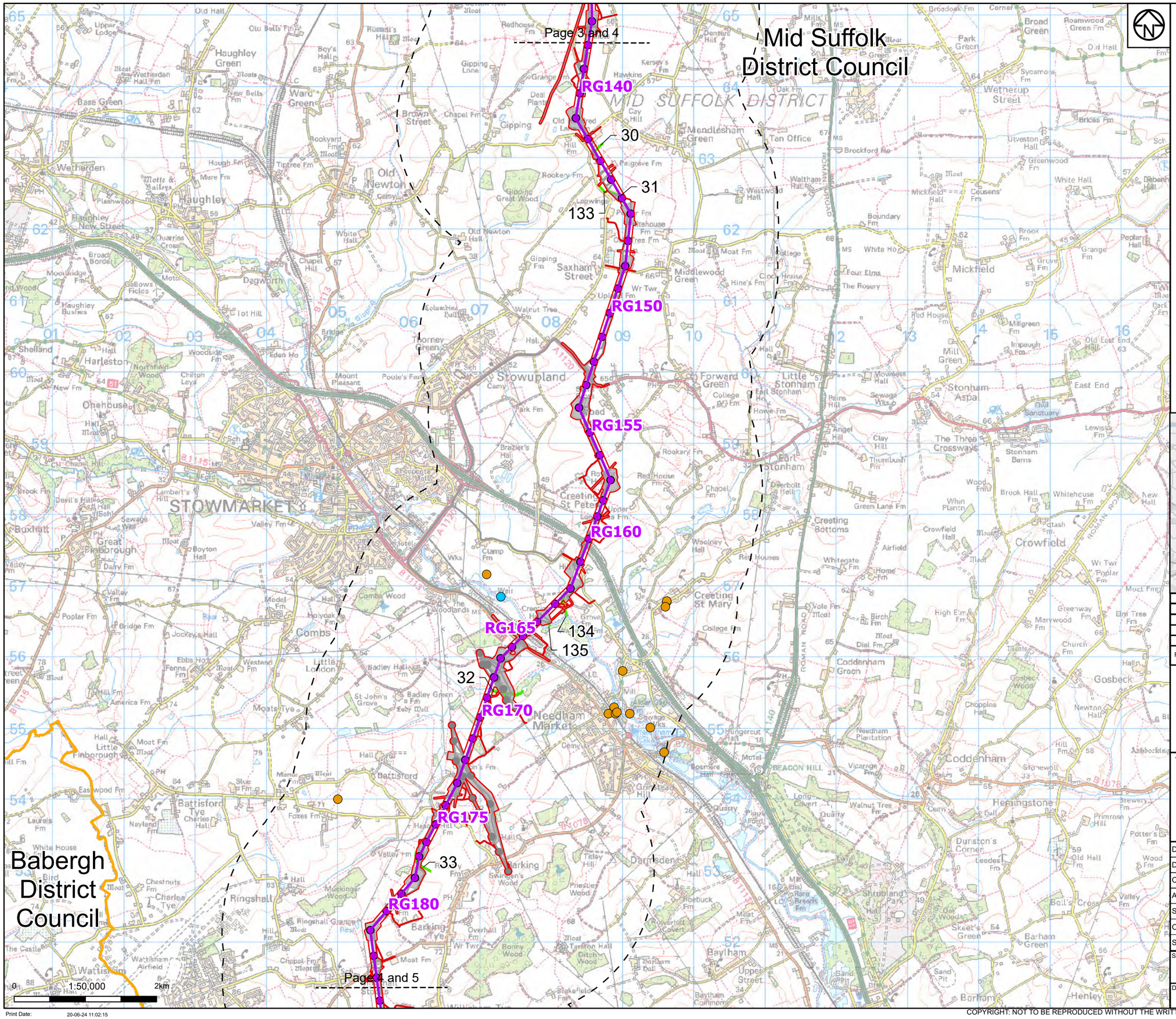
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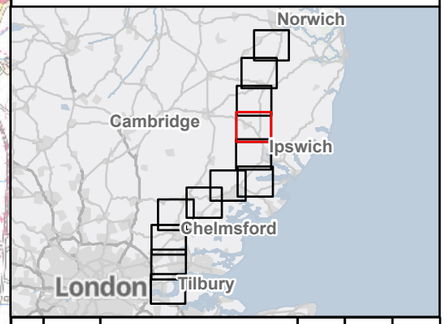
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- Water vole desk study records
- Otter and water vole ditch ID

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Ipswich District Council

Babergh District Council

Bramford Meadows

Bramford Substation

Proposed substation extension

Sproughton Park

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Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

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Possible otter holt
Possible water vole burrow
Otter desk study records
Water vole desk study records
Otter and water vole ditch ID
County Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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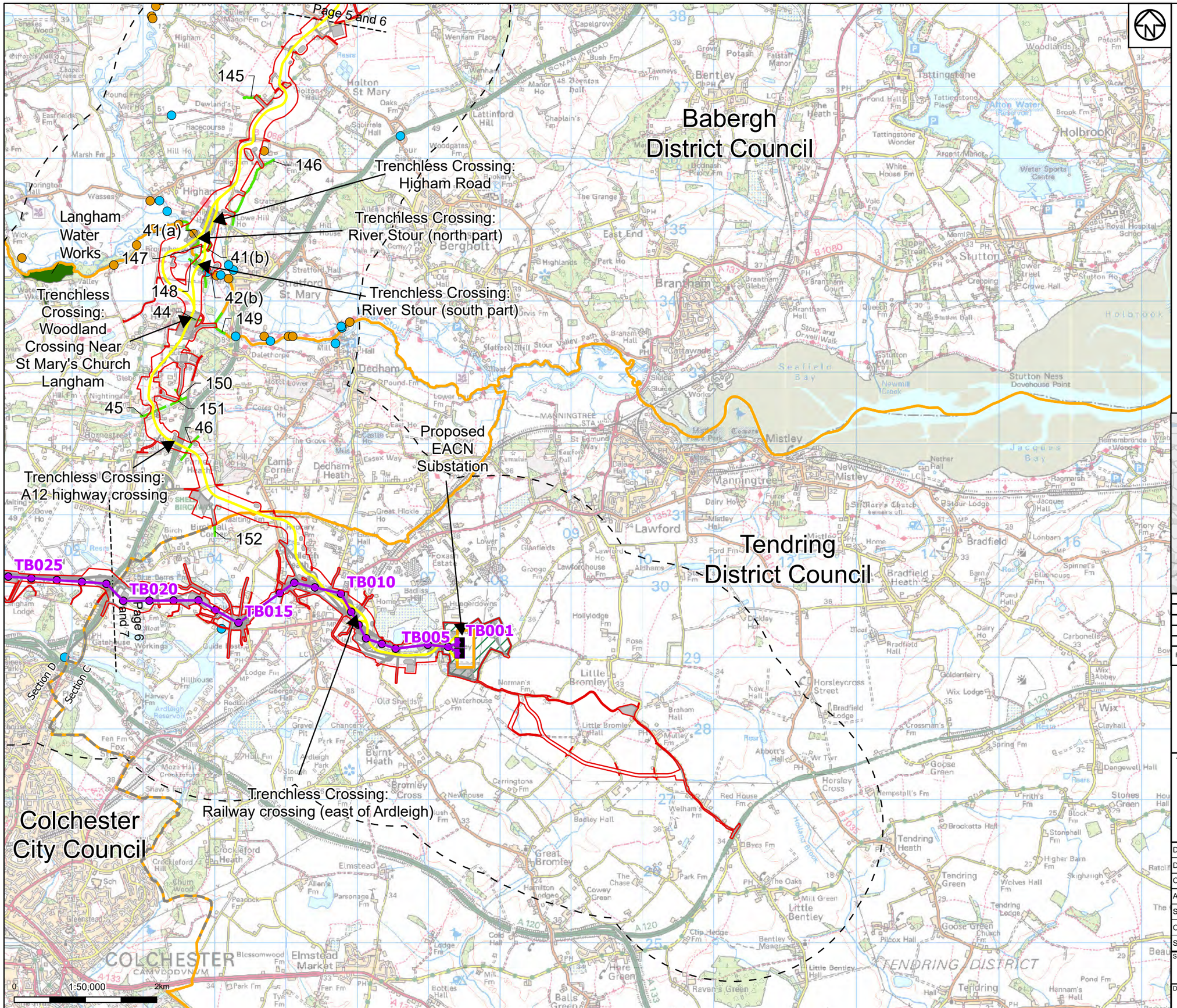
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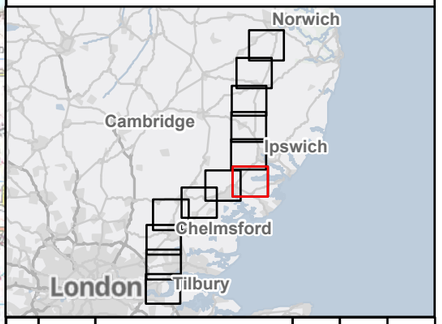
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Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Otter desk study records
Water vole desk study records
Otter and water vole ditch ID
Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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A	April 2024	FOR STATUTORY CONSULTATION	DP	AF	KB

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PROJECT: Norwich to Tilbury

Title:

A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 6 of 12

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

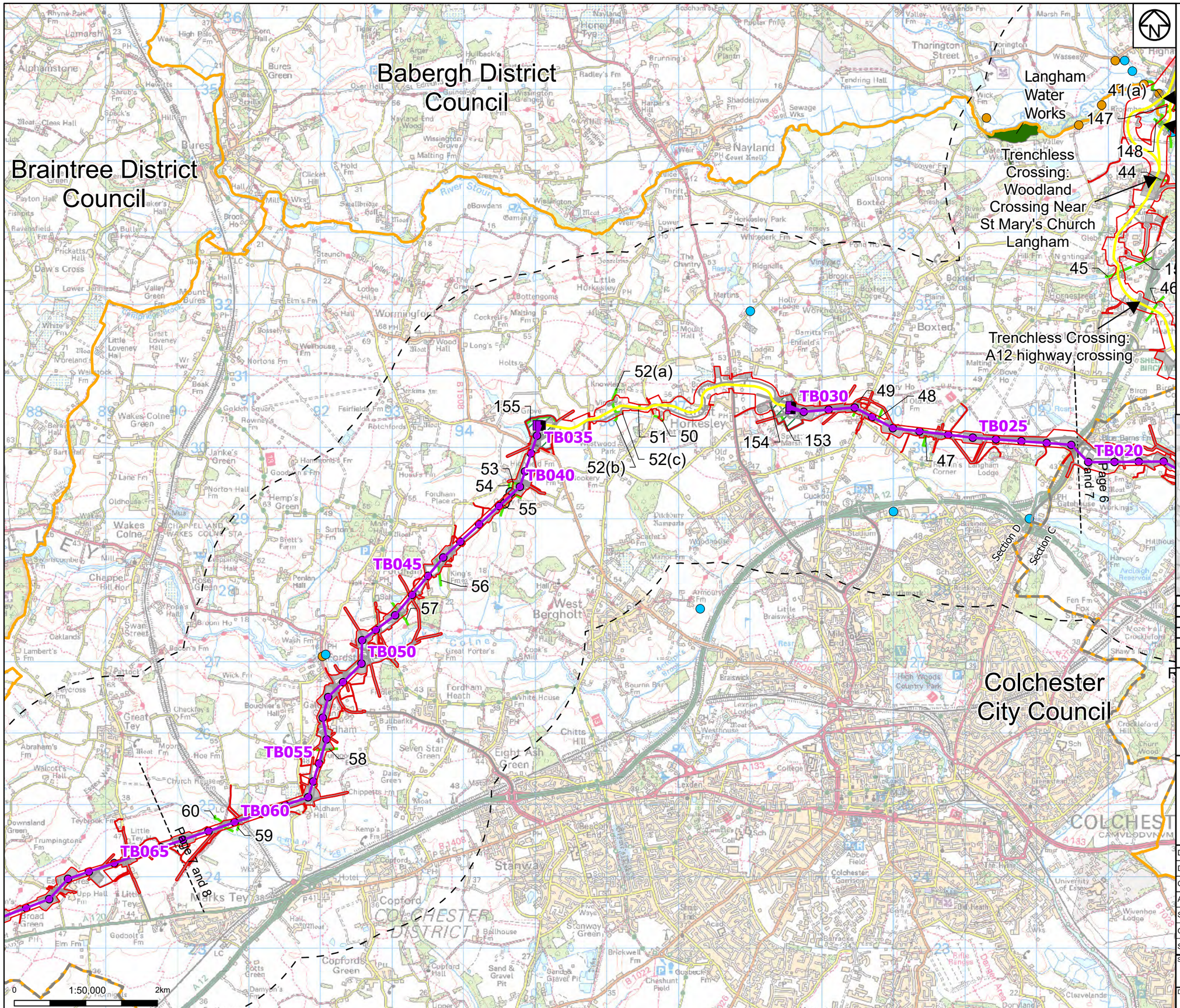
Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EBD-ZZ-DR-ZZ-00122

Revision: B

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Draft order limits
Project sections
Local Planning Authorities

Proposed project design details

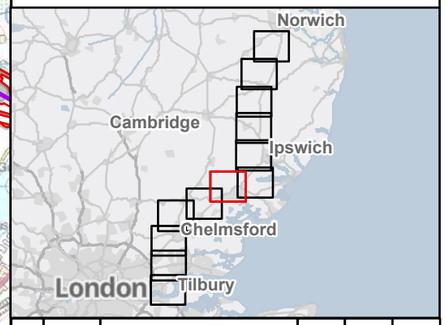
Proposed overhead line alignment
Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Potential otter holt
Potential otter holt
Potential otter slide
Otter desk study records
Water vole desk study records
Otter and water vole ditch ID
Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 7 of 12

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

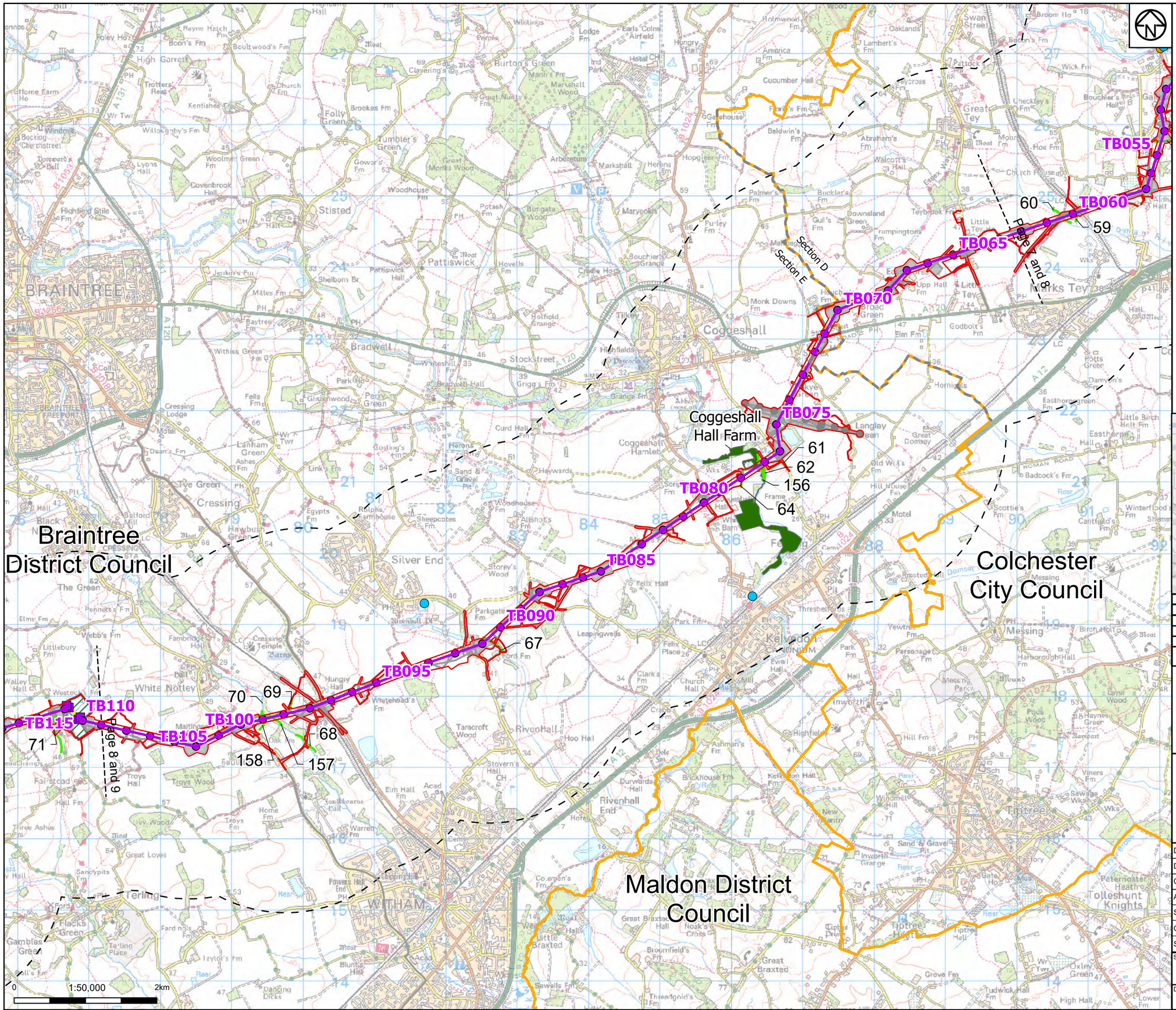
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Revision: B

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Draft order limits
Project sections
Local Planning Authorities

Proposed project design details

Proposed overhead line alignment
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Otter desk study records
Water vole desk study records
Otter and water vole ditch ID
Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 8 of 12

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Chelmsford City Council

TB105
TB110
TB115
TB120
TB125
TB130
TB135
TB140
TB145
TB150
TB155
TB160

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72
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79
80
160
161

Page 8 and 9

Page 9 and 10

Section F

Section E

Chelmer Valley Riverside

0 1:50,000 2km

Print Date: 20-06-24 11:02:26

Draft order limits
Project sections
Local Planning Authorities

Proposed project design details

Proposed overhead line alignment
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Confident water vole sighting
Two kits observed going into and out of a tree
Otter desk study records
Otter and water vole ditch ID
Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 9 of 12

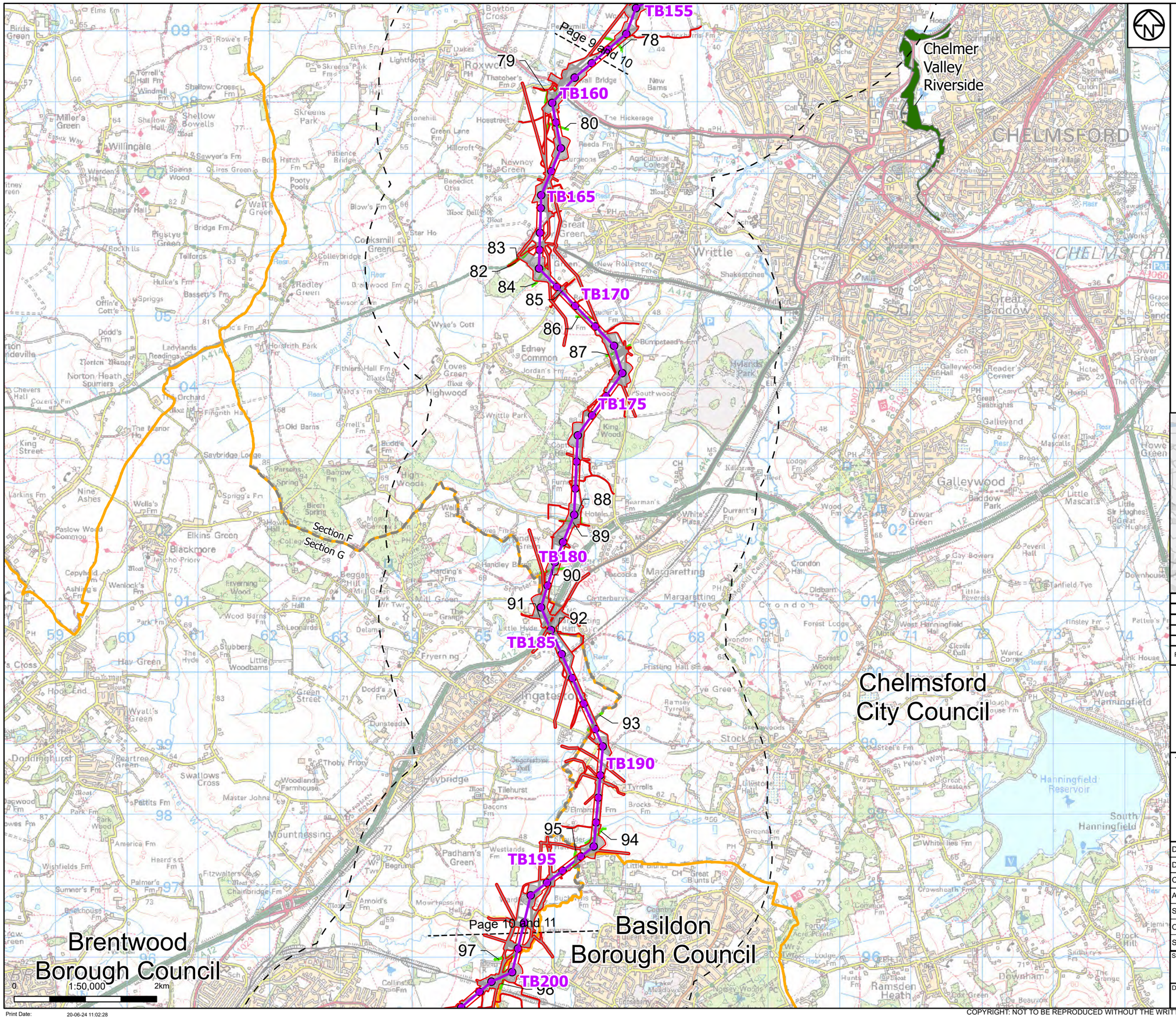
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Draft order limits
Project sections
Local Planning Authorities

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Otter and water vole ditch ID
Local Wildlife Sites

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:
A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 10 of 12

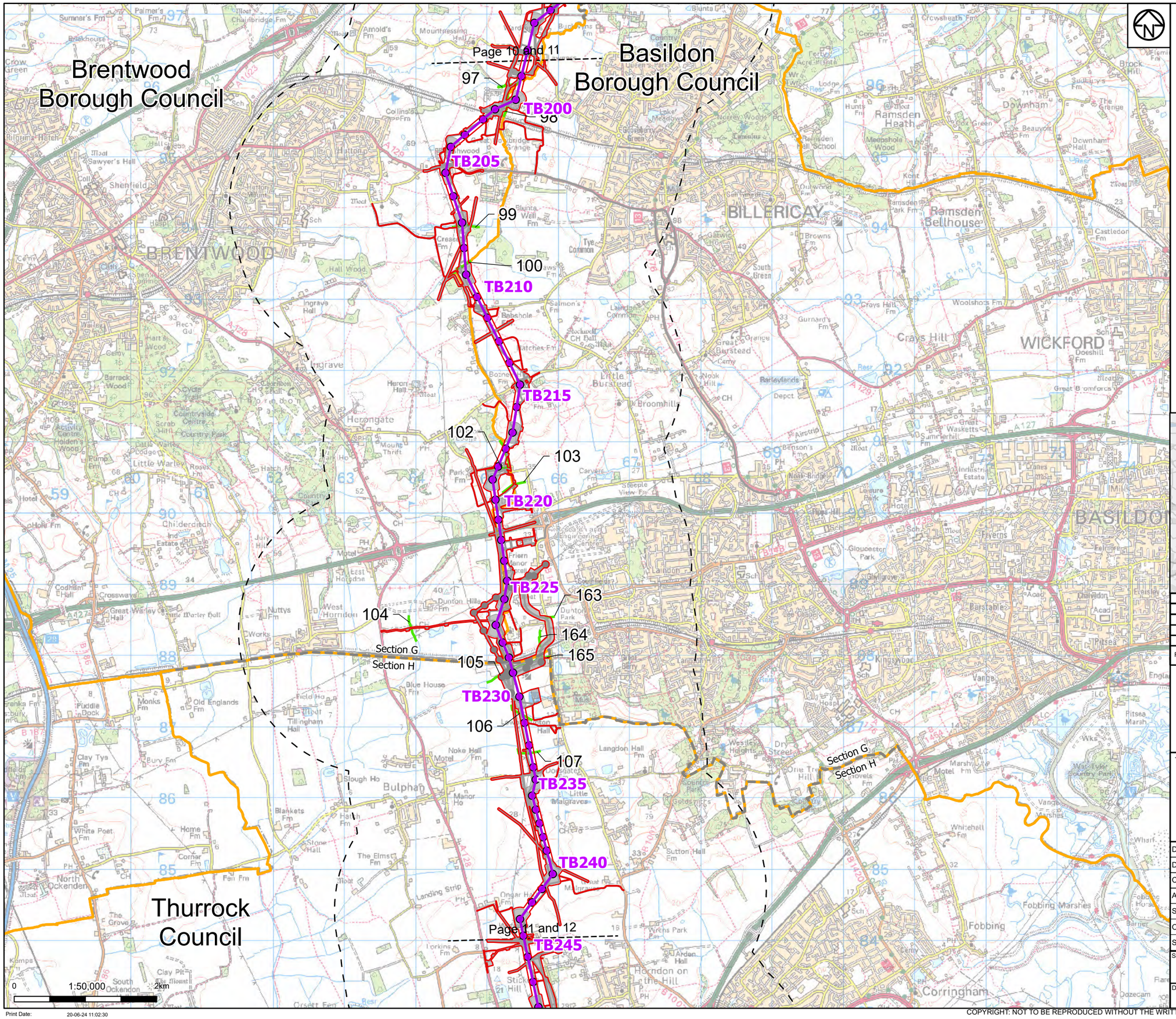
Designed	H. Smith	Date	June 2024
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Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
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Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

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Draft order limits
Project sections
Local Planning Authorities

Proposed project design details

Proposed overhead line alignment
Proposed pylon position
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Otter and water vole ditch ID

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 11 of 12

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
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Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
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Gravesham District Council

TB240

TB245

TB250

TB255

TB260

Page 11 and 12

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166

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168

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110(b)

109(a)

110(a)

112(b)

112(a)

113(a)

114

115(b)

115(a)

170

172

173

Tilbury Substation

Trenchless Crossing: Lower Thames Crossing (west of Tarmac)

Trenchless Crossing: Lower Thames Crossing (Muckingford Road)

Trenchless Crossing: Tilbury Loop Railway and existing overhead lines (NGET and DNO)

0 1:50,000 2km

Print Date: 20-06-24 11:02:33

- Draft order limits
- Project sections
- Local Planning Authorities

Proposed project design details

- Proposed overhead line alignment
- Proposed full line tension gantry
- Proposed pylon position
- Proposed underground cable alignment
- Existing substation
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Otter and water vole ditch ID

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

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A 8.9.1 - Ecology and Biodiversity - Otter and Water Vole Survey Locations and Desk Study Records Page 12 of 12

Designed	H. Smith	Date	June 2024
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Scale:	1:50,000	Datum:	AOD
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Annex B: Otter and Water vole Records from the Local Record Centres.

Table 8.9.3 - Otter and Water vole Records from the Local Record Centres

Species	Date	Grid reference	Local environmental record centre
Otter	2013	TL980319	EFC
Otter	2014	TL715130	EFC
Otter	2014	TL817193	EFC
Otter	2014	TM019290	EFC
Otter	2015	TL92052709	EFC
Otter	2016	TL863194	EFC
Otter	2017	TM000291	EFC
Otter	2018	TL9730027740	EFC
Otter	2020	TM041294	EFC
Otter	2020	TM041294	EFC
Otter	2020	TM057334	EFC
Otter	2013	TM0333935254	NBIS
Otter	2013	TM1249241784	NBIS
Otter	2013	TM125419	NBIS
Otter	2014	TM0323135402	NBIS
Otter	2014	TM043335	NBIS
Otter	2014	TM0478733434	NBIS
Otter	2015	TM039344	NBIS
Otter	2015	TM05783364	NBIS
Otter	2018	TM0579033618	NBIS
Otter	2019	TM034366	NBIS
Otter	2019	TM042345	NBIS
Otter	2019	TM0661136310	NBIS
Otter	2019	TM0782342396	NBIS
Otter	2019	TM11734446	NBIS

Species	Date	Grid reference	Local environmental record centre
Otter	2020	TM04093436	NBIS
Otter	2020	TM04273443	NBIS
Otter	2021	TM0728956842	NBIS
Otter	2021	TM08958003	NBIS
Otter	2021	TM1132247905	NBIS
Otter	2013	TG2203	SBIS
Otter	2015	TM180960	SBIS
Otter	2016	TM152917	SBIS
Otter	2016	TM099795	SBIS
Otter	2016	TG223028	SBIS
Otter	2016	TG196030	SBIS
Otter	2017	TM173964	SBIS
Otter	2017	TM225994	SBIS
Otter	2018	TM21629822	SBIS
Otter	2018	TM21889864	SBIS
Water vole	2015	TL92052709	EFC
Water vole	2013	TM047335	NBIS
Water vole	2013	TM08925522	NBIS
Water vole	2013	TM1132478732	NBIS
Water vole	2013	TM113787	NBIS
Water vole	2014	TM013346	NBIS
Water vole	2014	TM0259034500	NBIS
Water vole	2014	TM0291034780	NBIS
Water vole	2014	TM0312037990	NBIS
Water vole	2014	TM0313537957	NBIS
Water vole	2014	TM0315035010	NBIS
Water vole	2014	TM0318038130	NBIS
Water vole	2014	TM0321038370	NBIS
Water vole	2014	TM0326038210	NBIS

Species	Date	Grid reference	Local environmental record centre
Water vole	2014	TM0350035070	NBIS
Water vole	2014	TM035385	NBIS
Water vole	2014	TM0371034940	NBIS
Water vole	2014	TM0403034350	NBIS
Water vole	2014	TM0420034310	NBIS
Water vole	2014	TM059337	NBIS
Water vole	2014	TM089552	NBIS
Water vole	2014	TM091552	NBIS
Water vole	2014	TM0938855005	NBIS
Water vole	2015	TM05043350	NBIS
Water vole	2015	TM051335	NBIS
Water vole	2015	TM0709057154	NBIS
Water vole	2015	TM08217753	NBIS
Water vole	2015	TM08227754	NBIS
Water vole	2015	TM082775	NBIS
Water vole	2015	TM088552	NBIS
Water vole	2015	TM08885529	NBIS
Water vole	2015	TM090558	NBIS
Water vole	2015	TM0958254658	NBIS
Water vole	2015	TM09625677	NBIS
Water vole	2015	TM09625678	NBIS
Water vole	2015	TM096567	NBIS
Water vole	2015	TM119422	NBIS
Water vole	2015	TM11974220	NBIS
Water vole	2016	TM1137247929	NBIS
Water vole	2016	TM130448	NBIS
Water vole	2017	TM0572947310	NBIS
Water vole	2018	TM07237107	NBIS
Water vole	2018	TM1133247907	NBIS

Species	Date	Grid reference	Local environmental record centre
Water vole	2018	TM1134547924	NBIS
Water vole	2019	TM1004966002	NBIS
Water vole	2020	TM031354	NBIS
Water vole	2020	TM047361	NBIS
Water vole	2020	TM073710	NBIS
Water vole	2020	TM113764	NBIS
Water vole	2020	TM124455	NBIS
Water vole	2021	TM0554	NBIS
Water vole	2014	TM0710080110	SBIS
Water vole	2014	TM0832080110	SBIS
Water vole	2014	TM0837080110	SBIS
Water vole	2014	TM0706080100	SBIS
Water vole	2014	TM0777080160	SBIS
Water vole	2014	TM0860080120	SBIS
Water vole	2014	TM0813080130	SBIS
Water vole	2014	TM0691080040	SBIS
Water vole	2014	TM0743080190	SBIS
Water vole	2014	TM0722080130	SBIS
Water vole	2014	TM0701080080	SBIS
Water vole	2014	TM0695080080	SBIS
Water vole	2014	TM0750080140	SBIS
Water vole	2015	TM2124897968	SBIS
Water vole	2016	TM1438794288	SBIS

Annex C: Otter and Water vole current survey results

Table 8.9.4 - Otter and Water vole current survey results

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
1	A	08/08/23	Sub-optimal Habitat	Sub-optimal Habitat		None	Potential Water vole Burrows and footprints  
2	A	08/08/23	Sub-optimal Habitat	Unsuitable Habitat		None	Considered absent: no further survey required
3	A	08/08/23	Unsuitable Habitat	Sub-optimal Habitat		Considered absent: no further survey required	None

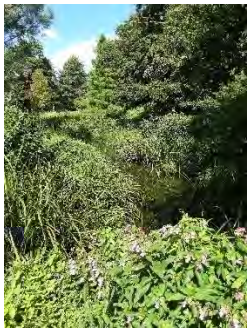
Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
13	A	08/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
14	A	09/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
17	A	09/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required

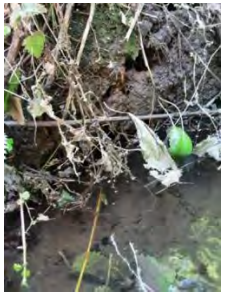
Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
25	B	09/08/23	Suitable Habitat	Suitable Habitat		None	None
26(a)	B	09/08/23	Sub-optimal Habitat	Sub-optimal Habitat		None	None
26(b)	B	09/08/23	No watercourse present	No watercourse present	None	None	None
31	B	26/09/23	Poor habitat	Sub-optimal Habitat		None	Potential feeding station and burrow.  

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
35	B	26/09/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
37	B	26/09/23	Unsuitable Habitat	Sub-optimal Habitat		Considered absent: no further survey required	None
39	C	26/09/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
41 (b)	C	10/08/23	Poor Habitat	Sub-optimal Habitat		Considered absent: no further survey required	None

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
44	C	10/08/23	Unsuitable Habitat	Unsuitable Habitat	N/A	Considered absent: no further survey required	Considered absent: no further survey required
50	D	10/08/23	Unsuitable Habitat	Sub-optimal Habitat	N/A	Considered absent: no further survey required	None
51	D	10/08/23	Sub-optimal Habitat	Unsuitable Habitat	N/A	None	None
52 (a)	D	11/08/23	Suitable Habitat	Suitable Habitat	Same as 52(b)	None	None

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
52 (b)	D	11/08/23	Suitable Habitat	Suitable Habitat		None	Potential water vole burrow and footprint  
52 (c)	D	11/08/23	Suitable Habitat	Suitable Habitat	Same as 52(b)	None	None
53	D	11/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
54	D	26/09/23	Sub-optimal Habitat	Optimal Habitat		Otter path and spraint  	None
62	E	17/08/23	Optimal Habitat	Sub-optimal Habitat		Otter spraint and path/ slide/grooming area. 	None

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
64	E	17/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
68	E	17/08/23	Optimal Habitat	Sub-optimal Habitat		Possible otter path/ slide/grooming area. 	None
69	E	18/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
73	F	28/09/23	Sub-optimal Habitat	Optimal Habitat		None	None
82	F	17/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
83	F	17/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required

Ditch ID	Project Section	Survey Date	Otter Habitat suitability	Water Vole Habitat suitability	Image	Otter Field Signs	Water Vole Field Signs
84	F	17/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
87	F	18/08/23	Sub-optimal Habitat	Sub-optimal Habitat		None	None
88	F	18/08/23	Unsuitable Habitat	Unsuitable Habitat		Considered absent: no further survey required	Considered absent: no further survey required
89	F	18/08/23	Sub-optimal Habitat	Sub-optimal Habitat		None	None

Annex D: Otter and Water vole Incidental Records

Table 8.9.5 - Otter and Water vole Incidental Records

Incidental record	Date of survey	Description of field sign	Image	Latitude	Longitude
I1	26/04/2023	Possible water vole burrow		52.04806783	1.07419684
I2	02/05/2023	Possible otter holt		52.01371594	1.02591178

Incidental record	Date of survey	Description of field sign	Image	Latitude	Longitude
I3	18/05/2023	Possible water vole burrow		52.53248489	1.20583009
I4	26/09/2023	Potential otter slide	None	51.92740301	0.82842369
I5	15/11/2023	Confident water vole sighting	None	51.800795	0.488478
I6	21/11/2023	Potential otter holt	None	51.928806	0.829693
I7	22/11/2023	Potential otter holt	None	51.928071	0.829039
I8	22/11/2023	Two kits observed going into and out of a tree	None	51.8242574	0.5378218

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Appendix 8.10: Species of Principal Importance Report

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The Great Grid Upgrade

Norwich to Tilbury

Norwich to Tilbury

Preliminary Environmental Information Report - Volume III

Appendix 8.10: Species of Principal Importance Report

April 2024

nationalgrid

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Annex A: Figures

1. Introduction

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1. Introduction

1.1 Project Background

1.1.1 This report has been produced as an appendix to Chapter 8: Ecology and Biodiversity in Volume I, for the Norwich to Tilbury Project (referred to as 'the Project').

1.1.2 The Project (formerly known as East Anglia Green Energy Enablement ((GREEN)) would facilitate the transfer of power from the East Anglia region to the rest of National Electricity Transmission System (NETS) thereby enabling connection of offshore wind generation, nuclear power generation and interconnectors which are expected into East Anglia by 2035.

1.1.3 As described in Chapter 1: Introduction in Volume I, the Project has been broken down into eight sections based largely on local authority boundaries. The eight sections are described below and referred to throughout this report:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council
- Section H: Thurrock Council

1.1.4 Further details of the Project are included within Chapter 4: Project Description in Volume I.

1.2 Ecological Background

1.2.1 Almost 1000 species are listed under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006) as Species of Principal Importance (SPI) that are of nature conservation concern. Many of these are unlikely to be affected by the Project as they do not occur in the part of the UK where the Project is located or habitats that are suitable for these species are not present within the draft Order Limits or the Zone of Influence for the Project. For example, due to the Project's location no effects on marine species are anticipated.

1.2.2 Targeted surveys for several SPI have been undertaken to inform the PEIR with further surveys proposed to inform the Environmental Statement. Appendices 8.1 to 8.9 within Volume III of the PEIR outline the survey methodologies for species and species groups that include SPI. It is proposed that surveys will be undertaken to provide a baseline for aquatic ecology, and this will include SPI flora and fauna.

1.3 Brief and Objectives

1.3.1 The purpose of this report is to identify SPI that will require consideration in the Environmental Statement that are not identified as potential biodiversity receptors in Appendix 8.1 to Appendix 8.9 within Volume III of the PEIR and are not aquatic species that will be covered by aquatic ecology surveys.

1.3.2 A baseline for SPI has been established through a desk study exercise. The objectives were to:

- Identify which SPI have the potential to be affected by the Project
- Identify the SPI that have not been considered as part of the ecological surveys that have taken place or are scheduled to take place
- Identify whether the SPI, which have been identified for further consideration, have been recorded or are likely to occur within 2 km of the draft Order Limits
- Identify the requirement for any additional survey or assessment to be completed and the proposed timescales

1.3.3 The results of this sifting exercise have been included within this report. The impact assessment and mitigation will be included within the Ecology and Biodiversity Chapter of the Environmental Statement.

2. Relevant Legislation and Policy

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2. Relevant Legislation and Policy

2.1.1 Surveys and assessments have been undertaken in accordance with current legislation and planning policy in the context of the Project. A summary of the relevant legislation and policy is provided below.

2.2 Legal Compliance

2.2.1 The following legislation (Table A8.10.1) has been considered with regard to the methodology for SPI assessment included within this report.

Table A8.10.1 - Legal Compliance

Legislation	Details
Conservation of Habitats and Species Regulations 2017 ('Habitats Regulations') (HMSO, 2019)	The Regulations require authorities on behalf of the Secretary of State to maintain a list of sites which are important for either habitats or species Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)) and to provide protection for these sites through designation, planning, and other controls. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities (Natural England for this Project). Licenses may be granted for several purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the favourable conservation status of the species concerned.
The Wildlife and Countryside Act 1981, as amended (WCA) (HMSO, 1981)	The Act is the main mechanism for legislative protection of wildlife in England. It gives protection to native species (particularly threatened species), their resting places and places of shelter by making it an offence to kill, injure, take, damage, destroy, sell, or possess them (with exceptions). Under the Act all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection for birds is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young during the breeding season. Under the Act, Brown hare (*Lepus europaeus*) are protected from killing during their close season from 1 February to 30 September. Hedgehog (*Erinaceus europaeus*), polecat (*Mustela putorius*) and shrews (of any species) may not be taken or killed by certain methods. Stoat (*Mustela erminea*) may not be taken or killed by trapping or snaring.

Legislation	Details
The Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006)	The NERC Act 2006 places a duty upon public bodies in England to maintain Section 41 (S41) lists of flora, fauna, and habitats and to consider these ecological features as a material consideration in planning. It also requires decision-makers to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

2.3 Planning Policy

2.3.1 Chapter 8: Ecology and Biodiversity in Volume I provides further details of relevant planning policy.

3. Methodology

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3. Methodology

3.1 Desk Study

3.1.1 A desk study was completed as outlined below in September 2023 and subsequently in January 2024 following a design change.

3.1.2 A sifting exercise was carried out to identify the species listed under the NERC Act (HSMO, 2006) that may need to be considered for potential effects because of the Project. The scoping exercise was based on the following factors:

- Whether the species was already subject to detailed targeted surveys within the Project
- Distribution of species in England
- Whether suitable habitats are present within the draft Order Limits and the 2 km study area based on:
  - Habitat data using aerial imagery from Google Earth and APEM aerial imagery (2022)
  - Multi-agency Geographic Information for the Countryside (MAGIC) (2022)
  - Ordnance Survey (OS) maps (2022)
  - Habitat data obtained from the habitat surveys undertaken to inform the Project impact assessment
  - Species records from the Desk Study
  - Incidental records from habitat and/or species surveys undertaken across the Project

3.1.3 Data has been requested from local environmental record centres (LERCs) to provide information on SPI:

- Norfolk Biodiversity Information Service (NBIS, 2022)
- Suffolk Biodiversity Information Service (SBIS, 2022)
- Essex Field Club (EFC, 2022)

3.1.4 Only records within the last 10 years were included in the data search in accordance with standard practice.

3.2 Surveys

3.2.1 The targeted surveys that are planned for the Project whose methodologies are outlined in Appendices 8.1 to 8.9, in Volume III of the PEIR, plus the surveys for aquatic species will reveal whether SPI species are present within the draft Order Limits.

3.2.2 Records of, and incidental records of, SPI will be recorded during the following surveys:

- Biodiversity Net Gain (BNG) Habitat Condition Assessment

- Modular river survey
- Hedgerows Regulations Assessment
- Invasive plants survey
- National Vegetation Classification (NVC) survey
- Ancient and veteran trees survey
- Aquatic macrophytes survey
- Terrestrial and aquatic invertebrate survey
- White-clawed crayfish (*Austropotamobius pallipes*) survey
- Fish survey
- Reptile survey
- Breeding bird survey
- Wintering bird survey
- Bats – roosting survey
- Bats – activity survey
- Otter (*Lutra lutra*) survey
- Water vole (*Arvicola amphibius*) survey
- Hazel dormouse (*Muscardinus avellanarius*) survey

3.2.3 All surveyors have been informed to record SPI during all ecology and biodiversity surveys. The methodologies for these surveys, where determined are detailed in Chapter 8: Ecology and Biodiversity in Volume I and in Appendices 8.1 to 8.9 in Volume III. Survey details for aquatic species have not been determined to date and will be informed by a scoping survey and desk study in early 2024.

3.3 Dates of Survey and Personnel

3.3.1 Details for the various field surveys for habitats and species can be found in the relevant survey methodologies covered in Appendices 8.1 to 8.9 in Volume III.

3.4 Notes and Limitations

3.4.1 This report provides a view of the SPI occurring within the draft Order Limits and the 2 km study area based on a review of incidental and local records.

3.4.2 Records held by LERC are collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage. The data collection is not exhaustive and can be biased towards areas with public access or where surveys have taken place to inform other development projects. It is therefore possible that there are SPI present within/adjacent to the draft Order Limits that are not identified during the data searches.

3.4.3 There may be some bias towards the species that are recorded as some of the SPI may be harder to detect due to the nature of their ecology (for example, crepuscular species)

or their general behaviour (quiet and more secretive). Therefore, some species may have fewer records due to the difficulty in observing them.

3.4.4 LERC data relies on contributions from multiple sources, including citizen scientists, volunteers, and professionals. This can result in variations in data quality and accuracy. Errors in species identification, misinterpretation of data, or inconsistent sampling methodologies can affect the reliability of the data.

3.4.5 LERC data may not always be regularly updated or maintained, leading to potential gaps in recent data or changes in ecological conditions. This can limit the accuracy and relevance of the data.

3.4.6 Undertaking a suite of targeted surveys across the Project and across the seasons should ensure that a robust data set is collected to inform the final impact assessment within the ES.

4. Results

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4. Results

4.1 Overview

4.1.1 This section shows the results of the SPI assessment using findings from the desk study as well as the habitat and/or species surveys undertaken across the Project.

4.1.2 Only data gathered between September 2022 and September 2023 has been included within this report, to allow enough time for the processing of results. Desk study results for the five species identified in this report following the scoping exercise are presented on **Figure A8.10.1**: SPI records within 2 km of draft Order Limits, in Annex A. Further desk-based data and survey results obtained beyond September 2023 shall be reported within the ES.

4.2 Desk Study

4.2.1 The results from the desk study and initial sifting exercise can be found in Table A8.10.2. The species groups detailed in this report are those that have the potential to be present within the draft Order Limits and have not been considered elsewhere in the assessment process.

Table A8.10.2 - SPI Sifting Exercise Results

Taxon Group	Species taken forward in this report	Reason
Algae	None	All alga species listed under the NERC Act (HSMO, 2006) are marine are not considered further as they are associated with marine waters that are outside the Zone of Influence of the Project.
Amphibian	Common toad	Amphibian species listed under the NERC Act (HSMO, 2006) are: - Common toad (*Bufo bufo*) - Great crested newt (*Triturus cristatus*) - Pool frog - Natterjack toad (*Epidalea calamita*) Great crested newt is covered by district licensing and will be assessed by Natural England via an impact assessment that will be presented in the future Environmental Statement. Natterjack toad not taken forward due to its isolated distribution in the UK which is outside the draft Order Limits and the 2 km study area. Pool frog (*Pelophylax lessonae*) is not taken forward on the basis it is found in locations where it has been re-introduced and has a very restricted distribution in the UK.

Taxon Group	Species taken forward in this report	Reason
		Common toad taken forward as suitable habitats such as ponds, woodland and rough grassland are present within the draft Order Limits.
Birds	See Appendix 8.4: Breeding Bird Report and Appendix 8.5: Wintering/ Passage Birds Report in Volume III of the PEIR	Bird species listed under the NERC Act (HSMO, 2006) are assessed in separate technical appendix.
Fish	Species to be confirmed following further desk study and consultation	Will be considered as part of the environmental assessment.
Fungi	See Appendix 8.1: Habitat Report in Volume III of the PEIR	As reported in Appendix 8.1 there are records for sandy stilt puffball *Battarrea phalloides* a fungus listed under the NERC Act (HSMO, 2006) within the wider 2 km study area. Further consideration will be given to this species as part of the habitat assessment in the Environmental Statement.
Invertebrates	See Appendix 8.2: Terrestrial Invertebrate Report in Volume III of the PEIR	Terrestrial invertebrate species listed under the NERC Act (HSMO, 2006) are considered in a separate technical appendix. An Aquatic Ecology Report will be produced as part of the Environmental Statement, this will include consideration of aquatic invertebrates.
Mammals	See Appendix 8.6: Bat Roosting Report and Appendix 8.7: Bat Activity Report in Volume III of the PEIR	All bat species listed the NERC Act (HSMO, 2006) are assessed in separate technical appendices.
	See Appendix 8.8: Hazel Dormouse Report in Volume III of the PEIR	Hazel dormouse (*Muscardinus avellanarius*) is considered in a separate technical appendix.
	See Appendix 8.9: Otter and Water Vole Report in Volume III of the PEIR	Otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) are considered in a separate technical appendix.
	Brown hare, harvest mouse, hedgehog, polecat	Brown hare, harvest mouse (*Micromys minutus*), hedgehog and polecat taken forward as suitable habitats such as woodland and rough grassland are present within the draft Order Limits. Other mammal species listed under the NERC Act include mountain hare (*Lepus timidus*), pine marten (*Martes martes*), common seal (*Phoca vitulina*) and red squirrel (*Sciurus vulgaris*) are scoped out due to their known isolated distribution in the UK which are

Taxon Group	Species taken forward in this report	Reason
		outside the draft Order Limits and the 2 km study area.
Plants	See Appendix 8.1: Habitat Report in Volume III of the PEIR	Terrestrial plant species listed under the NERC Act (HSMO, 2006) are considered in a separate technical appendix. An Aquatic Ecology Report will be produced as part of the ES.
Reptiles	See Appendix 8.3: Reptile Report in Volume III of the PEIR	All reptile species listed under the NERC Act (HSMO, 2006) are considered in a separate technical appendix.
Sharks/ Skates/ Rays	None	All shark/skate/ray species listed under the NERC Act (HSMO, 2006) are not considered further as they are associated with marine waters that are outside the Zone of Influence of the Project
Turtles	None	All turtle species listed under the NERC Act (HSMO, 2006) are not considered further as they are associated with marine waters that are outside the Zone of Influence of the Project.

4.2.2 The list of species identified for consideration in this report are as follows:

- Common toad
- Brown hare
- Harvest Mouse
- Hedgehog
- Polecat

4.2.3 Further information regarding these five species is presented below.

4.2.4 From the desk study, a total of 29 records of the five SPI were found to be within the draft Order Limits with another 1164 records found to be within the study area. These are identified on Table A8.10.3 and presented on Figure A8.10.1: SPI records within 2 km of draft Order Limits in Annex A.

Table A8.10.3 - Desk Study Results

Species	No. of records within draft Order Limits	No. of records within 2 km of draft Order Limits	Project Section(s)
Brown hare	9	84	Section B, Section C, Section E, Section F, Section G, Section H
Common toad	2	37	Section B, Section E, Section F, Section G, Section H

Species	No. of records within draft Order Limits	No. of records within 2 km of draft Order Limits	Project Section(s)
Harvest mouse	1	4	Section B, Section C, Section F, Section H
Hedgehog	16	1022	Section A, Section B, Section C, Section D, Section E, Section F, Section G, Section H
Polecat	1	17	Section A, Section B, Section C, Section D, Section E, Section F

Common Toad

4.2.5 Common toad is a widespread species found throughout mainland Britain. It requires deep waterbodies (ponds, lakes, gravel pits etc) during the breeding season in spring. After the breeding period (usually a week), the adults spend the rest of the year in terrestrial habitats including woodland, hedgerows and rough grassland that can be up to 2 km from the main breeding pond.

4.2.6 There are aquatic habitats (ponds) and suitable terrestrial habitats (woodland, hedgerows, and rough grassland) within the draft Order Limits.

4.2.7 Also, the desk study identified two records within the draft Order Limits with another 37 records within 2 km of the draft Order Limits in Project Section B, C, E, F, G and H.

4.2.8 It is highly likely that common toad is present within the draft Order Limits in suitable habitat.

Brown Hare

4.2.9 Brown hare is a widespread species in the UK, predominantly found in low-lying areas. Suitable habitats are woodland edge, hedgerows, rough grassland, and arable fields which are used for resting, foraging, hibernation as well as breeding.

4.2.10 Arable fields, rough grassland, hedgerows, and woodland edge are present within the draft Order Limits, with good connectivity between the habitats.

4.2.11 The desk study identified nine records within the draft Order Limits with another 84 records within 2 km of the draft Order Limits in Project Sections B, C, E, F and G.

4.2.12 It is highly likely that brown hare is present within the draft Order Limits.

Harvest Mouse

4.2.13 Harvest Mouse is found in tall grassland, reeds, arable land, and hedgerows. These habitats are present within the draft Order Limits with good connectivity between them.

4.2.14 The desk study identified one records within the draft Order Limits with another four records within 2 km of the draft Order Limits in Project Sections B, C, F and H.

4.2.15 It is highly likely that harvest mouse is present within the draft Order Limits.

Hedgehog

4.2.16 Hedgehog (also known as Western European Hedgehog) is a widespread species in the UK. Suitable habitats are woodland edge, hedgerows, and rough grassland, which is used for resting, foraging, hibernation as well as breeding.

4.2.17 There are rough grasslands, hedgerows, and woodland edge within the draft Order Limits with good connectivity between these habitats.

4.2.18 The desk study identified 16 records within the draft Order Limits with another 1,022 records within 2 km of the draft Order Limits in all Sections of the Project.

4.2.19 It is highly likely that hedgehog is present within the draft Order Limits.

Polecat

4.2.20 Polecat is a solitary animal associated with lowland arable habitats, interspersed with rough grassland, hedgerows, and woodland edge. These habitats are present with good connectivity within the draft Order Limits.

4.2.21 The desk study identified one record within the draft Order Limits and 17 records within 2 km of the draft Order Limits in Project Sections A, B, C, D, E and F.

4.2.22 It is likely that polecat is present at very low densities within the draft Order Limits.

4.3 Survey results

4.3.1 Of the five SPI species listed above, two species brown hare and harvest mouse have been recorded within the draft Order Limits. There were nine records of brown hare from surveys conducted between September 2022 and October 2023. A harvest mouse nest was found during the November Dormouse survey. Surveys will continue through the 2024 survey season, with full results being reported within the ES.

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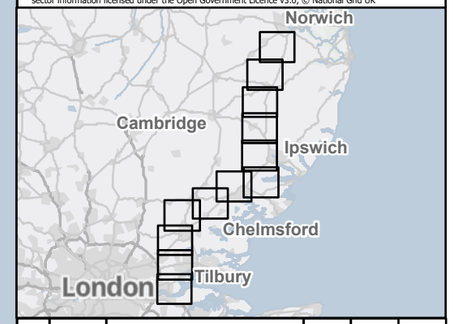
HSMO (2023). *The National Planning Policy Framework (NPPF)*.

Annex A: Figures

Figure A8.10.1 SPI records within 2 km of draft Order Limits

Pages

Note: This figure has been revised. This does not affect the preliminary assessment in the PEIR. For more details we refer you to the Errata and Corrections Log (June 2024) on the Project website



Rev	Date	Description	Drawn	Check	Approv
B	June 2024	FOR STATUTORY CONSULTATION	KF	AF	KB
A	April 2024	FOR STATUTORY CONSULTATION	SB	AF	KB

nationalgrid

PROJECT:
Norwich to Tilbury

Title:
Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits Overview

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:500,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description:
Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00146

Revision: B

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0 1:500,000 20 km

Print Date: 20-06-24 10:59:00

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Proposed substation extension

Norwich Main Substation

RG001

RG005

RG010

RG015

RG020

RG025

RG030

RG035

RG040

RG045

Page 1 and 2

0 1:50,000 2 km

Print Date: 20-06-24 10:59:06

Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed pylon position

Existing substation

Proposed substation extension

Proposed environmental areas

Other temporary and permanent construction and operational works

Discipline specific constraints

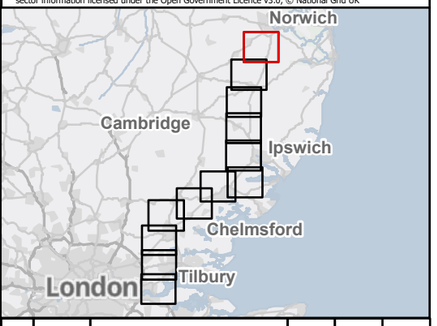
2km Study Area

Hedgehog

Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 1 of 12

Designed	H. Smith	Date	June 2024
Drawn	K. Fischer	Date	June 2024
Checked	A. Fell	Date	June 2024
Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

Drawing Number: 10059280-ARC-EGN-ZZ-DR-ZZ-00146

Revision: B

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Page 1 and 2

RG050

RG055

RG060

RG065

RG070

RG075

Waveney Valley Overhead Line

RG080

RG085

RG090

Section A

Section B

Page 2 and 3

0 1:50,000 2 km

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Brown Hare

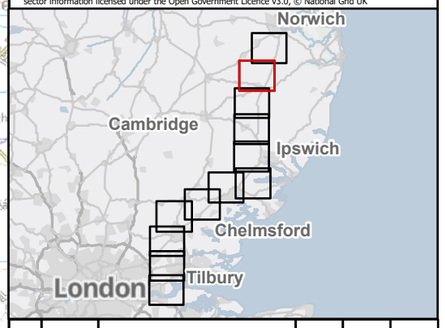
Harvest Mouse

Hedgehog

Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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A	April 2024	FOR STATUTORY CONSULTATION	SB	AF	KB

nationalgrid

PROJECT: Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 2 of 12

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Drawn	K. Fischer	Date	June 2024
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Approved	K. Burrows	Date	June 2024
Scale:	1:50,000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	A2	Project Number:	10059280

Suitability Description: Accepted as Concept Stage

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Revision: B

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RG060
RG065
RG070
RG075
RG080
RG85
RG90
RG095
RG100
RG105
RG110
Waveney Valley Alternative
Trenchless Crossing: Waveney Valley Alternative (south channel)
Trenchless Crossing: Waveney Valley Alternative (north channel)
Section A
Section B

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Draft order limits
Project sections

Proposed project design details

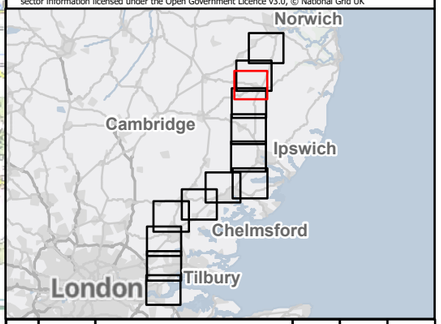
Proposed overhead line alignment
Proposed full line tension gantry
Proposed low duty gantry
Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Brown Hare
Harvest Mouse
Hedgehog
Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits

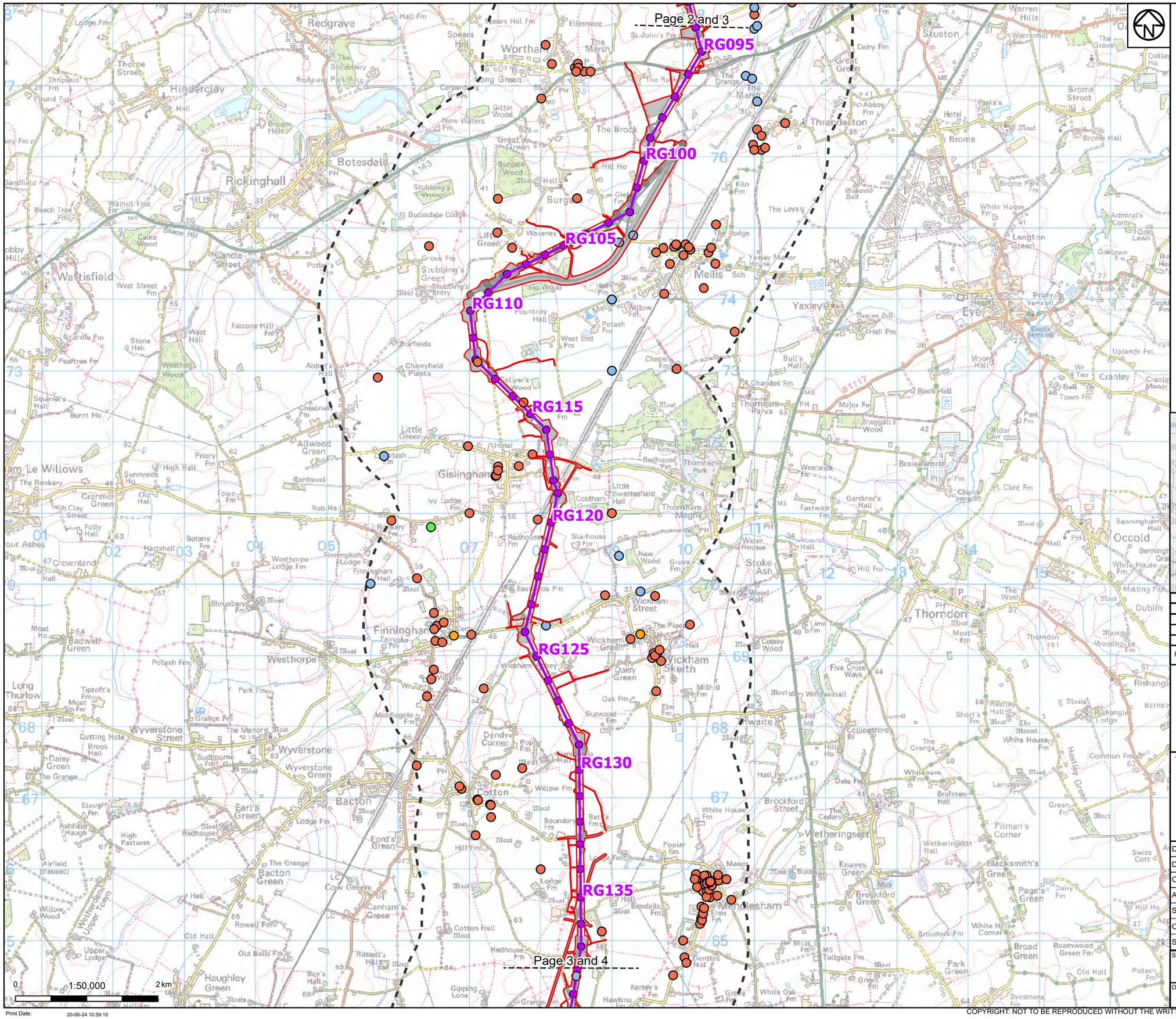
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Approved	K. Burrows	Date	June 2024
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Suitability Description: Accepted as Concept Stage

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Common Toad

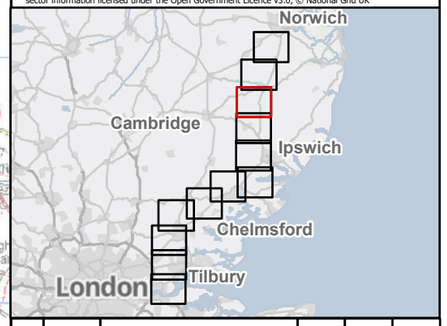
Brown Hare

Harvest Mouse

Hedgehog

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 3 of 12

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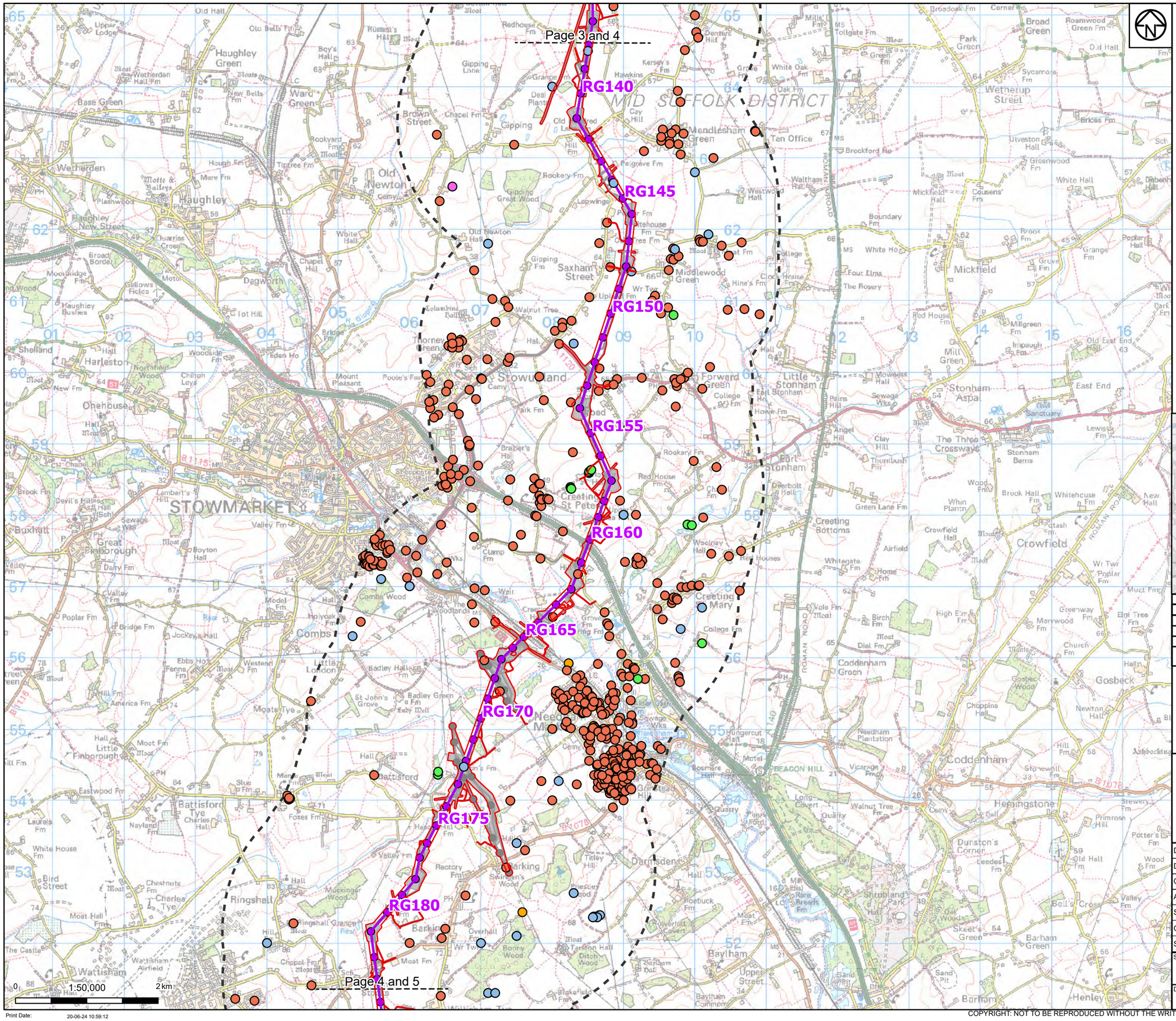
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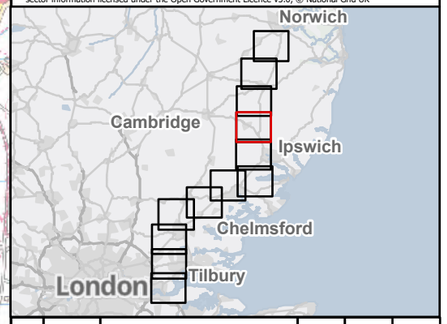
- Proposed overhead line alignment
- Proposed pylon position
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Common Toad
- Brown Hare
- Harvest Mouse
- Hedgehog
- Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 4 of 12

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Page 4 and 5

RG185

RG190

RG195

RG200

RG205

RG210

JC001

JC005

JC010

JC015

JC020

JC025

JC030

Bramford Substation

Proposed substation extension

Section B

Section C

Page 5 and 6

0 1:50,000 2 km

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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed full line tension gantry

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Existing substation

Proposed substation extension

Proposed cable sealing end compound

Proposed environmental areas

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Common Toad

Brown Hare

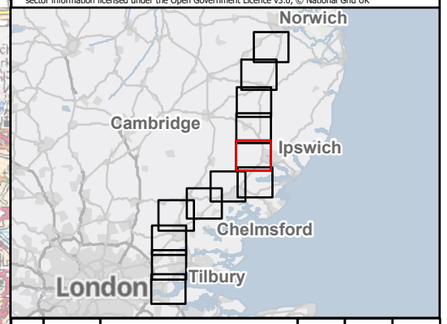
Harvest Mouse

Hedgehog

Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

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Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 5 of 12

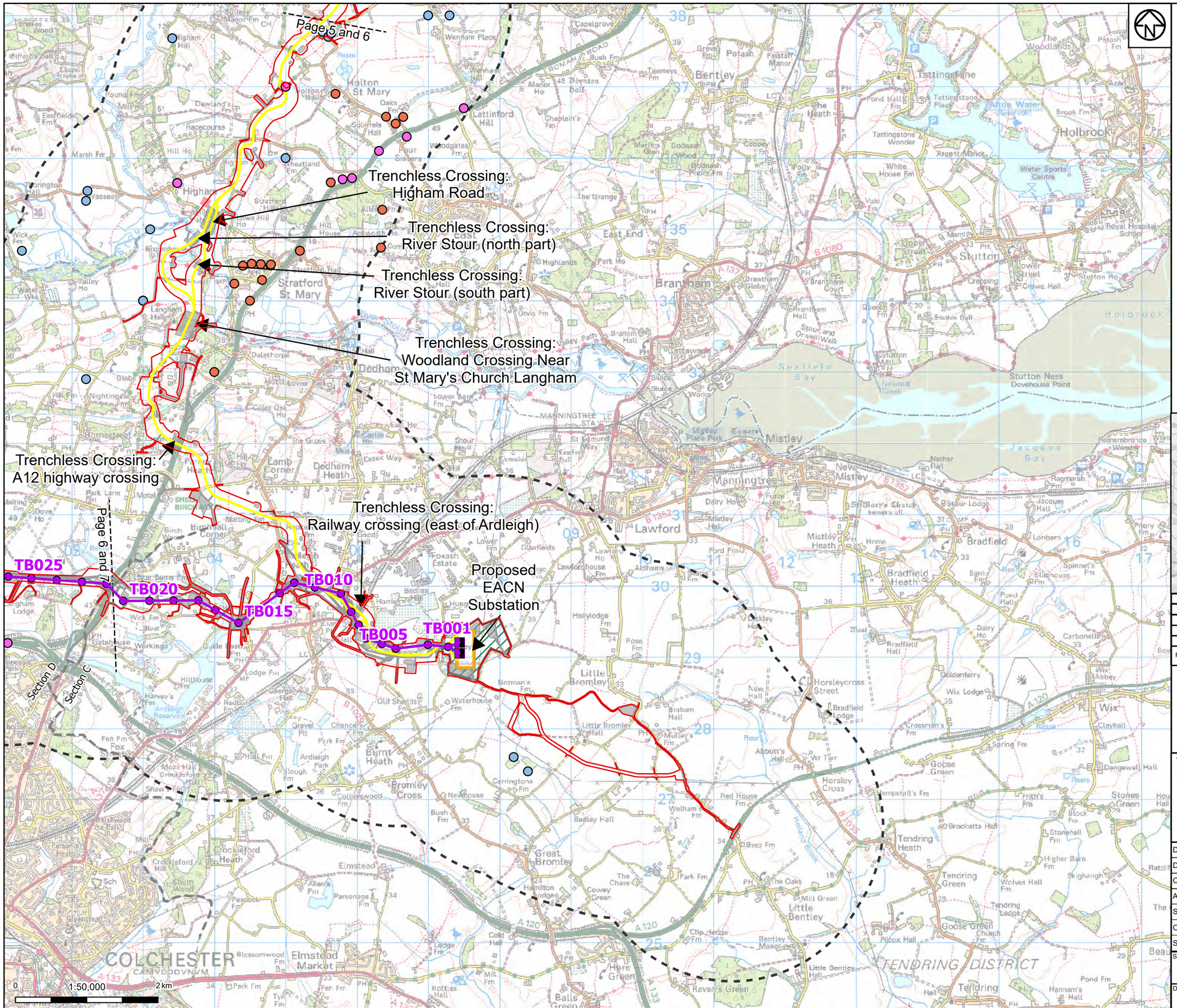
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Suitability Description: Accepted as Concept Stage

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Draft order limits
Project sections

Proposed project design details

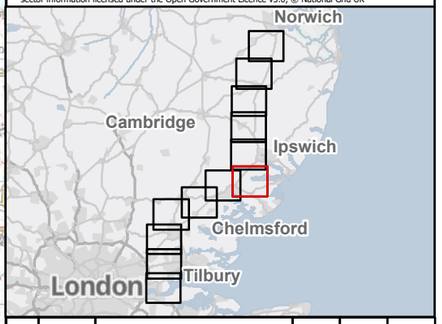
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Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
Proposed EACN substation
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Brown Hare
Hedgehog
Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT: Norwich to Tilbury

Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits

Page 6 of 12

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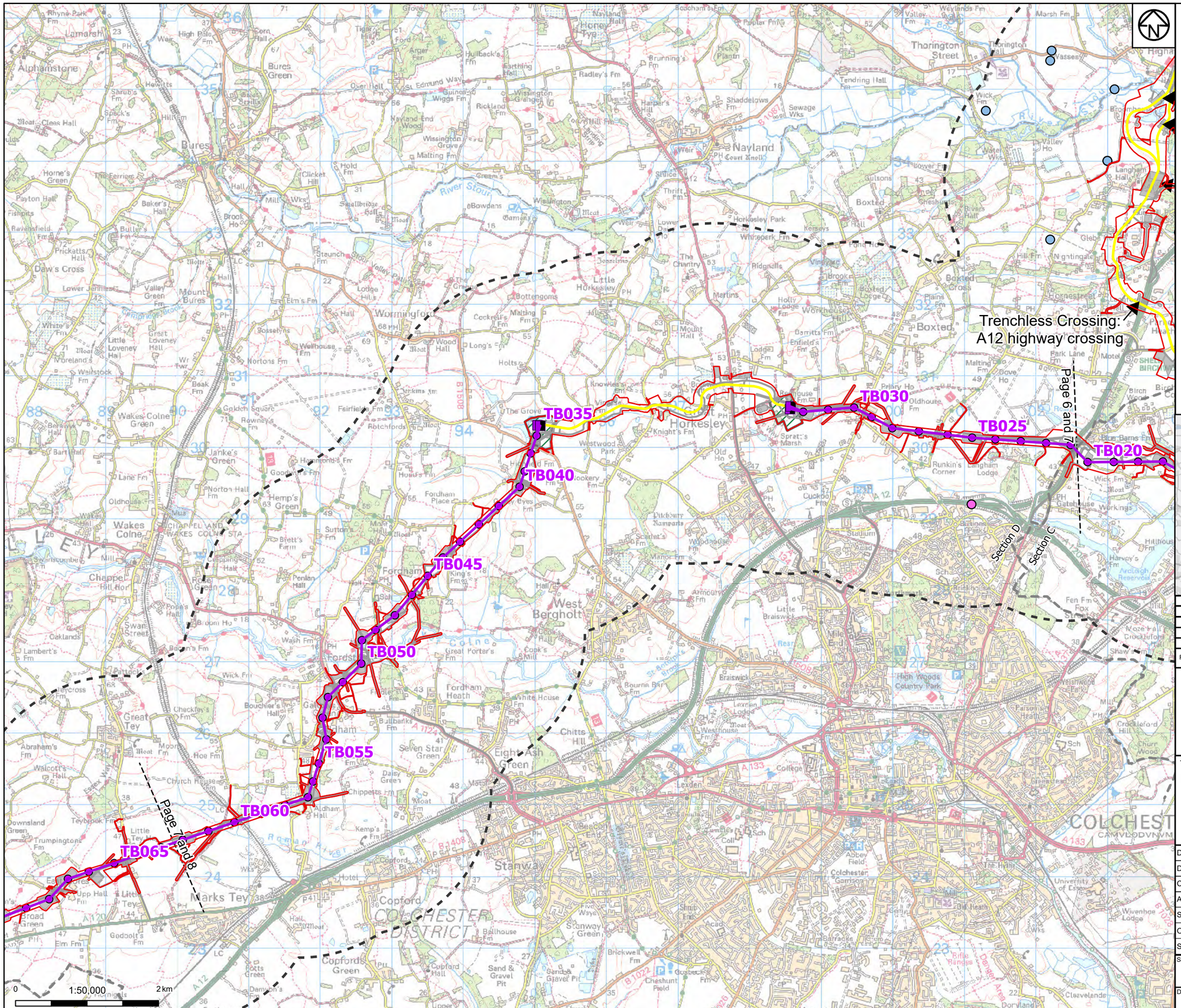
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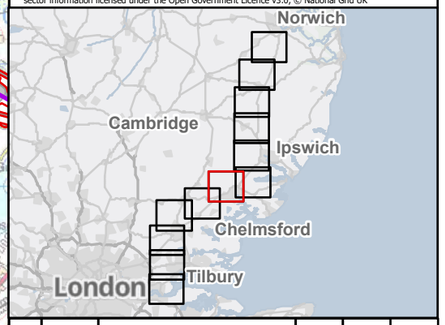
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Proposed pylon position
Proposed underground cable alignment
Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Brown Hare
Hedgehog
Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Norwich to Tilbury

Title:
Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 7 of 12

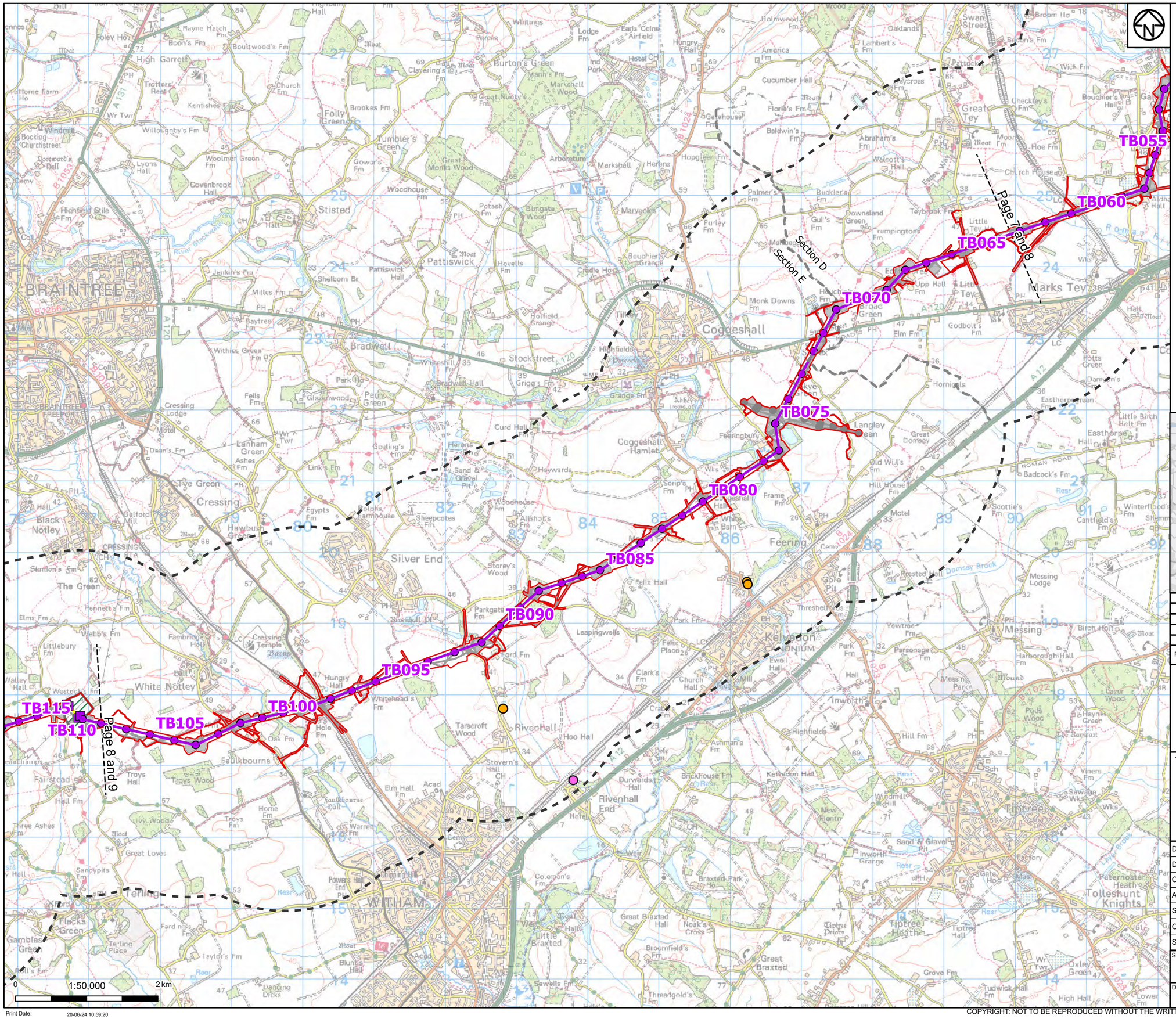
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- Draft order limits
- Project sections

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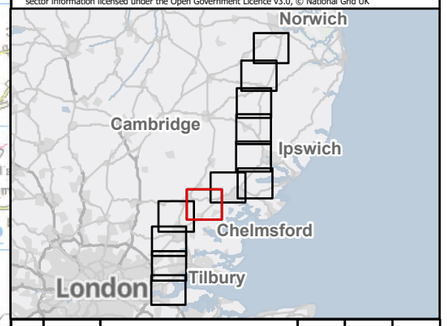
- Proposed overhead line alignment
- Proposed low duty gantry
- Proposed pylon position
- Proposed underground cable alignment
- Proposed cable sealing end compound
- Proposed environmental areas
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Common Toad
- Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
Page 8 of 12

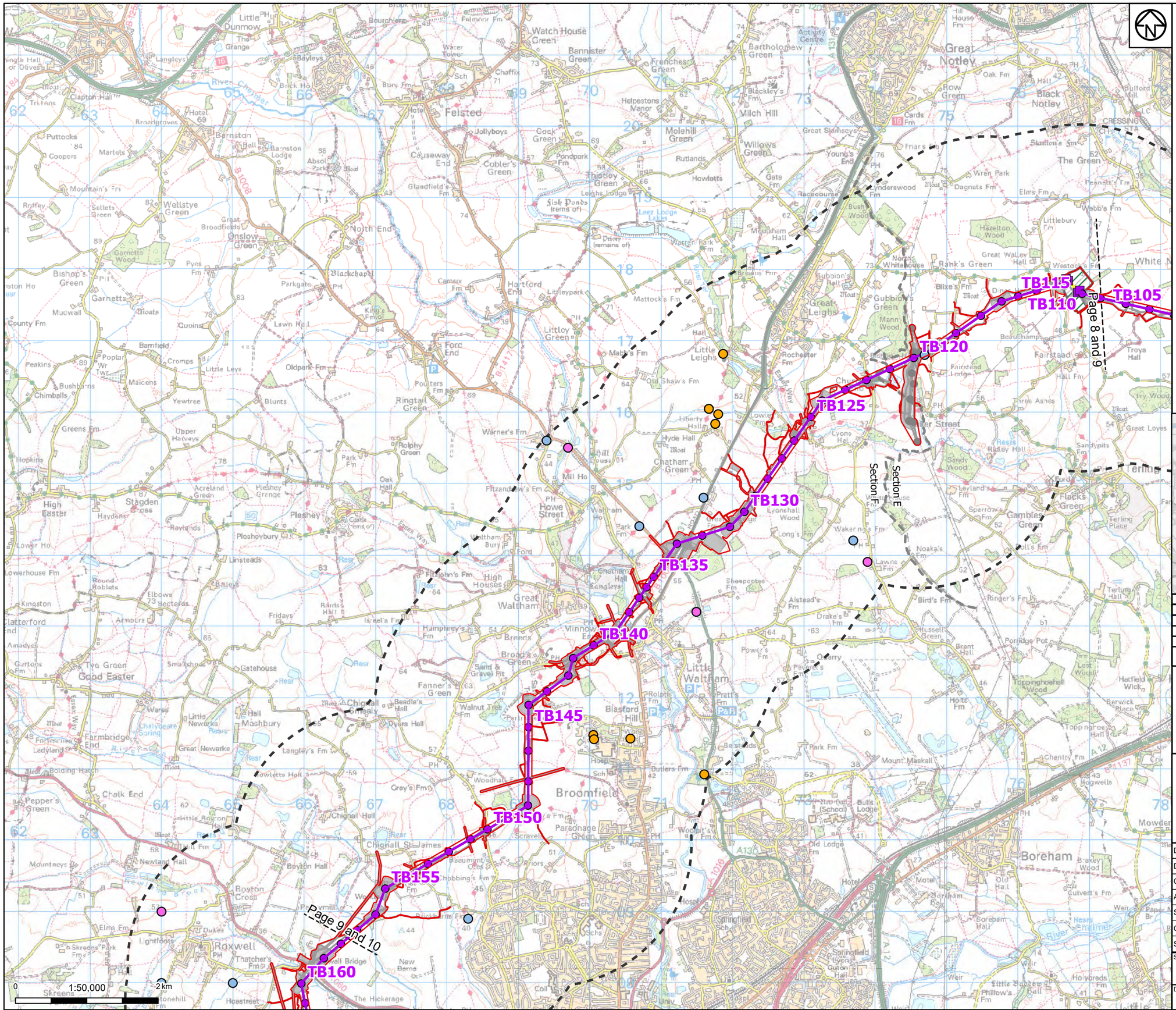
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed low duty gantry

Proposed pylon position

Proposed underground cable alignment

Proposed cable sealing end compound

Proposed environmental areas

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

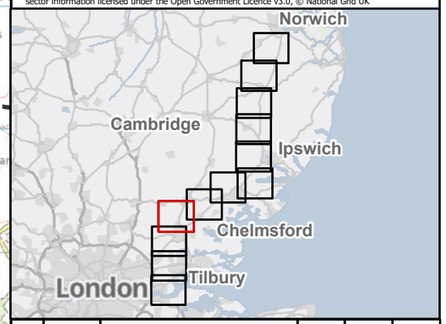
Common Toad

Brown Hare

Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits
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TB190
TB195
TB200
Page 9 and 10
Page 10 and 11
Section F
Section G
CHELMSFORD
Roxwell
Writtle
Great Baddow
Galleywood
Margaretting
Ingatestone
Mountnessing
Highwood
Blackmore
Hanningfield Reservoir
BRENTWOOD DISTRICT
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1:50,000
2 km

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- Draft order limits
- Project sections

Proposed project design details

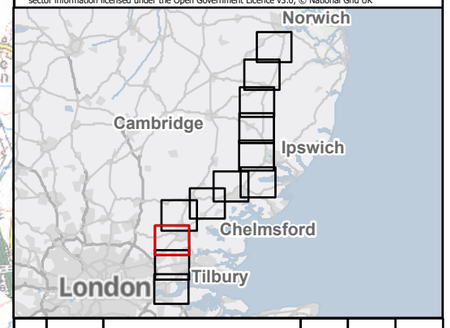
- Proposed overhead line alignment
- Proposed pylon position
- Other temporary and permanent construction and operational works

Discipline specific constraints

- 2km Study Area
- Common Toad
- Brown Hare
- Harvest Mouse
- Polecat

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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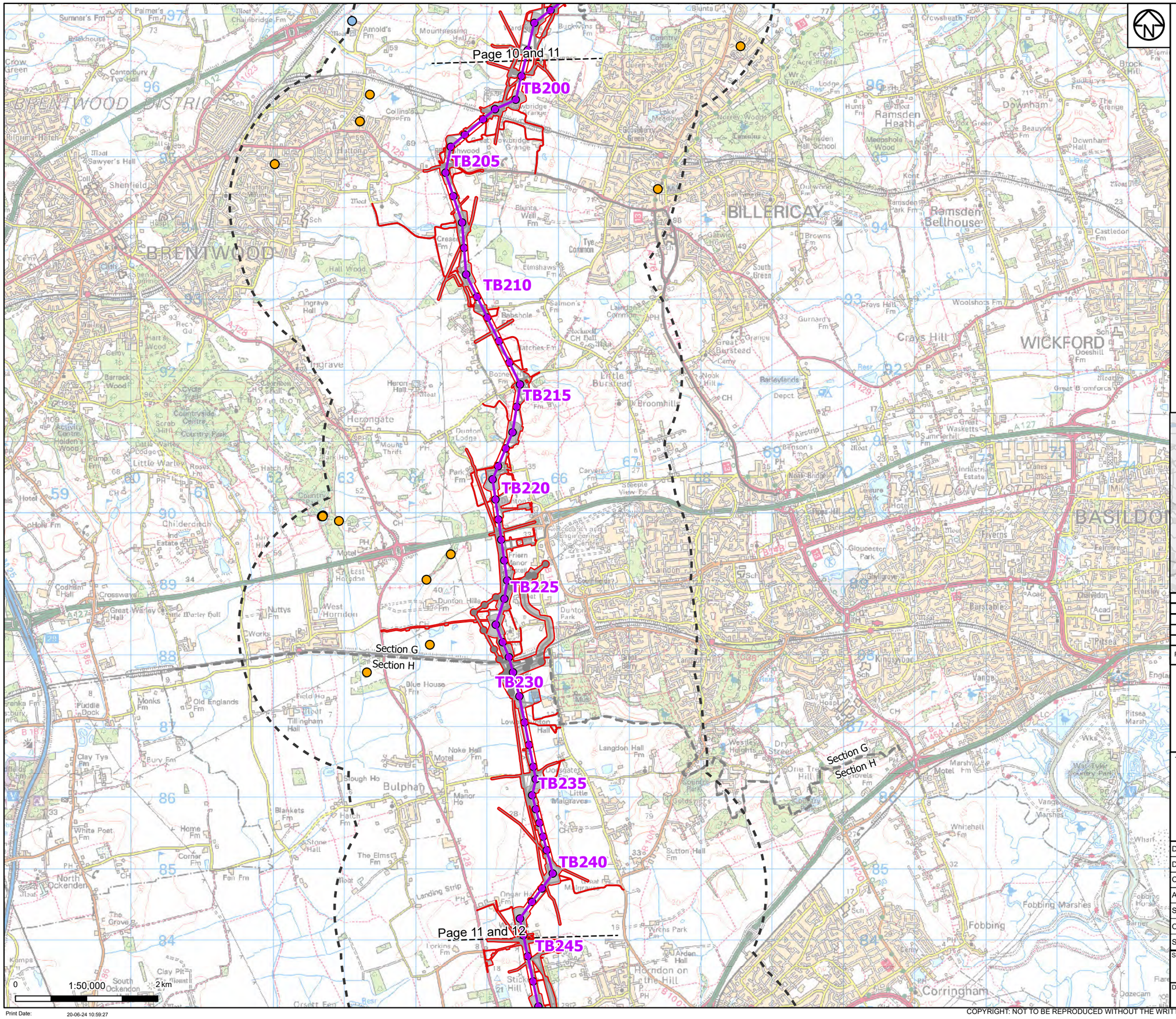
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Draft order limits

Project sections

Proposed project design details

Proposed overhead line alignment

Proposed pylon position

Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area

Common Toad

Brown Hare

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits Page 11 of 12

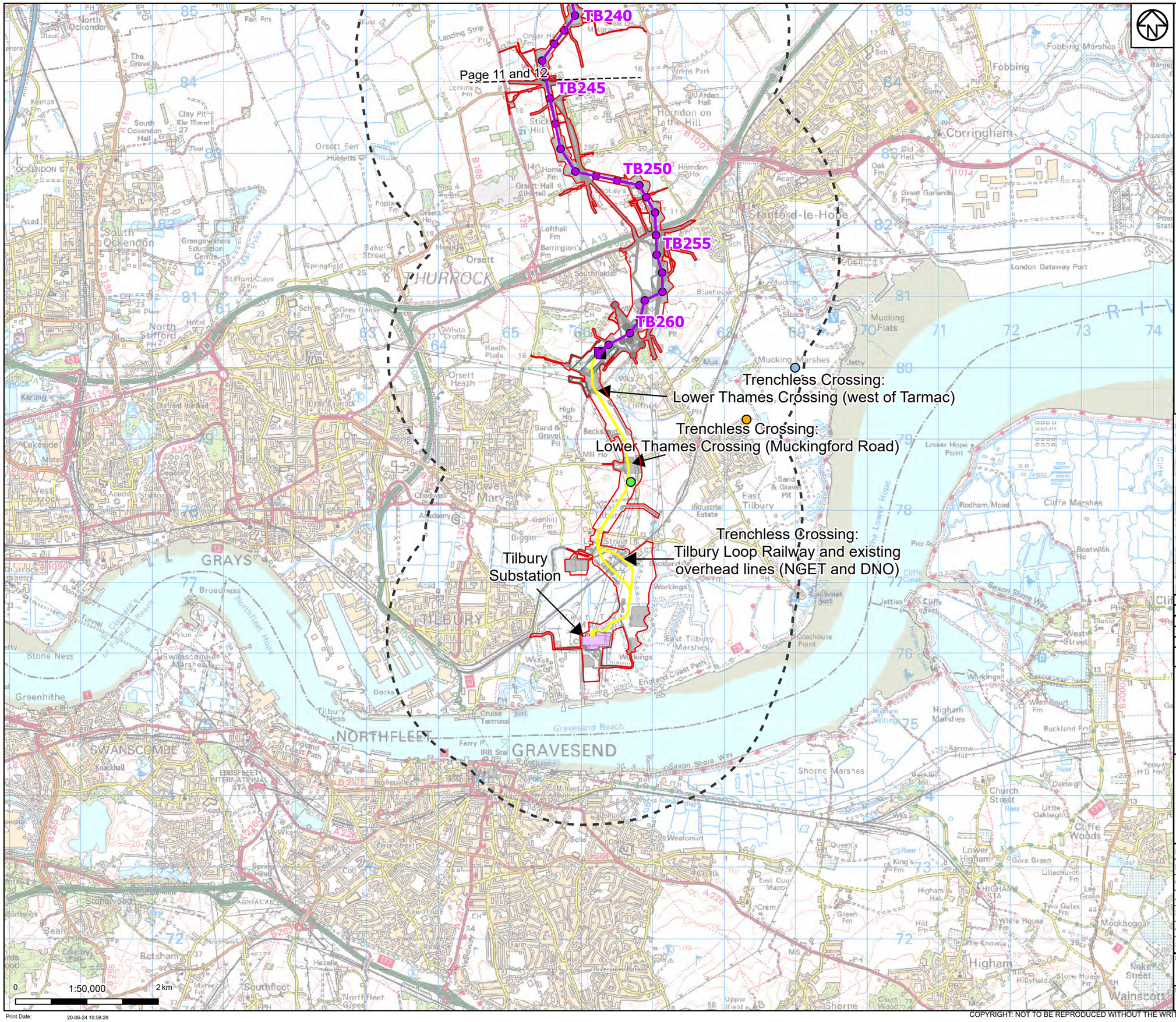
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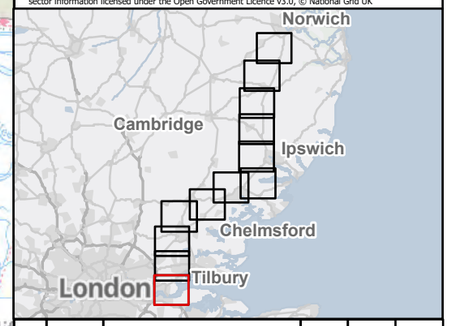
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Proposed full line tension gantry
Proposed pylon position
Proposed underground cable alignment
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Proposed cable sealing end compound
Proposed environmental areas
Other temporary and permanent construction and operational works

Discipline specific constraints

2km Study Area
Common Toad
Brown Hare
Harvest Mouse

Note: The proposed overhead line alignment and proposed underground cable alignment together comprise the 2024 preferred draft alignment.

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PROJECT:
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Title:

Figure A.8.10.1 - Ecology and Biodiversity - Species of Principal Importance Records Within 2km of Draft Order Limits Page 12 of 12

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Appendix 9.1: Baseline Information and Preliminary Contamination Risk Assessment

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Appendix 9.1 - Baseline Information and Preliminary Contamination Risk Assessment

9.1 Introduction

Overview

9.1.1 This appendix presents the baseline information and preliminary contamination risk assessment produced to inform Chapter 9: Contaminated Land, Geology and Hydrogeology in Volume I. This appendix has been prepared to provide baseline information on geology, hydrogeology, and potentially contaminated land within the study area.

9.1.2 As described in Chapter 9: Contaminated Land, Geology and Hydrogeology in Volume I, the study area for geology and land contamination comprises the physical extents of the draft Order Limits plus a buffer of 250 m, and a buffer of 500 m for hydrogeology.

9.1.3 For ease of reference, and to help make the baseline information more relevant to local communities, the Project has been split into eight sections generally by local authority. The Project Sections are as follows:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council (including part of Chelmsford City Council)
- Section H: Thurrock Council

9.2 Geology and Ground Conditions

Introduction

9.2.1 The published geology within the draft Order Limits and study area is shown on the Geological Survey of Great Britain (England and Wales), 1:50,000 scale geological maps, Sheet numbers, 161 Norwich (BGS, 1975), 175 Diss (BGS, 1989), 190 Eye (BGS, 1995), 270 Ipswich (BGS, 2006), 224 and 242 Colchester and Brightlingsea (BGS, 2010), 223 Braintree (BGS, 1982), 241 Chelmsford (BGS, 1975), 240 Epping (BGS, 1981), 257 Romford (BGS, 1996), and 271 Dartford (BGS, 1998).

9.2.2 The 1:50,000 series mapping comprising the superficial and bedrock geology within the Order Limits is presented on Figure 9.1: Superficial Geology and Figure 9.2: Bedrock Geology in Volume II and summarised below. The summary is supplemented by review of the British Geological Survey (BGS) online mapping for superficial and bedrock geology (BGS, 2023).

Published Geology – Superficial Deposits

Section A: South Norfolk Council

9.2.3 Superficial deposits are shown to be present beneath the whole of the study area in Section A and predominantly comprise the Lowestoft Formation, described by the BGS as '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay.

9.2.4 Other superficial geological strata indicated to be present includes:

- Alluvium – indicated locally within valleys associated with watercourses, comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'
- Head deposits – indicated locally within valleys, comprising '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- Within the northern part of the South Norfolk section, localised exposures of the Sheringham Cliffs Formation are indicated, comprising interbedded layers of sand and gravel, laminated silt, and clay, and diamicton
- Within the northern part of the South Norfolk section, occasional isolated pockets of undifferentiated deposits of the Happisburgh Glacigenic Formation and Lowestoft Formation are indicated, comprising diamicton, sand and gravels, sands, laminated silts, and clays
- In limited areas within valleys in the central and southern parts of the South Norfolk section, granular deposits of the Lowestoft Formation are indicated, comprising sand and gravel
- In limited areas in the south of the South Norfolk section, deposits of Peat are indicated to be present, associated with the floodplains of the River Tas and the River Waveney and their tributaries
- River Terrace Deposits comprising '*sand and gravel, locally with lenses of silt, clay or peat*' are indicated to be present at the southern end of the South Norfolk section, associated with the River Waveney

Section B: Mid Suffolk District Council

9.2.5 Superficial deposits are shown to be present beneath the whole of the study area in Section B and predominantly comprise the Lowestoft Formation, described by the BGS as '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay.

9.2.6 The other superficial strata indicated to be present throughout Section B of the study area are described below:

- Alluvium – indicated locally within valleys associated with watercourses, comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'
- River Terrace Deposits comprising '*sand and gravel, locally with lenses of silt, clay or peat*' are indicated to be present at the northern end of the Mid Suffolk section, associated with the River Waveney and in the vicinity of Needham Market associated with the River Gipping and at Offton associated with The Channel
- Head deposits – indicated locally within valleys throughout the whole of Section B, comprising '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- In two very limited areas in the north of the Mid Suffolk section, approximately 1 km and 1.2 km south of the South Norfolk / Mid Suffolk Boundary, deposits of the Ingham Sand and Gravel Formation, comprising '*sands and gravels with occasional clay and silt beds*' are indicated to be present
- Within the northern part of the study area in Section B, limited areas are underlain by sand and gravel deposits of the Croxton Sand and Gravel Member
- Granular deposits of the Lowestoft Formation – indicated locally, typically within valleys, comprising sand and gravel
- Glaciofluvial Deposits are indicated locally within the area of the River Gipping and comprise sands and gravels
- Kesgrave Catchment Subgroup is indicated to be present locally within the area of The Channel and comprise 'cross-bedded and massive, moderately sorted sand and gravel'

Section C: Babergh District Council, Colchester City Council and Tendring District Council

9.2.7 Superficial deposits are shown to be present beneath most of the study area in Section C. Superficial deposits are indicated to be absent within small discrete parts of the section, predominantly associated with the river valleys. The superficial strata are described below:

- The Lowestoft Formation, comprising '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay
- Granular deposits of the Lowestoft Formation, comprising '*sand and gravel*'. These sand and gravel outwash deposits differ from the predominantly cohesive diamicton
- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is typically encountered within valleys associated with watercourses
- Head deposits are indicated locally within valleys and found to comprise '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- The Kesgrave Catchment Subgroup, described by the BGS as '*cross-bedded and massive, moderately sorted sand and gravel*'

- River Terrace Deposits, comprising '*sand and gravel, locally with lenses of silt, clay or peat*'. These are encountered predominantly in the vicinity of the River Stour at the Babergh / Colchester boundary
- Cover Sand, described by the BGS as a wind-blown deposit comprising clay, silt and sand including '*fine to very fine-grained sand, usually horizontally bedded … with large-scale crossbedding*'

Section D: Colchester City Council

9.2.8 Superficial deposits are shown to be present beneath most of the study area in Section D. Superficial deposits are indicated to be absent within small discrete parts of the section, associated predominantly with the river valley sides. The superficial geology is highly variable and are described below:

- The Lowestoft Formation, comprising '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay
- Cover Sand, described by the BGS as a wind-blown deposit comprising clay, silt and sand including '*fine to very fine-grained sand, usually horizontally bedded … with large-scale crossbedding*'
- The Kesgrave Catchment Subgroup, described by the BGS as '*cross-bedded and massive, moderately sorted sand and gravel*'
- Granular deposits of the Lowestoft Formation, comprising '*sand and gravel*'. These sand and gravel outwash deposits differ from the predominantly cohesive diamicton
- Head deposits are indicated locally within valleys and found to comprise '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is typically encountered within valleys associated with watercourses
- River Terrace Deposits, comprising '*sand and gravel, locally with lenses of silt, clay or peat*'. These are encountered predominantly in the vicinity of the River Stour at the Babergh / Colchester boundary

Section E: Braintree District Council

9.2.9 Superficial deposits are shown to be present beneath the whole of the study area in Section E. The superficial strata include:

- The Lowestoft Formation, comprising '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay
- The Kesgrave Catchment Subgroup, described by the BGS as '*cross-bedded and massive, moderately sorted sand and gravel*'
- Head deposits comprising '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is typically encountered within valleys associated with watercourses

- Glaciofluvial deposits described by the BGS as '*mostly coarse-grained sediments (i.e., sand and gravel) with some finer-grained layers (i.e., clay and silt). Sand and gravel, locally with lenses of silt, clay, or organic material*'. These are encountered only in the far west of the Braintree section, associated with valleys and the River Ter

Section F: Chelmsford City Council

9.2.10 Superficial deposits are shown to be present beneath the whole of the study area in the northern part of Section F. In the southern part of the section there are limited areas within the study area where superficial deposits are indicated to be absent.

9.2.11 The superficial strata indicated to be present are described below:

- The Lowestoft Formation, comprising '*chalky till, together with outwash sands and gravels, silts and clays*'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay
- Glaciofluvial deposits described by the BGS as '*mostly coarse-grained sediments (i.e., sand and gravel) with some finer-grained layers (i.e., clay and silt). Sand and gravel, locally with lenses of silt, clay, or organic material*'. These are encountered only to the northeast of Chelmsford, associated with the River Ter and the River Chelmer
- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is typically encountered within valleys associated with watercourses
- Head deposits comprising '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'. This is typically encountered within valleys
- The Kesgrave Catchment Subgroup, described by the BGS as '*cross-bedded and massive, moderately sorted sand and gravel*' and is generally encountered at the edge of the valleys
- The Stanmore Gravel Formation, comprising '*Gravel and sand, clayey near base. Matrix of … clay and sandy clay, with pockets of coarse sand. Locally with layers of silt, clay, or peat*', at one location where it outcrops in the southern part of the section

Section G: Brentwood Borough Council and Basildon Borough Council

9.2.12 Superficial deposits are indicated beneath approximately half of the study area in Section G. The coverage of superficial deposits decreases moving southwards through this section.

9.2.13 The superficial strata indicated to be present are described below:

- Head Deposits comprising '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'
- River Terrace Deposits comprising '*sand and gravel, locally with lenses of silt, clay or peat*' are indicated to be present in two limited areas, to the southeast of Ingatestone

- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is typically encountered within the existing and historical floodplains of watercourses
- The Lowestoft Formation, comprising 'chalky till, together with outwash sands and gravels, silts and clays'. The BGS term this deposit '*Diamicton*', which is commonly referred to as glacial till/boulder clay
- Glaciofluvial deposits described by the BGS as '*mostly coarse-grained sediments (i.e., sand and gravel) with some finer-grained layers (i.e., clay and silt). Sand and gravel, locally with lenses of silt, clay, or organic material*'. These are encountered only in limited areas, typically at the fringes of areas of the Lowestoft Formation

Section H: Thurrock Council

9.2.14 Superficial deposits are indicated to be present beneath most of the study area in Section H and predominantly comprises Head Deposits which are described by the BGS as '*gravel, sand and clay … locally with lenses of silt, clay or peat and organic material*'.

9.2.15 The other superficial strata indicated to be present throughout the Thurrock section of the study area includes:

- Alluvium comprising '*normally soft to firm consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel*'. This is encountered in limited areas within the north of this area, associated with the existing / historical floodplains of watercourses. Alluvium is present in the southern part of the study area in this section, associated with the River Thames
- Terrace Gravel deposits of the Maidenhead Formation (Black Park Gravel Member, Boyn Hill Gravel Member and Taplow Gravel Member), comprising '*gravel with thin cross-bedded sand channels*'. These deposits are encountered to the southeast of Orsett and to the southwest of Standford-le-Hope. Parts of the Black Park Gravel Member appear to have been removed by quarrying

Published Geology – Bedrock

Section A: South Norfolk Council

9.2.16 The bedrock geology beneath the whole of the study area in Section A comprises undifferentiated deposits of the Lewes Nodular Chalk Formation, the Newhaven Chalk Formation, the Culver Chalk Formation, and the Portsdown Chalk Formation, together referred to as the White Chalk Subgroup. The White Chalk Subgroup is described by the BGS as '*Chalk with flints. With discrete marl seams, nodular chalk, sponge-rich and flint seams throughout*'.

Section B: Mid Suffolk District Council

9.2.17 The bedrock strata crossed by the study area within Section B includes:

- Undifferentiated deposits of the Lewes Nodular Chalk Formation, the Newhaven Chalk Formation, the Culver Chalk Formation, and the Portsdown Chalk Formation, together referred to as the White Chalk Subgroup. The White Chalk Subgroup is described by the BGS as '*Chalk with flints. With discrete marl seams, nodular chalk, sponge-rich and flint seams throughout*'

- The Crag Group, comprising '*Sands, gravels, silts, and clays. The sands are characteristically dark green from glauconite but weather bright orange ... The gravels in the lower part of the group are almost entirely composed of flint*'
- The Newhaven Chalk Formation, described as '*soft to medium hard, smooth white chalks with numerous marl seams and flint bands*'
- The Red Crag Formation, comprising '*Coarse-grained, poorly sorted, cross-bedded, abundantly shelly sands*'
- The Chillesford Church Sand Member, described as '*well sorted, fine-to medium-grained sand*'
- Undifferentiated deposits of the Thanet Formation and the Lambeth Group, comprising '*interbedded clays, silts and sands*'
- The Thames Group (comprising the London Clay Formation and the Harwich Formation), described as '*silty clays and clays, some sandy or gravelly, with some silts, sands, gravels and calcareous mudstones*'

Section C: Babergh District Council, Colchester City Council and Tendring District Council

9.2.18 A large proportion of Section C is underlain by bedrock geology of the Thames Group (comprising the London Clay Formation and the Harwich Formation), which is described by the BGS as '*silty clays and clays, some sandy or gravelly, with some silts, sands, gravels and calcareous mudstones*'

9.2.19 The other bedrock strata indicated to be present within this section includes:

- The Red Crag Formation, comprising '*Coarse-grained, poorly sorted, cross-bedded, abundantly shelly sands*'. This is encountered predominantly within Babergh in the central part of the section, with small pockets located to the south of the River Stour, immediately south of the Babergh boundary
- Undifferentiated deposits of the Thanet Formation and the Lambeth Group, comprising '*interbedded clays, silts and sands*'. This stratum is encountered only in the floodplain of the River Stour in the vicinity of Stratford St. Mary

Section D: Colchester City Council

9.2.20 A large proportion of Section D is underlain by bedrock geology of the London Clay Formation, described by the BGS as '*laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay*'. The exception to this is very small outcrops of the Crag Group located to the north of Marks Tey, which is described by the BGS as comprising '*Sands, gravels, silts, and clays. The sands are characteristically dark green from glauconite but weather bright orange ... The gravels in the lower part of the group are almost entirely composed of flint*'.

Section E: Braintree District Council

9.2.21 The bedrock geology beneath the whole of the study area in Section E comprises the London Clay Formation, described by the BGS as '*laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay*'.

Section F: Chelmsford City Council

9.2.22 The majority of Section F is underlain by bedrock geology comprising the London Clay Formation, described by the BGS as *'laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay*'.

9.2.23 The other bedrock strata indicated to be present within this section includes:

- The Bagshot Formation, comprising '*fine to coarse-grained sand that is … locally clayey, with sparse glauconite and sparse seams of gravel*' which is located directly north of the Brentwood/Chelmsford boundary
- The Claygate Member, comprising '*dark grey clays with sand laminae, passing up into thin alternations of clays, silts and fine-grained sand*' which is located directly north of the Brentwood/Chelmsford boundary

Section G: Brentwood Borough Council and Basildon Borough Council

9.2.24 The majority of Section G is directly underlain by bedrock geology comprising the London Clay Formation, described by the BGS as *'laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay*', however in some areas the London Clay is overlain by the following:

- The Claygate Member, comprising '*dark grey clays with sand laminae, passing up into thin alternations of clays, silts and fine-grained sand*'
- The Bagshot Formation, comprising '*fine to coarse-grained sand that is … locally clayey, with sparse glauconite and sparse seams of gravel*'

Section H: Thurrock Council

9.2.25 The northern half of Section H is underlain by bedrock geology comprising the London Clay Formation, described by the BGS as '*laminated, blue-grey or grey, brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay*'. The bedrock geology then transitions through the following strata:

- The Harwich Formation, which is present in small discrete parts of the section underlying the London Clay Formation. This formation is described by the BGS as '*silty or sandy clays, silts and fine to coarse-grained …sands, some gravelly, varying to flint gravel beds*'
- The Lambeth Group comprising '*variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate*'
- The Thanet Formation, described as '*silty fine-grained sand, with sandy silt, silt or sandy, silty clay*'
- Undifferentiated deposits of the Lewes Nodular Chalk Formation, the Newhaven Chalk Formation, the Seaford Chalk Formation, together referred to as the White Chalk Subgroup. The White Chalk Subgroup is described by the BGS as '*Chalk with flints. With discrete marl seams, nodular chalk, sponge-rich and flint seams throughout*'

9.3 Hydrogeology

Licenced and Deregulated Groundwater Abstractions

9.3.1 Information providing licenced groundwater abstractions and deregulated groundwater abstractions have been provided by the Environment Agency in response to a data request.

9.3.2 Table A9.1.1 presents the licensed groundwater abstractions, Table A9.1.2 presents deregulated groundwater abstractions and Table A9.1.3 presents abstractions within the study area, the locations of which are shown on Figure 9.5: Hydrogeology and Hydrogeological Receptors in Volume II.

Table A9.1.1 - Licenced Groundwater Abstractions within the study area

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
AN/034/0013/036 /R01	BOREHOLE AT SWARDESTON NORFOLK	Industrial, Commercial And Public Services – Make-Up Or Top Up Water	ECHLK EASTERN AREA - CHALK	380	A
AN/034/0013/036 /R01	BOREHOLE AT SWARDESTON NORFOLK	Industrial, Commercial And Public Services – Make-Up Or Top Up Water	ECHLK EASTERN AREA - CHALK	380	A
7/34/13/*G/0201	BOREHOLE AT MANGREEN HALL FARM, SWARDESTON	Agriculture, General Farming & Domestic	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	110	A
7/34/13/*G/0201	BOREHOLE AT MANGREEN HALL FARM, SWARDESTON	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	110	A
7/34/14/*G/0020	BORE AT THE WOODLANDS BR'N ASH	Agriculture, General Farming & Domestic	N/A	200	A
AN/034/0014/004	EXCAVATION AT CARLETON RODE, NORFOLK	Industrial, Commercial And Public Services – Other	ESDFG EASTERN AREA – FLUVIAL	400	A

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
			SANDS/GRAVELS		
AN/034/0016/007 / R01	BOREHOLE 3 AT BRESSINGHAM	Agriculture, Spray Irrigation – Direct	N/A	350	A
7/34/16/*G/0072	BORE AT WEST END FM, MELLIS	Agriculture, General Farming & Domestic	N/A	300	B
7/34/17/*G/0047	BORE AT ABBEY FM,WICKHAM SK'TH	Agriculture, General Farming & Domestic	N/A	100	B
7/35/08/*G/0179	BORE AT DOLES FM,STOWUPLAND	Agriculture, General Farming & Domestic	N/A	40	B
7/35/08/*G/0149	BORE AT GROVE FM, CREETING ST PETER	Industrial, Commercial And Public Services – Process Water	ECHLK EASTERN AREA – CHALK	60	B
7/35/08/*G/0149	BORE AT GROVE FM, CREETING ST PETER	Industrial, Commercial And Public Services – Water Bottling	ECHLK EASTERN AREA – CHALK	60	B
7/35/09/*G/0031	WELL – FEN FARM, BURSTALL	Agriculture, Fish Farm/Cress Pond Throughflow	N/A	10	C
8/36/19/*G/0071	WENHAM GRANGE, LITTLE WENHAM.	Agriculture, General Farming & Domestic	N/A	230	C
8/36/19/*G/0071	WENHAM GRANGE, LITTLE WENHAM.	Agriculture, Spray Irrigation – Direct	N/A	230	C
8/37/25/*G/0251	18 COGGESHALL ROAD, ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	200	C

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
8/37/25/*G/0251	18 COGGESHALL ROAD, ARDLEIGH	Agriculture, General Farming & Domestic	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	200	C
8/37/25/*G/0252	19 OAKTREE CORNER, ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	160	C
8/37/25/*G/0252	19 OAKTREE CORNER, ARDLEIGH	Agriculture, General Farming & Domestic	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	160	C
8/37/25/*G/0252	19 OAKTREE CORNER, ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	170	C
8/37/25/*G/0252	19 OAKTREE CORNER, ARDLEIGH	Agriculture, General Farming & Domestic	ESDGG EASTERN AREA - GLACIAL SANDS/GRAVELS	170	C
8/37/25/*G/0336	ABBOTSFIELD ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	0	C
8/37/25/*G/0281	4 TUBEWELLS, BADLISS HALL	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	400	C

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
AN/037/0025/031	WELL POINT A AT NEW HOME FARM, ARDLEIGH	Agriculture, Trickle Irrigation – Storage	N/A	5	C
8/37/25/*G/0143	OLD SHIELDS FARM 1, ARDLEIGH	Agriculture, Spray Irrigation – Anti Frost	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	190	C
8/37/25/*G/0143	OLD SHIELDS FARM 1, ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	190	C
8/37/25/*G/0143	OLD SHIELDS FARM 2, ARDLEIGH	Agriculture, Spray Irrigation – Anti Frost	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	280	C
8/37/25/*G/0143	OLD SHIELDS FARM 2, ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	280	C
8/37/25/*G/0235	ARDLEIGH HALL FARM, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	0	C
8/37/25/*G/0064	BADLEY HALL FARM, ARDLEIGH	Agriculture, General Farming & Domestic	N/A	50	C
8/37/25/*G/0191	B/H, BADLEY HALL, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	50	C
8/37/25/*G/0191	B/H, BADLEY HALL, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	50	C

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
8/37/25/*G/0064	BADLEY HALL FARM, ARDLEIGH	Agriculture, General Farming & Domestic	N/A	60	C
8/37/25/*G/0064	BADLEY HALL MARKED A ON THE MAP	Agriculture, General Farming & Domestic	N/A	5	C
8/37/25/*G/0236	WELL AT ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	0	C
8/37/25/*G/0236	WELL AT ARDLEIGH	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	0	C
8/37/25/*G/0223	HARTS LANE, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	120	C
8/37/25/*G/0223	HARTS LANE, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	160	C
8/37/25/*G/0223	HARTS LANE, ARDLEIGH	Agriculture, Spray Irrigation – Direct	N/A	180	C
AN/037/0025/022	LAGOON AT CROWN QUARRY, ARDLEIGH	Industrial, Commercial And Public Services – Mineral Washing	ECHLK EASTERN AREA – CHALK	400	D
AN/037/0025/023	CROWN QUARRY, ARDLEIGH. COLCHESTER	Industrial, Commercial and Public Services – Dewatering	N/A	0	D
AN/036/0015/017	BOREHOLE AT BOXTED	Agriculture, Spray Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL	210	D

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
			SANDS/GRAVELS		
AN/036/0015/017	BOREHOLE AT BOXTED	Agriculture, Trickle Irrigation – Direct	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	210	D
8/37/23/*G/0079	4 HORKESLEY ROAD, BOXTED	Agriculture, Spray Irrigation – Direct	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	420	D
8/37/23/*G/0079	4 HORKESLEY ROAD, BOXTED	Agriculture, Spray Irrigation – Direct	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	420	D
8/37/23/*G/0092	B/H, GROVE FARM, GT. HORKESLEY	Agriculture, Spray Irrigation – Storage	ESDGG EASTERN AREA – GLACIAL SANDS/GRAVELS	250	D
8/37/23/*G/0112	BOREHOLE AT GREAT HORKESLEY	Agriculture, General Farming & Domestic	N/A	180	D
8/37/23/*G/0087	WELL, NEW BARN FM,GT.HORKESLEY	Agriculture, Spray Irrigation – Storage	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	70	D
8/37/23/*G/0071	POINT A (ALDHAM)	Water Supply – Transfer Between Sources (Pre Water Act 2003)	ECHLK EASTERN AREA – CHALK	120	D

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
8/37/23/*G/0098	WELL AT MILL RACE NURSERY, ALDHAM	Agriculture, Spray Irrigation – Direct	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	360	D
AN/037/0024/022	WELL AT W H COLLIER BRICKWORKS, MARKS TEY, COLCHESTER	Industrial, Commercial And Public Services – Dewatering	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	340	D
8/37/31/*G/0187	SIX WELLPOINTS – RIVENHALL	Agriculture, Spray Irrigation – Direct	N/A	10	E
8/37/34/*G/0040	EXCAV, ROXWELL QUARRY, ROXWELL	Agriculture, Spray Irrigation – Direct	N/A	0	F
8/37/56/*G/0032	HOME FARM, ORSETT	Agriculture, General Farming & Domestic	ESDFG EASTERN AREA – FLUVIAL SANDS/GRAVELS	330	H
AN/037/0056/012/R01	BOREHOLE AT ORSETT GOLF CLUB	Industrial, Commercial and Public Services, Spray Irrigation – Direct	ECHLK EASTERN AREA – CHALK	260	H
8/37/56/*G/0006	EXCAV AT POLWICKS,WEST TILBURY	Agriculture, General Farming & Domestic	N/A	120	H
8/37/56/*G/0006	WELL 1 AT POLWICKS, WEST TILBURY	Agriculture, General Farming & Domestic	N/A	120	H
8/37/56/*G/0006	EXCAV AT POLWICKS,WEST TILBURY	Agriculture, Spray Irrigation – Direct	N/A	120	H

Licence Number	Point Name	Purpose and Use	Aquifer	Distance from draft Order Limits (m)	Project Section
8/37/56/*G/0006	WELL 1 AT POLWICKS, WEST TILBURY	Agriculture, Spray Irrigation – Direct	N/A	120	H
8/37/56/*G/0006	WELL 2 AT POLWICKS, WEST TILBURY	Agriculture, General Farming & Domestic	N/A	80	H
8/37/56/*G/0006	WELL 2 AT POLWICKS, WEST TILBURY	Agriculture, Spray Irrigation – Direct	N/A	80	H

Table A9.1.2 – Deregulated Groundwater Abstractions within the study area

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
7/34/14/*G/0125	MANGREEN HALL NORTH SWARDESTON	Water Supply - General Use	300	A
7/34/14/*G/0023	BORE,MANGREEN HALL FM,SWAR'TON	Water Supply - Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household	200	A
7/34/13/*G/0202	BORE AT LODGE FM,MULBARTON	Agriculture - General Farming & Domestic	440	A
7/34/14/*G/0098	BORE ADJ RAILWAY LINE,N.FLOT'N	Agriculture - General Farming & Domestic	200	A
7/34/14/*G/0077	BORE AT FLORDON HALL,FLORDON	Agriculture - General Farming & Domestic	170	A
7/34/14/*G/0077	BORE AT FLORDON HALL,FLORDON	Water Supply – General Use	170	A
7/34/14/*G/0052	WELL AT GROVE FM,FUNDENHALL	Agriculture, General Farming & Domestic	330	A
7/34/14/*G/0097	BORE AT PERSEHALL MANOR	Agriculture, General Farming & Domestic	340	A
7/34/14/*G/0014	BORE,OLD HALL FM,TIBENHAM	Agriculture, General Farming & Domestic	110	A

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
7/34/14/*G/0091	BORE AT LOW FM,TIBENHAM	Agriculture, General Farming & Domestic	290	A
7/34/16/*G/0076	BOREHOLE AT WINFARTHING	Agriculture, General Farming & Domestic	420	A
7/34/16/*G/0024	WELL NR HOLLY FM,DISS	Agriculture, General Farming & Domestic	300	A
7/34/16/*G/0061	BORE AT GREEN FM,SHELFANGER	Agriculture, General Farming & Domestic	360	A
7/34/16/*G/0032	WELL AT SHELFANGER LODGE DISS	Agriculture, General Farming & Domestic	410	A
7/34/16/*G/0005	BORE AT DARROW WOOD FM,DISS	Agriculture, General Farming & Domestic	190	A
7/34/16/*G/0043	BORE AT BOUNDARY FM,DISS	Agriculture, General Farming & Domestic	270	A
7/34/16/*G/0017	BORE AT DARROW FM,ROYDON	Agriculture, General Farming & Domestic	40	A
7/34/16/*G/0050	BORE AT GROVE FM,ROYDON	Agriculture, General Farming & Domestic	20	A
7/34/16/*G/0087	BOREHOLE AT WORTHAM SP	Agriculture - General Farming & Domestic	0	B
7/34/16/*G/0065	BORE AT HALL FM,MELLIS	Agriculture, General Farming & Domestic	310	B
7/34/17/*G/0028	BORE AT UPPER EASTLANDS FM,FIN	Agriculture, General Farming & Domestic	280	B
7/34/17/*G/0071	BOREHOLE AT MENDLESHAM	Agriculture, General Farming & Domestic	0	B
7/34/17/*G/0067	BOREHOLE CHALK - POTTERS FARM	Agriculture, General Farming & Domestic	10	B
7/34/17/*G/0033	BORE AT LODGE FM,MENDLESHAM	Agriculture, General Farming & Domestic	300	B
7/34/17/*G/0008	BORE AT RED HOUSE FM,COTTON	Agriculture, General Farming & Domestic	400	B

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
7/35/08/*G/0086	BORE AT PALGRAVE FM,STOWUPLAND	Agriculture, General Farming & Domestic	20	B
7/35/08/*G/0042	WELL AT GIBBON'S FM,BATTISFORD	Agriculture, General Farming & Domestic	120	B
7/35/08/*G/0037	WELL AT VALE FM,BATTISFORD	Agriculture, General Farming & Domestic	250	B
7/35/08/*G/0110	BORE AT HILL HOUSE FM,RINGSH'L	Agriculture, General Farming & Domestic	270	B
7/35/08/*G/0062	BORE AT HILL FM,SOMERSHAM	Agriculture, General Farming & Domestic	70	B
7/35/08/*G/0082	BORE AT CALEY GREEN FM,L SOMER	Agriculture, General Farming & Domestic	90	B
7/35/08/*G/0049	BORE AT GUNN'S FM,SOMERSHAM	Agriculture, General Farming & Domestic	50	B
7/35/09/*G/0001	BORE AT BUSHEY LEY FM,ELMSETT	Agriculture, General Farming & Domestic	130	C
7/35/08/*G/0026	BORE AT LOVETOFTS FM,FLOWTON	Agriculture, General Farming & Domestic	330	B
7/35/09/*G/0010	WELL AT GROVE FM,FLOWTON	Agriculture, General Farming & Domestic	330	B
7/35/08/*G/0209	BOREHOLE AT BURSTALL HALL FARM	Agriculture, General Farming & Domestic	70	C
7/35/08/*G/0200	CHALK BOREHOLE - BRAMFORD	Agriculture, General Farming & Domestic	30	C
7/35/08/*G/0153	BORE AT FERRY BARN,SPROUGHTON	Agriculture, General Farming & Domestic	10	C
8/36/17/*G/0105	BOREHOLE AT HOLTON ST MARY	Agriculture, General Farming & Domestic	400	C
8/36/18/*G/0022	NIGHTINGALE FARM, LANGHAM	Agriculture, General Farming & Domestic	190	C
8/36/18/*G/0012	GROVE FARM, LANGHAM	Agriculture, General Farming & Domestic	220	C

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
8/36/18/*G/0023	STONE COTTAGE, DEDHAM	Agriculture, General Farming & Domestic	120	C
8/36/18/*G/0011	BIRCHWOOD, DEDHAM	Agriculture, General Farming & Domestic	310	C
8/37/25/*G/0168	GODS HOUSE FARM, ARDLEIGH	Agriculture, General Farming & Domestic	250	C
8/37/25/*G/0104	MALTING FARM, ARDLEIGH	Agriculture, General Farming & Domestic	80	C
8/36/18/*G/0064	WELLPOINT AT DEDHAM	Agriculture, Spray Irrigation - Direct	380	C
8/37/25/*G/0332	WELLPOINT AT KALM OAK NURSERY	Agriculture, Spray Irrigation - Direct	380	C
8/37/25/*G/0254	TUBE WELL, 24 HARWICH RD, ARDLEIGH	Agriculture, General Farming & Domestic	360	C
8/37/25/*G/0329	WELLPOINT AT HARWICH ROAD	Agriculture, Spray Irrigation - Direct	80	C
8/37/25/*G/0330	WELLPOINT AT HARWICH ROAD	Agriculture, Spray Irrigation - Direct	80	C
8/37/25/*G/0306	BOREHOLE AT GLEBE COTTAGE	Water Supply, Private Water Supply	50	C
8/37/25/*G/0334	WELLPOINT AT LAWFORD	Agriculture, Spray Irrigation - Direct	100	C
8/37/25/*G/0029	PYGHTLE POULTRY FARM, ARDLEIGH	Agriculture, General Farming & Domestic	90	C
8/37/25/*G/0065	GODS HOUSE FARM, ARDLEIGH	Agriculture, General Farming & Domestic	190	C
8/37/25/*G/0139	HARTS LODGE, ARDLEIGH	Agriculture, General Farming & Domestic	340	C
8/37/25/*G/0139	HARTS LODGE, ARDLEIGH	Agriculture, General Farming & Domestic	260	C
8/37/25/*G/0318	WELL, ‘‘3’’ - WICK FARM ARDLEIGH	Agriculture, General Farming & Domestic	280	C

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
8/37/25/*G/0318	WELL, ‘‘2’’ - WICK FARM ARDLEIGH	Agriculture, General Farming & Domestic	180	C
8/37/25/*G/0318	WELL, ‘‘1’’ - WICK FARM ARDLEIGH	Agriculture, General Farming & Domestic	170	C
8/37/25/*G/0317	WELL AT BLOOMFIELD FRM,ARDLEGH	Agriculture, General Farming & Domestic	6	C
8/37/25/*G/0038	HARTS LANE, ARDLEIGH.(A)	Agriculture, General Farming & Domestic	350	C
8/37/25/*G/0038	HARTS LANE, ARDLEIGH.(B)	Agriculture, General Farming & Domestic	350	C
8/37/25/*G/0190	BIRCHWOOD NURSERY, ARDLEIGH	General Agriculture, Spray Irrigation - Direct	160	C
8/36/18/*G/0025	STRAIGHT ROAD, BOXTED	Agriculture, Spray Irrigation - Direct	5	D
8/36/18/*G/0062	WELL AT REDHOUSE FARM, BOXTED	Agriculture, General Farming & Domestic	20	D
8/37/23/*G/0066	LODGE FARM, GT. HORKESLEY	Agriculture, General Farming & Domestic	90	D
8/36/15/*G/0009	SPRING FARM, GT. HORKESLEY.	Agriculture, General Farming & Domestic	100	D
8/36/15/*G/0009	SPRING FARM, GT. HORKESLEY.	Agriculture, General Farming & Domestic	270	D
8/37/24/*G/0015	CHIPPETS FARM, LEXDEN HEATH	Agriculture, General Farming & Domestic	40	D
8/37/24/*G/0017	CLAYPIT BRICKWORKS, MARKS TEY	Industrial, Commercial and Public Services	380	D
8/37/24/*G/0041	TEY BROOK FARM, GREAT TEY	Agriculture, General Farming & Domestic	120	D
8/37/32/*G/0038	WELL AT WHITEHEADS FARM	Agriculture, General Farming & Domestic	60	E
8/37/32/*G/0015	WELL, HOLE FARM, FAULKBOURNE	Agriculture, General Farming & Domestic	30	E

Licence Number	Point Name	Purpose and Use	Distance from draft Order Limits (m)	Project Section
8/37/32/*G/0011	BOREHOLE AT FAULKBOURNE	Agriculture, General Farming & Domestic	130	E
8/37/35/*G/0035	STACEYS FARM, BROOMFIELD	Agriculture, General Farming & Domestic	330	F
8/37/35/*G/0034	SCRAVELS, BROOMFIELD	Agriculture, General Farming & Domestic	90	F
8/37/34/*G/0018	BRETTONS, CHIGNALL ST.JAMES	Agriculture, General Farming & Domestic	175	F
8/37/33/*G/0007	MONTPELIER FARM, WRITTLE	Agriculture, General Farming & Domestic	280	F
8/37/33/*G/0003	PARK LODGE, MARGARETTING	Agriculture, General Farming & Domestic	220	F
8/37/33/*G/0003	PARK LODGE, MARGARETTING	Water Supply, Private Water Supply	220	F
8/37/33/*G/0011	CANTERBURYS, MARGARETTING	Agriculture, General Farming & Domestic	240	F
8/37/56/*G/0033	LARKINS FARM, ORSETT	Agriculture, General Farming & Domestic	350	H
8/37/56/*G/0084	BOREHOLE AT TILBURY POWER STN	Industrial/Commercial/Energy/Public Services, Make-Up Or Top Up Water	50	H

Private Water Supplies

9.3.3 Data describing private water supplies has been provided by the following relevant district councils; Babergh and Mid Suffolk District Councils (Section B and the northern part of Section C), Tendring District Council (south-east part of Section C), Colchester City Council (Section D) Brentwood Borough Council (part of Section G) and Braintree District Council (Section E). Basildon Borough Council (part of Section G) have confirmed that there are no private water supplies within their district.

9.3.4 Information from South Norfolk District Council (Section A and Thurrock Council (Section H) is still pending at the time of writing.

9.3.5 The information currently received is presented in Table A9.1.3 to Table A9.1.6 below and the locations presented on Figure 9.5: Hydrogeological Receptors in Volume II.

Table A9.1.3 - Braintree District Council Private Water Supplies within the study area

Point Name	Distance from draft Order Limits (m)	Project Section
Newneys Farm	40	E
Keepers Cottage	200	E
Popps	340	E

Table A9.1.4 - Colchester City Council Private Water Supplies within the study area

Point Name	Description	Distance from draft Order Limits (m)	Project Section
Jody Cottage, Nightangle Hill, Langham, Colchester, CO4 5PN	Category 1,E Private water supply. Well source shared with Nightingale farm.	180	C
Nightingale Farm, Nightingale Hill, Langham, Colchester, C04 5PN	Category 1,E Private water supply. Well supply shared with the bungalow next door	140	C
Wood Lodge, Queens Head Road, Boxted, Colchester, CO4 5RQ	Category 1,F Private water supply. well near house	340	D
Oakwood, Queens Head Road, Boxted, Colchester,CO4 5RH	Category 1,F Private water supply. Shallow well at rear of the property	290	D
Oakwood, Queens Head Road, Boxted, Colchester,CO4 5RH	Category 1,F Private water supply. Well Located at rear garden, Pumped to Property and distribution from roof space tank	290	D
Rose cottage, Redhouse Lane, Boxted Colchester, Colchester, CO4 5RL	Category 1,F Private water supply. Shallow well	120	D
Redhouse Farm, Redhouse lane, Boxted, Colchester, CO4 5RL	Category 1,F Private water supply. Well source new one dug 1998 due to sufficiency problems	90	D
Harrow wood, Queens Head road, Boxted, Colchester, CO4 5RH	Category 1,F Private water supply. Shallow well at rear of the property	250	D

Point Name	Description	Distance from draft Order Limits (m)	Project Section
Orchard House, Boxted Road, Great Horkesley, Colchester, CO6 4AP	Category 1,F Private water supply. Well in rear garden	230	D
Tye cottage, Holly Lane, Great Horkesley, Colchester, CO6 4AW	Category 1,F Private water supply. Well source located beneath floor of kitchen	350	D
Green View, Holly Lane, Great Horkesley, Colchester, CO6 4AW	Category 2,5 Private water supply. Well source Located near rear of house	430	D
The croft, Great Horkesley, Colchester, CO6 4AP	Category 1,F Private water supply. Well source located in rear garden	60	D
Baygreen Farmhouse, Workhouse Road, Little Horkesley, CO6 4DS	Category 1,F Private water supply. Well source	30	D
Vinesse Road, Little Horkesley, Colchester, CO6 4DT	Category 1,F Private water supply. Well source new one dug 1998 due to sufficiency problems	90	D
Workhouse Cottage, Workhouse road, Little Horkesley, Colchester, CO6 4DR	Category 1,F Private water supply. Well source Deepened in 1992 due to sufficiency problems	190	D
Chancers House, Fossetts Lane, Fordham, Colchester, CO63NY	Category 1,F Private water supply. Well Source installed approx. 20 years ago	140	D
Gate House, Rectory road, Aldham, Colchester, CO6 3RR	Category 1,F Private water supply. Well Located at rear garden, Pumped to Property and distribution from roof space tank	5	D

Table A9.1.5 – Babergh and Mid Suffolk District Council Private Water Supplies within study area

Point Name	Distance from draft Order Limits (m)	Project Section
Swattesfield Campsite Gislingham Road Thornham	80	B
Eastlands Farm, Eastlands Lane, Finningham Stow	200	B

Point Name	Distance from draft Order Limits (m)	Project Section
Boundary Farm Cotton Road Mendlesham IP14 5SR	70	B
J L Thoroughgood, Bushey Ley Cottage	140	B
Caley Green Farm, Hadleigh Road, Somersham	50	B
Grove Farm High Street Flowton Suffolk	360	B
Thornbush Hall Thornbush Lane Bramford	10	B
Rotormotive, Hill Farm Burstall Lane, Sproughton	160	C
Abbey Oaks Burstall Lane Sproughton	350	C
The Firs Church Lane Washbrook IP8 3HG	220	C
The Lindens Church Lane Washbrook IP8 3HG	200	C
The Croft Church Lane Washbrook	310	C
Headlands Church Lane Washbrook IP8 3HF	300	C
Wenham Grange, Bottle Bridge Road, Wenham Parva	100	C
Bobbits Hall, Holtonwood Road, Stratford St Mary	150	C
Wheatlands Holtonwood Road Stratford St Mary	400	C
Glebe House School Lane Stratford St Mary	430	C

Table A9.1.6 – Tendring District Council Private Water Supplies within the study area

Point Name	Distance from draft Order Limits (m)	Project Section
Malting Farm	60	C
Mulberry Lodge	100	C
Jennings Farm House	100	C
The Coach House	230	C
Little Bromley Hall	200	C
Barlon House	320	C
The Old Rectory	230	C
2 New Memorial	50	C
3 New Memorial	50	C
1 Church Road	25	C

Point Name	Distance from draft Order Limits (m)	Project Section
Woodside	340	C
The Haywain	40	C
Mulleys Cottage	5	C
Grove Cottage	100	C
Mulleys Farm	20	C
Oakwood	30	C
Orchard Cottage	10	C
Oatlands	200	C
Fen Cottage	230	C
Friesian Bungalow	35	C
2 Wick Cottage	35	C
1 Wick Cottages	50	C

Groundwater Bodies

9.3.6 The study area crosses the following Water Framework Directive groundwater bodies (Environment Agency, 2023) shown in Table A9.1.7.

Table A9.1.7 - Groundwater Bodies Crossed by the study area

Groundwater Body	Project Section	Quantitative Status	Chemical Status	Overall Status
Broadland Rivers Chalk and Crag Water Body (ref: GB40501G400300)	Section A, northern part of Section B	Poor	Poor	Poor
Cam and Ely Ouse Chalk (Ref: GB40501G400500)	The western part of the split at Diss	Poor	Poor	Poor
Waveney and Suffolk East Chalk and Crag Water Body (Ref: GB40501G400600)	Southern part of the Section B and northern part of Section C	Poor	Poor	Poor
North Essex Chalk (Ref: GB40501G400700)	Central part of the Section C	Poor	Poor	Poor

Groundwater Body	Project Section	Quantitative Status	Chemical Status	Overall Status
Essex Gravels (Ref: GB40503G000400)	Southern part of Section C, Section D, Section E, Section F, Section G, majority of Section H	Good	Poor	Poor
South Essex Lower London Tertiaries (ref: GB40602G401000)	Located between Chadwell St Mary and Tilbury within Section H	Good	Good	Good
South Essex Thurrock Chalk (ref: GB40601G401100)	Located along the most southern part of the section directly north of the River Thames within Section H	Poor	Poor	Poor

9.4 Preliminary Contamination Risk Assessment

Introduction

9.4.1 The assessment of land contamination within the draft Order Limits has been undertaken following a staged approach as recommended by the guidance provided in Land Contamination Risk Management (LCRM)[1]. This presents a three-stage process to the management of contaminated land.

- Stage 1 – risk assessment
- Stage 2 – options appraisal
- Stage 3 – remediation

9.4.2 The Stage 1 risk assessment is undertaken in a phased manner comprising three tiers, as follows:

- Tier 1 – Preliminary Risk Assessment (PRA) – a qualitative assessment of historical and published information to develop a preliminary conceptual site model to inform a preliminary risk assessment
- Tier 2 – Generic Risk Assessment – a quantitative assessment using published criteria to screen site specific ground condition data
- Tier 3 – Detailed Risk Assessment – a quantitative assessment involving the generation of site-specific assessment criteria

9.4.3 This appendix provides a PRA (Tier 1) of ground conditions for the Project and identifies locations where there is potential for significant sources of contamination. The results of the PRA form the basis for the baseline conditions and assessment within Chapter 9: Contaminated Land, Geology and Hydrogeology in Volume I.

[1] Land Contamination Risk Management (LCRM), 2023 [online]. Available at: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm [Accessed August 2023]

Preliminary Risk Assessment Methodology

Initial Assessment (Tier 0)

9.4.4 The first stage of the PRA was to undertake an initial assessment to determine potential locations/sites for existing sources of contamination within the study area. These were identified based on the historical and current land use information determined from a variety of information sources including historical ordnance survey mapping, aerial imagery, and regulatory enquiries. At the time of writing, regulatory enquiry responses had only been received from Basildon Borough Council (part of Section G), Braintree District Council (Section E), Chelmsford City Council (Section F), Tending District Council (part of Section C) and Thurrock Council (Section H). South Norfolk Council (Section A) and Colchester City Council (Section D) have both confirmed that they have not determined any contaminated land sites.

9.4.5 The sites were then given a classification score representing their potential for generating contamination (that could potentially impact on identified receptors). The criteria used in this assessment for classifying hazards/potential for generating contamination is presented in Table A9.1.8, which has been developed using the guidance within LCRM[1].

Table A9.1.8 – Criteria for Classifying the Potential for Generating Contamination

Classification score	Potential for generating contamination
Very Low	Land use examples: residential, retail or office use, agricultural.
Low	Land use examples: recent small scale industrial and light industry
Moderate	Land use examples: railway yards, collieries, scrap yards, inert landfills
High	Land use examples: heavy industry, non-hazardous landfills
Very High	Land use examples: hazardous landfills, large gas works, chemical works

9.4.6 Sites/areas that are classified as having a very low or low potential for generating contamination are scoped out of further assessment on the basis that there is no significant contamination source and therefore significant impacts and effects on relevant identified receptors are considered unlikely.

9.4.7 Sites/areas that are identified as having a moderate or above potential for generating contamination have been taken forward for further assessment.

9.4.8 This approach has been undertaken as it is proportionate for the scale of the Project and the activities that will be undertaken and allows a targeted approach as required by EIA Regulations.

Further Assessment

9.4.9 The sites taken forward for further assessment have been assessed as having a moderate or above potential for generating contamination which could potentially result in significant effects on sensitive receptors. The sites were taken forward to assess the potential pollutant linkage to evaluate whether the presence of a source of contamination could potentially lead to harmful consequences.

9.4.10 A pollutant linkage consists of the following three elements:

- A source of contamination or hazard that has the potential to cause harm or pollution
- A pathway for the hazard to move along/generate exposure
- A receptor which is vulnerable to the potential adverse effects of the hazard

9.4.11 Whilst the contamination may be a hazard it would not constitute a risk unless a pathway and receptor are also present, and a pollutant linkage can be determined. Therefore, in assessing the potential for contamination to cause a significant effect: the extent and nature of the potential source or sources of contamination must be assessed; any pathways present must be identified; and sensitive receptors or resources identified and appraised to determine their value and sensitivity to contamination related impacts.

9.4.12 Each tier of the Stage 1 risk assessment comprises the following four stages:

- Hazard Identification – involves identifying potential contaminant sources within the study area
- Hazard Assessment – assessing the potential for unacceptable risks by identifying what pathways and receptors could be present, and what pollutant linkages could result (forming the Conceptual Site Model)
- Risk Estimation – predict what degree of harm or pollution might result and how likely)
- Risk Evaluation – evaluating whether the risk is acceptable or whether further assessment, remediation or mitigation is required

9.4.13 To determine the risk to the identified receptor, both the probability (Table A9.1.9) and the degree of harm to a potential receptor (consequence – Table A9.1.10 and Table A9.1.11) are used and the risk estimated for each pollutant linkage using the matrix in Table A9.1.12, which is based on standard industry guidance provided within the Construction Industry Research and Information Association (CIRIA) report C552, Contaminated Land Risk Assessment[2]. The risk classifications are defined in Table A9.1.12. Definitions of receptor sensitivity are provided in Table 11.5 of Chapter 11: Geology and Hydrogeology of the EIA Scoping Report (National Grid, 2022).

Table A9.1.9 – Classification of Probability (based on C552[2])

Classification	Definition
High likelihood	There is a pollution linkage and an event either appears very likely in the short-term and almost inevitable over the long-term, or there is already evidence at the receptor of harm/pollution.
Likely	There is a pollution linkage, and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter-term.

[2] CIRIA, 2001, Contaminated land risk assessment, a guide to good practice (C552)

Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table A9.1.10 – Classification of Consequence (combination of receptor sensitivity and potential for generating contamination)

Potential for Generating Contamination	Receptor Sensitivity				
	Very High	**High**	**Medium**	**Low**	**Negligible**
Very High	Severe	Severe	Medium	Medium	Mild
High	Severe	Medium	Medium	Mild	Minor
Moderate	Medium	Medium	Mild	Mild	Minor
Low	Medium	Mild	Mild	Minor	Minor
Very Low	Mild	Minor	Minor	Minor	Minor

Table A9.1.11 – Classification of Consequence Definitions (based on C552[2])

Classification	Examples
Severe	Human health effect – exposure likely to result in 'significant harm' as defined in the Defra (2012) Part 2A Statutory Guidance[3]. Controlled water effect – short-term risk of pollution (note: Water Resources Act[4] contains no scope for considering significance of pollution) of sensitive water resource. Equivalent to Environment Agency Category 1 incident (persistent and/or extensive effects on water quality leading to closure of potable abstraction point or loss of amenity, agriculture, or commercial value. Major fish kill. Ecological effect – short-term exposure likely to result in a substantial adverse effect. Catastrophic damage to crops, buildings or property.
Medium	Human health effect – exposure could result in 'significant harm'[3] Controlled water effect – equivalent to Environment Agency Category 2 incident requiring notification of abstractor. Ecological effect – short-term exposure may result in a substantial adverse effect. Damage to crops, buildings, or property.
Mild	Human health effect – exposure may result in 'significant harm'[3]. Controlled water effect – equivalent to Environment Agency Category 3 incident (short lived and/or minimal effects on water quality).

[3] Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, 2012 [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/223705/pb13735cont-land-guidance.pdf [Accessed August 2023]

[4] Water Resources Act, 1991 [online]. Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents [Accessed August 2023]

Classification	Examples
	Ecological effect – unlikely to result in a substantial adverse effect. Minor damage to crops, buildings or property. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor	No measurable effect on humans. Protective equipment is not required during site works. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects to crops, buildings or property. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table A9.1.12 – Classification of Risk (based on C552[2])

		Consequence			
Probability		**Severe**	**Medium**	**Mild**	**Minor**
	High Likelihood	Very High	High	Moderate	Low
	Likely	High	Moderate	Moderate	Low
	Low Likelihood	Moderate	Moderate	Low	Very low
	Unlikely	Low	Low	Very low	Very low

Note: This risk matrix applies to qualitative risk assessment only.

Table A9.1.13 – Risk Classification Definitions (based on C552[2])

Risk Classification	Description
Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Initial Assessment

9.4.14 The majority of the draft Order Limits and study area appears to have remained as 'undeveloped' agricultural land and farm buildings since the earliest available historical mapping from the National Library Scotland, which contains mapping for the majority of the United Kingdom dating from the 1880's[5]. In these areas it is considered that there is a very low risk of potential sources of significant existing contamination and therefore they are not considered further in this assessment.

9.4.15 There are 42 sites/areas within the draft Order Limits, and a further 46 within the study area, where historical potentially contaminative land uses have been identified or where the current land use is potentially contaminative. Readily available information relating to these sites and their associated Potential Sources of Contamination (PSC) has been gathered and is presented in the tables below which are split into the sections discussed in Section 9.1 with a corresponding Classification Score for their potential for generating contamination.

Table A9.1.14 – Potential sources of contamination in Section A: South Norfolk Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
A1	Norwich Substation	Ipswich Road, Stoke Holy Cross, South Norfolk. (621847E, 302391N)	The site comprises a National Grid substation comprising substation infrastructure on hardstanding. The site is identified on the 1999 historical Google Aerial imagery and is indicated to have expanded over time to the northeast and west.	Low
A2	Numerous small historical pits that are not classified as landfill– including Sprow's pit	Various locations across the study area	Present since the earliest mapping reviewed (NLS, dated 1885). Former pits (likely sand and gravel and chalk), typically limited in size. Most are first recorded in the late 1800s/early 1900s and typically not recorded after 1950 and potentially infilled.	Low
A3	The Vale Hospital	Church Road, Swainsthorpe, Norfolk, NR14 8PS (620861E, 301140N)	The site originally comprised a Workhouse as indicated on the historical map (NLS, dated 1885-1900) An internet search indicates that the workhouse was built in 1836. In 1948 the site became the Vale Hospital and closed in 1984 when the site was converted to residential use.	Low

[5] National Library of Scotland – map images, 2024, [online]. Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=5&lat=56.00000&lon=-4.00000&layers=1&right=ESRIWorld [Access January 2024]

PSC No	Name	Location	Description	Potential for Generating Contamination
A4	Dismantled railway	Running approximately northwest to southeast through the draft Order Limits (616898E, 297022N)	The railway is identified on the earliest reviewed historical map dated 1885-1900 (NLS), and the track appears to go from cutting in the north, onto embankment and bridge over the road in the south. By the earliest available historical Google Aerial imagery dated 1999 the railway has been dismantled, however a review of Google Street view indicates the cutting and embankment remain.	Low
A5	Forncett End Sewage Treatment Works	Tabernacle Lane, Forncett End, NR16 1LJ (614376E, 293058N)	The treatment works is first identified on the earliest historical Google Aerial imagery dated 1999. The site has remained largely unchanged since the 1999 imagery. Potential sludge beds are identified on the southern boundary of the site.	Low
PSC within 250m of the draft Order Limits				
A6	Mangreen Quarry – active sand and gravel quarry operations	Located to the south and north of Mangreen Lane and to the east of Ipswich Road. (621883E, 302924N)	The site is currently an active sand and gravel extraction site which is first identified on the 2011 historical Google Aerial imagery. The site has expanded over time to the west and south with some sections being restored with inert waste to agricultural use (based on information from the planning portal). The site currently has planning permission for the import and recycling of waste and for use as a highway depot.	Moderate
A7	Great Eastern Railway Line – Norwich Line	Runs approximately northeast to southwest	The railways line is identified on the earliest reviewed mapping (NLS, dated 1885-1900) and is indicated to be present through to the current day based on the Google Aerial imagery.	Low
A8	Former Brickworks and pits	Brick Kiln Lane, Bunwell, South Norfolk (612959E, 291691N)	The brickworks and brick pits are identified on the earliest reviewed historical map (NLS, dated 1885-1900). The brickworks and pits are no longer labelled on the map dated 1919-1930, although the pits still appear on the maps. The earliest historical Google Aerial imagery dated 1999 indicates the site comprises a mixture of mature trees	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			and open fields indicating the pits may have been infilled.	
A9	Sewage treatment works	Brick Kiln lane, Bunwell, South Norfolk (612776E, 291623N)	Small scale sewage treatment works. The treatment works is first identified on the earliest historical Google Aerial imagery dated 1999. The site has remained largely unchanged since the 1999 imagery.	Low
A10	Near Shelfanger Road – historical landfill	Shelfanger Road, Diss, IP22 4XY (611086E, 282410N),	Identified from the Environment Agency data set as a historical landfill that was licenced to take inert waste from 1974 to 1975. The current land use, based on the most recent Google Aerial imagery dated 2023, is identified partly as open fields (southwest) and partly as industrial units and materials storage of what appears to be aggregates and demolition materials (northeast).	Moderate
A11	Darrow Wood Industrial estate	Darrow Wood Farm, Shelfanger Road, Diss IP22 4XY. (610463E, 282219N)	Darrow Wood Farm is identified on the earliest reviewed historical mapping (NLS, dated 1885-1900) and remains present throughout the map's series presented. Google Earth imagery indicates the presence of Diss Autocare & MOT centre on the site, along with a garden machinery company and a Livery yard for horses.	Low
A12	Waste management and recycling business	Boundary Farm, Shelfanger Road, Diss IP22 4XU. (611139E, 281258N)	The historical mapping reviewed (NLS) indicates the site was open fields from the 1880's through to the early 1940's. By the mapping dated 1949-1972 small buildings are present towards the centre of the site. The earliest available historical Google Earth imagery dated 1999 shows the site with large buildings in the centre and surrounded by waste materials associated with the waste management business at the property. The site remains largely unchanged through the Google Earth aerial images.	Low
A13	Roydon Fen – Historical landfill	Roydon, Norfolk (610200E, 279500N)	Identified as a historical landfill from the Environment Agency data set, and it is indicated that liquid sewage sludge was deposited at the location in the 1970s. The current land use, based on the most	Moderate

PSC No	Name	Location	Description	Potential for Generating Contamination
			recent Google Aerial imagery dated 2023, indicates the site to comprise open fields and mature hedges.	

Table A9.1.15 – Potential sources of contamination in Section B: Mid Suffolk District Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
B1	Industrial estate	Rookery Farm, Diss, IP22 1RB. (609334E, 277106N)	The earliest reviewed historical mapping (NLS dated 1885-1900) indicates a farm. The site remains largely unchanged with some expansion and renovation of the buildings noted from the historical Google Aerial imagery. Google Maps indicates the site is currently still a farm and that a fabrication of metal equipment and welding business operates from the site.	Low
B2	Eastern Union railway line	Runs approximately northeast/ southwest across the draft Order Limits to the south-east of Gislingham. The draft Order Limits then cross the line again to the northwest of Needmarket.	The railways line is indicated on the earliest reviewed mapping (NLS, dated 1885-1900) and is indicated to be present through to the current day based on the historical Google Aerial imagery.	Low
B3	Former Mid Suffolk light railway line	Runs through the draft Order Limits approximately east to west.	The railways line is first indicated on the historical mapping dated 1888-1913 (NLS) as being under construction. The line opened in 1904 for goods traffic and was later closed in 1952 and subsequently decommissioned and dismantled.	Low
B4	Bramford Substation	Bullen Lane, Bramford	The site comprises a National Grid substation comprising substation infrastructure on hardstanding. The	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
		(609860E, 246042N)	earliest reviewed historical mapping (NLS, dated 1885-1900), shows the area labelled as Bullen Wood with no evidence of the substation. Aerial photography held by Historic England, dated 1962, indicates that tree clearance has taken place within Bullen Wood to facilitate the substation, and Google Earth aerial imagery from 2012 to 2021 shows the gradual expansion of the substation.	
PSC within 250m of the draft Order Limits				
B5	Rookery Farm – Historical landfill	Rookery Farm, Old Bury Road Wortham (609600E, 277200N)	Identified as a historical landfill from the Environment Agency data set - licenced to take inert waste from 1981 to 1991. The current land use, based on the most recent Google Aerial imagery dated 2023, indicates open scrub land.	Moderate
B6	Gislingham sewage treatment works	Thorham Road, Gislingham (607965E, 271977N)	Sewage treatment works. The treatment works is first identified on the earliest historical Google Aerial imagery dated 1999. The site has remained largely unchanged since the 1999 imagery.	Low
B7	Concrete products supplier	(608452E, 256735N)	The current land use consists of a concrete products manufacturer. The earliest reviewed historical mapping (NLS, dated 1885-1900) identifies the site as Grove Farm. The historical Google Aerial imagery shows the development of the concrete supplier site in 2003 to the northwest, the site has continued to expand to the northwest over time.	Low
B8	Historical Chalk Pit	Ipswich Road, Willisham IP8 4SIF (607316E, 249396N)	The earliest reviewed historical mapping (NLS, dated 1880's) indicates the site as a Chalk Pit, with a kiln also identified on the southern half of the site. By the mapping dated 1892 -1914 the southern half of the site is labelled as a Lime Works. By the mapping dated 1949-1973 the site is labelled as an Old Chalk Pit. The earliest available Google Aerial imagery dated 2000 shows the site covered with trees.	Low

Table A9.1.16 – Potential sources of contamination in Section C: Babergh District Council, Colchester City Council and Tendring District Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
C1	Thornbush Hall – Historical landfill	Bramford Ipswich (611500E, 245300N)	Identified as a historical landfill from the Environment Agency data set - licenced to take inert and commercial waste. A first input date is not shown; however, the licence was surrendered in Oct 1991. The current land use, based on the most recent Google Aerial imagery dated 2023, indicates the site to comprise mature trees.	High
C2	Former Great Eastern Railway – Hadleigh Branch	(607981E, 239730N)	The earliest reviewed historical mapping (NLS, dated 1885 to 1900), shows the Great Eastern Railway (Hadleigh Branch) which appears to be constructed predominantly at grade where the Order Limits cross the line. The maps indicates that during the early 1970's the Hadleigh Railway Branch was dismantled. Google Earth aerial imagery of the area is available from 2000 and shows the railway tracks have been removed.	Low
C3	Former RAF Raydon	Raydon (605758E, 239206N)	RAF Raydon is a former Royal Air Force station which was built in 1942 including a main runway area, accommodation and office facilities located to the south-east of the airfield. Historical aerial imagery (dated 1942 to 1946) from Historical England indicates runways, turning circles and hangers present on the site. In addition, firing butts are shown in the northeast corner and a bomb disposal area and ammunition dump in the northwest wooded area. The airfield officially closed in 1958 with much of the airfield now in agricultural use and some of the hangers/buildings used for industrial units.	Very high
C4	Former gravel pit	Ipswich Road, Dedham (603549E, 232798N)	The earliest reviewed historical mapping (NLS, dated 1888 to 1913) indicates the presence of a gravel pit, with slopes along the southern and	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			eastern boundary. However, by the mapping dated 1949-1973 the gravel pit is no longer shown. A review of the more recent Ordnance Survey maps indicates slopes still being present along the eastern boundary suggesting the site may not have been infilled.	
C5	Highways depot	A137, Ardleigh (605877E, 229532N)	Current land use is identified as a highways depot which appears to be used for parking with a large tank indicated on the southern half of the site. The earliest reviewed historical mapping (NLS, dated 1880s) indicates the site as open fields with a railway line forming the southern boundary of the site. The earliest available historical Google Earth Aerial imagery indicates a large mound of soil in the centre and potential earthworks, by the imagery dated 2006 the large tank is shown on the southern half of the site, and by the 2011 imagery the site is in use as a depot.	Moderate
C6	Great Eastern Railway – Colchester Line	Crosses the draft Order Limits at Ardleigh approximately north-east-south-west	The railway is first identified on the earliest reviewed historical mapping (NLS, dated 1880s) and has remained largely unchanged. The line appears to be within a cutting, based on the historical maps, in the section that crosses the draft Order Limits.	Low
C7	Scrap yard, Poplar Lane	Poplar Lane, Ipswich (611625E, 243155N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields which remains unchanged until the mapping dated 1949-1972 when a pit is indicated on the site. The scrap yard is first identified on the historical Google Aerial imagery dated 2000, and subsequently the site remains largely unchanged through the imagery editions.	Moderate
PSC within 250m of the draft Order Limits				
C8	Hintlesham Carriage Company and Marine and Auto Electrics	Hadleigh Road, Burstall, Ipswich (610699E, 243683N)	The site is currently in use as a workshop garage and car sales company. Historical mapping (NLS 1880s) indicates the site as Fen Farm with several buildings associated with	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			the farm shown. The site remains largely unchanged through the map editions. Historical Google Aerial imagery dated 2000 indicates farm style buildings present with a pond in the northern part of the site. By the imagery dated 2012 the pond has been infilled and the area covered with hardstanding and several cars are present. By the imagery dated 2017 the site has expanded to the south-east and more cars are present around the site.	
C9	Valley Farm Landfills	Poplar Lane, Spoughton (611300E, 243300N)	Identified as a historical landfill from the Environment Agency data set, named Valley Farm with several different licences/permits, The landfill took a variety of waste types from 1967, with the last licence surrendered in 1990. A review of the Google Aerial imagery dated 2023 indicates the area generally as open fields, however a farmhouse is indicated on part of the site closest to the draft Order Limits.	High
C10	Scrap yard, Ipswich Road	Ipswich Road, Dedham (603839E, 232846N)	The site is currently in use as a scrap yard. Historical mapping (NLS, dated 1888-1913) identifies the site as a gravel pit, that is subsequently extended to the south. It is anticipated that the gravel pit was infilled at some point as it appears to be at the same level as the surrounding land based on Google Street view.	Moderate
C11	Gun Hill Trading Estate	(603544E, 232520N)	A review of the readily available historical mapping (NLS, dated 1880s) indicates the site as open fields. A small-scale industrial estate is indicated on the historical Google Aerial imagery dated 2000 and remains largely unchanged at the current time. The site includes a variety of uses including H&S training providers, office supplies shop, car sealer, vehicle repair garage, car body shop etc.	Low
C12	Colchester Service Station	A12, Birchwood Road, Dedham	Historical mapping (NLS, dated 1880s) identified a large house named Upper Grove with surrounding grounds. This	Low as the fuel station is

PSC No	Name	Location	Description	Potential for Generating Contamination
		(603350E, 231260N)	remains largely unchanged until a small fuel station is identified in the western part of the site (which is outside of the study area) on the Google Aerial imagery dated 2000. A hotel is indicated in the south of the site on the imagery dated 2012.	outside of the study area
C13	Steel Fabricator	Rookery Farm, Ardleigh (605364E, 230595N)	Historical mapping (NLS, dated 1880s) indicates the site as Rookery Farm. The site remains largely unchanged until the present day when a steel fabricator company is indicated on the site.	Low
C14	Wick Lane Quarry	(603888E, 229408N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and the site remains largely unchanged until the extraction of sands and gravels commenced in 2022 based on the Google Aerial imagery.	Low
C15	Crown Quarry	Wick Lane, Ardleigh (602841E, 229442N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and the site remains largely unchanged until sand and gravel extraction commenced on the site around 2009, with the northern part of the site used for car boot sales, based on the Google Aerial imagery.	Low

Table A9.1.17 – Potential sources of contamination in Section D: Colchester City Council

PSC No	Name	Location	Description	Potential for generating contamination
PSC within draft Order Limits				
D1	Former RAF Boxted	(601577E, 230567N)	RAF Boxted is a former Royal Air Force station which was opened in 1943. Evidence from historical aerial imagery (Historic England, dated 1942 to 1946) indicates runways, turning circles and the hangers present on the site. Ammunition store and a bomb dump is located to the east of the site. The airfield officially closed in 1947 with much of the airfield being sold for agricultural use with some of the former	Very high

PSC No	Name	Location	Description	Potential for generating contamination
			hangers/buildings used for industrial uses and a museum.	
D2	Great Eastern Railway – Marks Tey, Sudbury and Bury branch	Cuts through draft Order Limits north-west to south-east	The railway is first indicated on the earliest reviewed historical mapping (NLS, dated 1880s) and has remained largely unchanged. The line appears to be constructed predominantly within a cutting, based on the historical maps, in the section that crosses the draft Order Limits.	Low
D3	Harwich Town Microbrewery	Salmon's Lane, Colchester (588460E, 223825N)	Historical mapping (NLS, dated 1880s) indicates the southern part of the site as part of Up Hall farm and remains largely unchanged until the barn like structures is indicated on the Google Aerial imagery dated 2000. The imagery dated 2005 indicates the site has expanded to the northeast and then remains largely unchanged through the map editions.	Low
PSC within 250m of the draft Order Limits				
D4	Sewage treatment works	Fiddlers Hill, Colchester (593181E, 226916N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields, which remain largely unchanged until a small sewage treatment works managed by Anglian Water is indicated on the Google Aerial imagery dated 2000. The site discharges to the River Colne.	Low
D5	Concrete and flooring yard	Horkesley Road, Boxted CO4 5HS (599335E, 230100N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields which remains largely unchanged until a small building is indicated along the northern boundary of the site on the mapping dated 1937-1961. The Google Aerial imagery dated 2000 shows the site has been developed with a number of buildings and an associated storage yard and parking shown. The site remains largely unchanged until the 2020 dated mapping when the site starts to extend towards the south.	Low
D6	Food storage and delivery depot	Boxted Road, Great	Historical mapping (NLS, dated 1880's) indicates the site is occupied by Lodge Farm. The site remains largely	Low

PSC No	Name	Location	Description	Potential for generating contamination
		Horkesley CO6 4AP (598121E, 231230N)	unchanged until the mapping dated 1949-1973 where the site is indicated to have expanded to the north-west with the buildings labelled as Poultry Houses. Google Aerial imagery dated 2000 shows the site has expanded to the south of Boxted Road, and by the imagery dated 2005 the site has continued to expand to the north with a number of industrial buildings. By the 2009 dated imagery the site has continued to expand to the east, with the addition of further buildings and an access road to Boxted Road and another building has been added to the south of the site. By the 2020 dated imagery the site has further expanded to the east with another industrial unit present.	

Table A9.1.18 – Potential sources of contamination in Section E: Braintree District Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
E1	Great Eastern Railway – Witham and Braintree branch	Cuts through draft Order Limits north-west to south-east	The railway is first indicated on the earliest reviewed historical mapping (NLS, dated 1880s) and has remained largely unchanged. The line appears to be constructed within a cutting, based on the historical maps, in the section that crosses the draft Order Limits.	Low
PSC within 250m of the draft Order Limits				
E2	Sewage treatment works	Coggeshall Road, Braintree (585903E, 221206N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and the site remains largely unchanged. A sewage treatment works managed by Anglian Water is first indicated on the Google Aerial imagery dated 2000. The 2022 dated historical Google Aerial imagery indicates the potential stockpiling of material on the western part of the site.	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
E3	Disused sewage treatment works	Park Gate Road, Braintree (582814E, 219110N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and the site remains largely unchanged. The historical Google Aerial imagery dated 2000 and on indicates the site and treatment works to be disused based on the apparent overgrown nature of the vegetation.	Low

Table A9.1.19 – Potential sources of contamination in Section F: Chelmsford City Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
F1	Brittons Hall Farm – Roxwell landfill and quarry	Brittons Hall Farm, Chignall St James, Chelmsford (567210E, 209160N)	The site is identified from the Environment Agency data set as a current landfill The site has a current environmental permit for the disposal of non-hazardous waste. A review of the Essex County Council planning portal indicates that planning permission for minerals extraction was granted in 1993. A review of the Google Aerial imagery suggests that landfilling has finished, and the site has been restored based on the 2017 dated imagery.	High
F2	Boyton Cross – Historical landfill	Roxwell, Chelmsford (566300E, 208100N)	Identified from the Environment Agency data set as a historical landfill. The records indicate the first input was in 1961 and the last input in 1972. The sites received industrial, commercial, and household waste. The 2000 dated Google Aerial imagery indicates a track and vehicles on the southern part of the site, with the remainder of the site open fields. Through the imagery dates the parking area to the south continues to develop, with some earthworks taking place between the 2009 and 2017 imagery where it is then indicated as a car park with hard standing.	High
F3	Chelmsford Compressor Station	Roxwell Road, Boyton Cross, Chelmsford	Historical mapping (NLS, 1880's) indicates the site as open fields and remains largely unchanged until 2000.	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
		(566056E, 208553N)	The National Grid gas station infrastructure is first indicated on the Google Aerial imagery dated 2000 and subsequently remains largely unchanged.	
F4	Newney Green East – Historical Landfill	(565600E, 206400N)	Identified from the Environment Agency data set as a historical landfill. The sites operation dates are not shown in the data set; however, it is indicated the site received inert waste. The Google Aerial imagery dated 2023 indicates a pond/lake to the southwest boundary of the site with the remainder of the site open fields.	Moderate
PSC within 250m of the draft Order Limits				
F5	Sheepcotes Minerals extraction site	Braintree Road, Little Waltham (571923E, 213907N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and the site remains largely unchanged until the Google Aerial imagery dated 2022 which indicates mineral extraction has commenced at the site.	Low
F6	Roxwell Quarry – Historical Landfill	Boyton Cross, Roxwell, Chelmsford (565600E, 208400N)	Identified from the Environment Agency data set as a historical landfill with two permits. The records indicate the first input was in 1952 and the last input in 1969. The site received inert, industrial, commercial, and household waste. The information also indicates the site has gas control measures. The 2023 Google aerial imagery indicates a pond feature along the northern boundary, with the remainder of the site open fields or scrub land.	High

Table A9.1.20 – Potential sources of contamination in Section G: Brentwood Borough Council and Basildon Borough Council

PSC No	Name	Location	Description	Potential for generating contamination
PSC within draft Order Limits				
G1	Great Eastern Railway – Colchester Line	Cuts through draft Order Limits north-east to south-west at Ingatestone	The railway is first indicated on the earliest reviewed historical mapping (NLS, dated 1880s) and has remained largely unchanged. The line appears to be constructed within a cutting, based on the historical maps, in the section that crosses the draft Order Limits.	Low
G2	Sewage treatment works	Stock Lane, Ingatestone (566155E, 199087N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields, which remains largely unchanged until a sewage treatment works managed by Anglian Water, is indicated on the Google Aerial imagery dated 2000.	Low
G3	Great Eastern Railway – Southend line	Cuts approximately east to west to the west of Billericay.	The railway is first indicated on the historical mapping (NLS, dated 1885-1900) and has remained largely unchanged. The line appears to have been constructed predominantly at grade, based on the historical maps, in the section that crosses the draft Order Limits.	Low
G4	London, Tilbury, and Southend Railway	Cuts through the draft Order Limits approximately east to west to the west of Basildon	The railway is first indicated on the historical mapping (NLS dated 1885-1900) and has remained largely unchanged. The line appears to have been constructed predominantly on an embankment, based on the historical maps, in the section that crosses the draft Order Limits.	Low
G5	Former sewage disposal works	Tilbury Road, Basildon (564024E, 188319N)	Historical mapping (NLS, dated 1944-1972) indicates the site as a sewage disposal works. The site is indicated to comprise several tanks and sludge beds to the south of the site. A review of the historical Google Aerial imagery, dated 2000, indicates the site has been redeveloped into a parking area for the surrounding golf course and therefore it is anticipated as part of planning any contamination from the sludge beds would have been remediated.	Low

PSC No	Name	Location	Description	Potential for generating contamination
PSC within 250m of the draft Order Limits				
G6	Sewage treatment works	Old Church Lane, Mountnessing (565019E, 195931N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields, which remains largely unchanged until a sewage treatment works managed by Anglian Water, is indicated on the earliest Google Aerial imagery dated 2000.	Low
G7	Car dealer	Southend Arterial Road (564997E, 189616N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields. The site remains largely unchanged until the mapping dated 1956-1961 where a building is shown along the northern boundary. A car dealer, vehicle washing facility and garage is indicated on the Google Aerial imagery dated 1999 and remains largely unchanged.	Low
G8	Car dealer	West Mayne, Basildon (565950E, 189577N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and remains largely unchanged until the car dealership that first appears on the historical Google Aerial imagery dated 2008.	Low

Table A9.1.21 – Potential sources of contamination in Section H: Thurrock Council

PSC No	Name	Location	Description	Potential for Generating Contamination
PSC within draft Order Limits				
H1	Basildon Substation	Horndon on the Hill, Basildon (565831E, 187895N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields, which remain largely unchanged until the substation is indicated on the Google Aerial imagery dated 1999.Over time the site has expanded to the west.	Low
H2	Ongar Hall Farm – Palmer Klien – Thurrock Council potentially	Brentwood Road, Orsett (565088E, 184593N)	The site of Ongar farm and the location of the company Palmer and Klien. Historical mapping (NLS, 1880's) indicates Ongar Hall farm and remains largely unchanged. The historical Google Aerial imagery dated 1999 indicates a	Moderate

PSC No	Name	Location	Description	Potential for Generating Contamination
	contaminated land		farm/industrial style buildings present on the site. The site has been identified by Thurrock Council as potentially contaminated land called Palmer and Klien. An online review and a review of the planning portal indicates that Palmer and Klien deals with meat waste processing and the manufacture of oils and fats, and the site is used for the collecting, processing and blending of animal fats and vegetable oils.	
H3	Gas valve compound – Thurrock Council potentially contaminated land	Horndon on the Hill, Orsett (566111E, 183866N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and remains largely unchanged. The gas valve compound is first indicated on the Google Aerial imagery dated 2000 and remains largely unchanged. The site is identified by Thurrock Council as potentially contaminated land, however the site has been developed and been through the planning system and any contamination at the site is anticipated to have been dealt with through the planning regime.	Low
H4	Former brickyard – Thurrock Council potentially contaminated land	Brentwood Road, Orsett (565339E, 183683N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields and remains largely unchanged until the mapping dated 1945-1965 where a brickworks is indicated. The Google Aerial imagery dated 2000 indicates the site as agricultural fields and remains largely unchanged through to the present day.	Low
H5	Buckingham Hill Historical Landfill and recycling centre	Buckingham Hill Road, Linford (566900E, 181100N)	Historical Mapping (NLS, dated 1880s) indicates the site as open fields. By the mapping dated 1937-1961 sand and gravel pits are indicated on the site. The site is identified from the Environment Agency data set as a historical landfill and the location of a	High

PSC No	Name	Location	Description	Potential for Generating Contamination
			civic amenity waste centre. Waste was first input into the site in 1977 with the last input in 1991. The site was licenced to take industrial, commercial, household waste and liquid sludge. Historical Google Aerial imagery dated 1999 indicates the site had already been fully restored at that time.	
H6	Tarmac Orsett Quarry	Buckingham Hill Road, Linford (567123E, 180992N)	Historical mapping (NLS, dated 1937-1961) indicates the northern section of the site as a pit. Historical Google Aerial imagery dated from 1999 onwards indicates the extraction progress of the site from the north to the south of the site. A review of the Thurrock Council planning portal indicates the site has been partially restored with inert fill.	Moderate
H7	Collingwood Farm – Historical landfill	Brentwood Road, Orsett (566600E, 181010N)	Identified from the Environment Agency data set as a historical landfill. Waste was first input into the site in 1986 with the last input in 1994. The site was licenced to take inert, industrial, commercial, and household waste. Historical Google Aerial imagery dated 1999 indicates the site is in the process of being restored, with the site indicated to be fully restored by the 2011 dated aerial imagery.	High
H8	Clearserve Quarry and landfill	Holford Road, Linford (566683E, 180134N)	Historical mapping (NLS, dated 1888-1913) indicates a gravel pit on the northeast part of the site. By the 1949/1972 mapping the gravel pit has expanded. Historical Google Aerial imagery dated 1999 indicates the site in operation, and by 2004 imagery the site has expanded to the southwest. The site is identified from the Environment Agency data set as a current landfill. The licence for the site was issued in 2006 for the input of inert waste.	Moderate

PSC No	Name	Location	Description	Potential for Generating Contamination
H9	Gravel pits – not marked as landfills	Buckingham Hill Road, Linford (566819E, 179845N)	Historical mapping (NLS, dated 1937-1961) indicates the site is occupied by sand and gravel pits. Historical aerial imagery held by Historic England dated 1946 shows a very small area of the site along the eastern boundary being extracted. By the aerial photography dated 1953 the extraction has vastly expanded to the south. By the historical Google Aerial imagery dated 1999 the site is occupied by industrial plant which is discussed in PSC H22.	Low
H10	London, Tilbury, and Southend Railway	Cuts through the draft Order Limits approximately east to west to the north of Tilbury.	Historical mapping (NLS, dated 1880's) indicates the presence of the London, Tilbury, and Southend railway. The line appears to be predominantly constructed at grade, based on the historical maps, in the section that crosses the draft Order Limits.	Low
H11	Tilbury Power Station – current and historical landfills	Tilbury (567000E, 176221N)	The area around Tilbury Docks and the former Tilbury Power Station contains several related current and historical landfill permits based on the Environment Agency data set. The individual permitted waste sites licences within the area are indicated to have expired but were issued between 1978 and 2001 for the disposal of industrial waste 'Factory Curtilage' anticipated to include the ash waste product from the power station. An environmental permit was issued in 2020 for the entire area. There are two historical landfill permit areas noted, the permit for the southwest section was dated 1978 and was for the landfilling of inert waste. The other historical permit to the east was issued in 1968 and was for inert, industrial, and liquid sludge	High

PSC No	Name	Location	Description	Potential for Generating Contamination
H12	Tilbury Electrical Substation	Tilbury Docks (566185E, 176186N)	Historical mapping (NLS, dated 1880's) indicates the site as open fields. A review of the historical aerial imagery from Historic England undertaken in the 1950's shows the site to be undeveloped. By the mapping dated 1944-1970 the site is indicated to be occupied by a works along the southern boundary of the site. The electrical substation is first indicated on the Google Aerial imagery dated 1999. By the imagery dated 2010 the site has extended to the east	Low
H13	Former Tilbury Power Station	(566050E, 175751N)	An online review indicates that the former Tilbury power station was split into two sections Tilbury A and Tilbury B. Tilbury A began construction in 1951 and was commissioned in 1961. Tilbury A ceased operation in 1981 and has since been demolished in stages, starting in 1999. Tilbury B began construction in 1961 and was opened in 1968. In 2011 work began to convert Tilbury B from burning coal to burning biomass, however the project was terminated in 2013 and power generation at the site ceased and demolition was started in 2017. Waste from the power stations is indicated to have been disposed of in the surrounding landfills. The areas surrounding the power station were used for coal storage, ash lagoons, machinery storage. The power station was constructed on reclaimed former marshland that was in use as agricultural land. Much of the area of the power stations has been converted to docks in the western end, however much of the eastern end remains undeveloped.	Very high
PSC within 250m of the draft Order Limits				

PSC No	Name	Location	Description	Potential for Generating Contamination
H14	Industrial units – Thurrock Council potentially contaminated land	Lower Dunton Road, Basildon (565799E, 187307N)	Historical mapping (NLS, dated 1880s) indicates the site as open fields and remains largely unchanged. The 1999 dated Google Aerial imagery indicates the site occupied by several long industrial style buildings which remain largely unchanged. Evidence from Thurrock Council suggests the site as potentially contaminated land based on the site being used as a poultry farm.	Moderate
H15	Balgowrie – Thurrock Council potentially contaminated land	Lower Dunton Road, Basildon (566093E, 187137N)	Historical mapping (NLS, dated 1920s-1940s) indicates buildings on the site which remain largely unchanged. The earliest available historical Google Aerial imagery dated 1999 shows the site in use as vehicle storage and farm buildings. By the 2004 dated imagery the site has extended to the north and further buildings have been built. By the 2018 imagery the site has been predominantly cleared and the buildings demolished and by 2022 the site has been developed into a small housing estate. It is assumed that the new housing would have been through the planning system and therefore any contamination at the site dealt with through the planning regime. The site is identified by Thurrock Council as potentially contaminated land and further information has been requested from them.	Very low
H16	Service stations along Stanford Le Hope By Pass – Thurrock Council potentially contaminated land	(566446E, 181707N)	Historical mapping (NLS) indicates the site as open fields and remains largely unchanged until the historical Google Aerial imagery dated 1999 which indicates service stations are present to the north and south of the Stanford Le Hope by-pass. The 2004 imagery indicates the fuel station part of the southern service station has been redeveloped. The 2011 imagery indicates the fuel	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			station part of the northern service station is being developed and by the 2017 imagery the car parking within the northern service station has been extended.	
H17	Orsett Industrial Park	Stamford Road, Orsett (566521E, 181555N)	Historical mapping (NLS, 1880's) indicates the site as open fields. By the mapping dated 1920s to 1940s buildings (unspecified) are indicated on the site. By the mapping dated 1944-1972 the buildings are labelled as a garage. Historical Google Aerial imagery from 1999 to the present day indicates the site remains largely unchanged. The site is identified by Thurrock Council as potentially contaminated land. The site is identified as a small industrial estate that comprises the storage of vehicles to the south and office/industrial buildings to the north of the site.	Low
H18	Tanglefoot – Thurrock Council potentially contaminated land	Sandown Close, Orsett (566369E, 181548N)	Historical mapping (NLS, 1880's) indicates the site as open fields. By the mapping dated 1937-1961 two buildings (unspecified) are indicated on the site. The Google Aerial imagery dated 1999 indicates the same buildings on the site as the historical mapping. By the imagery dated 2010 a new housing estate has been built on the site. The site is identified by Thurrock Council as potentially contaminated land., however the site has recently been developed, therefore it is assumed that the new housing would have been through the planning system and any contamination at the site dealt with through the planning regime.	Very low
H19	Linford Quarry – Current and historical landfill	Buckingham Hill Road, Linford (566400E, 179800N)	Identified from the Environment Agency data set as a current and historical landfill. Waste was first input into the historical landfill part of the site in 1984 with the last input in	Moderate

PSC No	Name	Location	Description	Potential for Generating Contamination
			1993. The site was licenced to take inert waste. The current licence was issued in 2006 for the input of inert waste.	
H20	Tarmac Bagging Plant	Buckingham Hill Road, Linford (566819E, 179845N)	Historical mapping (NLS, dated 1888-1913) shows the site with several roads crossing the area. By the mapping dated 1937-1961 the site is occupied by sand and gravel pits and the roads are no longer shown. Historical Google Earth Aerial imagery dated 1999 shows the site layout to be similar to the current day, however a few further buildings are added through the imagery editions. The site is currently owned by Tarmac and comprises a bagging plant facility.	Moderate
H21	Low Street – historical landfill and former brickworks	Low Street, Tilbury (567300E, 177700N)	Historical mapping (NLS, dated 1888-1913) indicates the site as old gravel pits. On the mapping dated 1944-1972 the site is indicated to contain a brick works, to the west of the site a spur from the railway line extends south onto the site, and a depot is indicated. The site is also identified from the Environment Agency data set as being covered by two historical landfill permits. Waste was first input into the site in 1956 and the last input was in 1977. The site was licenced to take industrial and commercial waste. The historical Google Aerial imagery dated 1999 indicates the northwest and southern parts of the site are grassed over with some trees. The eastern corner appears occupied by a waste recycling centre. The site remains largely unchanged however the north-west part of the site is intermittently used for parking/storage of equipment.	High

PSC No	Name	Location	Description	Potential for Generating Contamination
H22	Sheep wash	Church Road, West Tilbury (566731E, 177536N)	Historical mapping (NLS, dated 1880's) indicates the site as a farm, which remains largely unchanged. The site is identified by the Thurrock Council as potentially contaminated land and marked as a sheep wash.	Low
H23	Euromix Concrete	Fort Road, Tilbury (565765E, 176272N)	Historical mapping (NLS, dated 1860-1940s) indicates the site as being within the West Tilbury Marshes. By the mapping dated 1949-1972 pylons and overhead lines are indicated across the site with the access road for a works along the southern boundary of the site. Historical Google Aerial imagery dated 2006 suggests the start of construction of the concrete mixing plant at the site which has continued into the present day.	Low
H24	Waste Recycling Centre	Fort Road, Tilbury (565531E, 175761N)	Historical mapping (NLS, dated 1860s-1940s) indicates the site is within West Tilbury Marshes. By the mapping dated 1937-1961 the site is indicated as a works with several tanks present. Google Aerial imagery dated 1999 indicates the site as open land and remains largely unchanged until the Google Aerial imagery dated 2018 which indicates the waste recycling centre with several stockpiles of unknown material.	Low
H25	Langdon Golf Course – Thurrock Council potentially contaminated land	Lower Dunton Road, Horndon on the Hill (566206E, 185641N)	Historical mapping (NLS, dated 1880s) identifies the site as open fields with a road running along the eastern boundary of the site. The site remains largely unchanged until the mapping dated 1944-1972 when a circular feature is indicated along the western boundary of the site. A review of the Thurrock Planning Portal indicates the site remained as open fields until the development of the golf course in 2002. The site has recently received planning permission for the redevelopment of	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			the clubhouse and facilities and the construction of a care home. Therefore, it is assumed that the new development would have been through the planning system and any contamination at the site dealt with through the planning regime	
H26	Area to the east of St Cleres Golf Course – Thurrock Council potentially contaminated land	Burts Lane, Standford Le Hope (567614E, 181705N)	Historical mapping (NLS, dated 1880s) identifies the site as open fields with a small area filled with water within the north of the site and St Cleres Hall is indicated along the northern boundary. The Google Aerial imagery dated 1999 indicates the site as a golf course. By the imagery dated 2015 the site is undergoing redevelopment and by the 2017 mapping the development has been completed. The site is identified by Thurrock Council as potentially contaminated land. A review of the Thurrock Planning Portal indicates a planning application was submitted in 2010 for the redevelopment of the eastern part of the site to housing, and there is evidence of planning conditions relating to contamination being discharged.	Low
H27	Former Orsett Camp – Thurrock Council potentially contaminated land	Southfields, Orsett (566050E, 181207N)	Historical mapping (NLS, dated 1880s) identifies the site as open fields. By the mapping dated 1937-1961 the site is indicated as Old Kennels Farm with several large buildings across the site. By the mapping dated 1949-1972 the site is labelled as Orsett Camp. An online review indicates that the camp was originally opened in 1916 until its removal in the 1960's. The online review suggests the site was quarried and infilled prior to housing being erected on the site in the early 1990's. The site is identified by Thurrock Council as potentially contaminated land. However, as the site has been	Low

PSC No	Name	Location	Description	Potential for Generating Contamination
			redeveloped for residential use, it is assumed that the development would have been through the planning system and any contamination at the site dealt with through the planning regime	
H28	Kings Head Pub – Thurrock Council potentially contaminated land	Blue Anchor Lane, West Tilbury (566080E, 178000N)	Historical mapping (NLS, dated 1880s) indicates a building on the site within the village of West Tilbury. By the mapping darted 1888-1913 the site is labelled as an Inn. The site has remained largely unchanged through to the present day. The site is identified by Thurrock Council as potentially contaminated land. There are no details on contamination held within the approved planning permission for the site, however as the permission is approved for the change of use of the listed building to residential, it is assumed that any contamination would have been dealt with through the planning regime.	Low
H29	Tilbury Docks Substation – Thurrock Council potentially contaminated land	Station Approach Road, Tilbury Docks (565454E, 176318N)	Historical mapping (NLS, dated 1880's) identifies the site as open fields adjacent to Tilbury Fort Common. By the mapping dated 1937-1961 the site contains a pylon and by the mapping dated 1949-1973 the site is indicated as a works with overhead lines feeding into the site.	Low

9.4.16 The initial assessment has identified 62 sites with a low or very low potential for generating contamination and these have been scoped out of further assessment on the basis that significant effects in relation to contamination are unlikely.

9.4.17 The initial assessment identified 26 sites with a moderate or above potential for generating contamination and these have been taken forward for further assessment. Sites identified as a moderate and above risk classification following the further assessment are presented on Figure 9.6: Sites with Moderate or Above Risk Classification in Volume II.

Further Assessment

Section A: South Norfolk Council

Site name/ref	PSC A6 – Mangreen Quarry (directly adjacent to the north and west of the draft Order Limits)
Site location and description	Mangreen Quarry is a sand and gravel quarry located either side (to the south and north) of Mangreen Lane and to the east of Ipswich Road. (621883E, 302924N) The site is located approximately 5 km south of Norwich. The site comprises an active sand and gravel extraction site which is predominantly surrounded by open fields and areas of woodland.
Site history	Historical mapping (NLS, dated 1880s) indicates the site as open fields which remained largely unchanged until the gravel extraction site first identified on the 2011 historical Google Aerial imagery. Excavation commenced in the central and northern section of the site to the north of Mangreen Lane. The site has expanded over time to the west and south and east, with some sections in the west also being restored.
Other pertinent information	A review of Norfolk County Councils planning portal indicates that the site has been restored with inert waste and returned to agricultural use. Restoration with inert waste is ongoing within the areas where extraction is still underway. The site currently has planning permission for the import and recycling of waste and for use as a highway depot.
Geology	The site is indicated to be underlain by superficial deposits predominantly comprising the Lowestoft Formation (Diamicton), with the Leet Hill sand and gravel member underlying the Lowestoft Formation and indicated to outcrop in the north-eastern corner of the site. The bedrock is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) of the White Chalk Subgroup.
Hydrogeology	The White Chalk Formation which forms the bedrock at the site, is classified as a Principal Aquifer. The Lowestoft Formation (Diamicton) is indicated to be a Secondary Undifferentiated Aquifer and the Leet Hill sands and gravel member as a Secondary A Aquifer. The site is located within a groundwater Source Protection Zone (SPZ)3, with the far north-eastern corner just within a SPZ2, and the northern part of the site is located within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	No surface water statutory main rivers are located within 500m of the site. The north-eastern corner of the site is located within a Nitrate Vulnerable Zone.

Potential for generating contamination	Moderate – as it is understood the site is being restored with inert material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates asbestos and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Inert fill/Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated	Medium	Low
	Leaching Migration Deposition	Groundwater (high sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials based on it only accepting inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated	Medium	Low

Site name/ref	PSC A10 – Near Shelfanger Road – historical landfill (approximately 90m northwest of the draft Order Limits)
Site location and description	Located to the east of Shelfanger Road and to the east of Ipswich Road. (611086E, 282410N) The site is located approximately 2.2 km north of Roydon. The site currently comprises a storage and removals company in the northeast part of the site and a field in the southern part of the site. It also appears part of the site is currently utilised for material storage comprising aggregates and demolition rubble. The site is surrounded by open fields.
Site history	Historical mapping (NLS, dated 1880's) indicates the site as open fields, with the area surrounding the site also comprising open fields. The Environment Agency data identifies the landfill on the site operated between 1974 and 1975. The More recent Google Aerial imagery dated 1999 indicates the presence of industrial type buildings to the north of the site and the southern part as an open field. The imagery may also indicate some open storage of materials within the site. The site is currently used by a removals and storage company.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill that was licenced to take inert waste from 1974 to 1975.
Geology	The BGS Geoindex indicates that the site is underlain by superficial deposits predominantly comprising the Lowestoft Formation (Diamicton), with Head deposits indicated to be present along the northern part of the site. The bedrock underlying the superficial deposits is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) of the White Chalk Subgroup.
Hydrogeology	The White Chalk Formation which forms the bedrock at the site, is classified as a Principal Aquifer. The Lowestoft Formation (Diamicton) and Head deposits are classified to be a Secondary Undifferentiated Aquifer. The site is not located within a SPZ or drinking water safeguarded area.
Hydrology	A tributary of the River Waveney is located approximately 100m northeast of the site.
Potential for generating contamination	Moderate – as the site received inert waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.

Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Inert fill/ Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only being licenced to accept inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated	Medium	Low
	Leaching Migration Deposition	Groundwater (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials as it was only licenced to accept inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
		Surface water (medium sensitivity)		Mild	Very Low

Site name/ref	PSC A13 – Roydon Fen -Historical Landfill (approximately 160m east of the draft Order Limits)
Site location and description	Located along Potash Fen (a small lane which leads to Tottington Lane) and is approximately 1km south-east of Roydon (610200E, 279500N) and directly south of Roydon Fen Local Nature Reserve. The site currently comprises the northern part of an open field located to the north and south of Potash Fen. The site contains mature hedgerows and trees along the field boundaries.
Site history	Historical mapping (NLS, dated 1880's) identifies the site comprises part of a larger field to the south of Roydon Fen. The River Waveney is indicated approximately 150m to the south of the site. The Environment Agency data indicates the site was utilised for the deposition of liquid sludge waste in the 1970's. Google Aerial imagery dated 1999 indicates the site as open fields and appears to have remained largely unchanged through to the present day.
Other pertinent information	Identified as a historical landfill from the Environment Agency data set, and it is indicated that liquid sewage sludge was deposited at the location in the 1970s.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the River Terrace Deposits. The bedrock is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) of the White Chalk Subgroup.
Hydrogeology	The White Chalk Formation, which forms the bedrock at the site, is classified as a Principal Aquifer. The River Terrace Deposits are classified as Secondary A Aquifer. The site is not located within a groundwater SPZ and is not within a drinking water safeguarded area for groundwater.
Hydrology	The River Waveney is located approximately 150m south of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, organic and inorganic compounds, polychlorinated biphenyls (PCBs), micro-organisms, hydrocarbons and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated	Medium	Low
	Leaching Migration Deposition	Groundwater (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
		Surface Water (medium sensitivity)		Mild	Very Low

Section B: Mid Suffolk District Council

Site name/ref	**PSC B5 – Rookery Farm – historical landfill (approximately 35m east of the draft Order Limits)**
Site location and description	Located to the south of Old Bury Road, west of Wortham (609600E, 277200N) The site is located approximately 3 km south of Roydon. The site currently comprises a partially wooded area with Old Bury Road to the north and agricultural fields to the west, south and east.
Site history	Historical mapping (NLS, dated 1880's) identifies the site as an area of woodland, with the area surrounding the site comprising open fields. The Environment Agency data indicates a landfill was operated at the site between 1981 and 1991 which was licenced to receive inert waste. Google Aerial imagery dated 1999 indicates the area as restored to farmland, and it appears the site remains largely unchanged through to the present day.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill that was licenced to take inert waste from 1981 to 1991.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the Lowestoft Formation (Diamicton), with the Croxton Sand and Gravel Member outcropping in the southern part of the site. The bedrock is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culver Chalk Formation and Portsdown Chalk Formation (Undifferentiated) of the White Chalk Subgroup.
Hydrogeology	The White Chalk Formation, which forms the bedrock at the site, is classified as a Principal Aquifer. The Lowestoft Formation (Diamicton) is classified as a Secondary Undifferentiated Aquifer with the Croxton Sand and Gravel Member classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a drinking water safeguarded area for groundwater.
Hydrology	A small stream is located approximately 110m north of the site.
Potential for generating contamination	Moderate – as the site received inert waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater

	Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Inert fill/ Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only being licenced to accept inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (high sensitivity)	Unlikely. The site is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only being licenced to accept inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
		Surface Water (low sensitivity)		Mild	Very Low

Section C: Babergh District Council, Colchester City Council and Tendring District Council

Site name/ref	PSC C1 – Thornbush Hall – historical landfill (Inside of the draft Order Limits)
Site location and description	Located to the west of The Grindle, Bramford (609600E, 277200N) The site is located approximately 0.8 km north-west of Sproughton. The site currently comprises a predominantly wooded area surrounded by agricultural fields. Buildings are noted on the east and west boundary of the site. A stream is noted to run through the southern boundary of the site.
Site history	Historical mapping (NLS, dated 1880's) identified the site as an area of open field, with the area surrounding the site also comprising open fields, a stream is shown running along the southern boundary of the site. Historical Google Aerial imagery dated 1945 shows the site as open fields. The Environment Agency data indicates a landfill was operated at the site up until 1991 when the licence was surrendered. The historical Google Aerial imagery dated 2000 shows an area of scrub land, and by the imagery dated 2015 the entire site has become woodland
Other pertinent information	Identified from the Environment Agency data set as a historical landfill that was licenced to take inert and commercial waste. A first input date is not shown within the data set; however, the licence was surrendered in Oct 1991.
Geology	The BGS Geoindex indicates that the superficial deposits at the site are absent. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The Thames Group which forms the bedrock at the site, is classified as unproductive strata. The site is not located within a groundwater SPZ and is not within a drinking water safeguarded area for groundwater.
Hydrology	A stream is noted to flow along the southern boundary of the site, towards the River Gipping which is located approximately 600m to the east of the site.
Potential for generating contamination	High – as the site received inert and commercial waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface Water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Likely. The site is only partially located within the draft Order Limits. At this location the Project proposals are for diverting third-party infrastructure that includes undergrounding, therefore it is likely that any contaminated fill material could be disturbed during construction and construction workers could encounter such material and/or landfill/ground gases.	Medium	Moderate
	Leaching Migration Deposition	Groundwater (low sensitivity)	Likely. The site is only partially located within the draft Order Limits. At this location the Project proposals are for diverting third-party infrastructure that includes undergrounding, therefore it is likely that any contaminated fill materials could be disturbed/mobilised during construction.	Mild	Moderate
		Surface water (low sensitivity)		Mild	Moderate

Site name/ref	PSC C3 – Former RAF Raydon (Inside of the draft Order Limits)
Site location and description	Located to the north-east of Raydon (605758E, 239206N) The site currently comprises agricultural land and a small industrial park (Notley) uses former hangars/buildings and hardstanding areas associated with a previous use as an RAF station.
Site history	Historically, the site was RAF Raydon, a former Royal Air Force Station. Historical mapping (NLS, dated 1880's) indicates the site as open fields, which remain largely unchanged until RAF Raydon was built in 1942 with the main runway area present approximately east west through the northern part of the site, and further runways crossing the main runway at different orientations. Accommodation and office facilities were indicated to be present to the south-east of the airfield, and further buildings for the 'admin site', 'technical site' and 'mess site' located to the east of the airfield. Evidence from historical aerial imagery (Historic England, dated 1942 to 1946) shows the runways, turning circles and the hangers present on the site. Firing butts are shown in the northeast corner and a bomb disposal area and ammunition dump in the north-west wooded area. The airfield officially closed in 1958 with much of the airfield now in agricultural use. A plan obtained of the former RAF Raydon indicates that the areas crossed by the draft Order Limits comprised the central part of the main runway and the firing butts in the north-east of the site. A section of the draft Order Limits does also cross the area marked as a fuel store, however this part of the draft Order Limits currently proposes only to use existing road infrastructure.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the Lowestoft Formation (Diamicton). The bedrock is indicated to comprise the Red Crag Formation.
Hydrogeology	The Lowestoft Formation (Diamicton) is classified as a Secondary Undifferentiated Aquifer. The bedrock of the Red Crag Formation is classified as a Principal Aquifer. The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Potential for generating contamination	Very high
Potential contaminants	Heavy metals, fuels, hydrocarbons and additives, organic solvents, asbestos, radium, coal tar, per- and polyfluorinated substances (PFAS), unexploded ordnance and bombs
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Likely. The Project proposals include undergrounding through the site and therefore it is likely that any contaminated fill material could be disturbed during construction and construction workers could encounter such material and/or landfill/ground gases. This may include UXO/UXB.	Severe	High
	Leaching Migration Deposition	Groundwater (high sensitivity)	Likely. The Project proposals include undergrounding through the site and therefore it is likely that any contaminated fill materials could be disturbed/mobilised during construction.	Severe	High

Site name/ref	PSC C5 – Highways Depot (inside of the draft Order Limits)
Site location and description	Located to the north of Little Bromley Road and to the south-west of Harwich Road (605877E, 229532N), the Great Eastern Railway line to Colchester runs along the south-east boundary of the site. The site currently comprises a highways depot, which, from a review of the most recent Google Aerial imagery dated 2022, indicates the site is largely used for parking, with a large circular tank on the southern part of the site and an industrial building in the north-west corner of the site. The northern part of the site is located within the draft Order Limits.
Site history	Historical mapping (NLS) dated 1880 indicates the site as open fields with the Great Eastern railway – Colchester line running along the south-east boundary of the site. Google Aerial imagery dated 2000 indicates a large mound of earth in the centre of the site, and by the imagery dated 2005 the material appears to be being moved with a number of lorries present on the site. By the 2006 imagery the tank is located on the southern half of the site. The site remains largely unchanged until the 2017 imagery which indicates a layout similar to that described above.
Geology	The BGS Geoindex indicates that the superficial deposits at the site generally comprise Cover Sands. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The Cover Sands are classified as a Secondary B Aquifer. The bedrock of the Thames Group is classified as Unproductive Strata. The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, hydrocarbons, hydrocarbon additives, solvents.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Likely. The site is located partially inside the draft Order Limits, and potential diversion of third party infrastructure may be undertaken through the northern part of the site and therefore it is likely that any contaminated fill material could be disturbed during construction and construction workers could encounter such material	Medium,	Moderate
	Leaching Migration Deposition	Groundwater (low sensitivity)	Likely. The site is located partially inside the draft Order Limits, and potential diversion of third party infrastructure may be undertaken through the northern part of the site and therefore it is likely that any contaminated fill materials could be disturbed/mobilised during construction.	Mild	Moderate

Site name/ref	PSC C7 – Scrap Yard, Poplar Lane (Inside draft Order Limits)
Site location and description	Located to the south-east of Poplar Lane approximately 4.3 km west of Ipswich (611625E, 243155N) The site currently comprises a scrap yard.
Site history	Historical mapping (NLS, dated 1880's) indicates the site as open fields until the 1949-1972 mapping that indicates a pit on the site. The scrap yard can be identified on the historical Google Earth aerial imagery dated 2000, although there is no evidence of the pit previously indicated.
Geology	The BGS Geoindex indicates that the superficial deposits at the site are absent and within parts of the surrounding area due to the proximity to Belstead Brook and from minerals extraction. Artificial ground is also indicated to be present across the site, which suggests the pit identified on the historical mapping may have been infilled. The bedrock is indicated to comprise the Thames group, with the Red Crag Formation outcropping in the south-westerly corner of the site.
Hydrogeology	The bedrock of the Thames Group is classified as Unproductive Strata and the Red Crag Formation as a Principal Aquifer. The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Hydrology	The Belstead Brook is located approximately 170m south-west of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, ash, clinker, sulphates, hydrocarbons, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is located inside the draft Order Limits, however it is within an area where overhead line is being removed and the existing pylon bases to be removed are outside of the site, therefore ground disturbance within the site is not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (low sensitivity)	Unlikely. The site is located inside the draft Order Limits, however it is within an area where overhead line is being removed and the existing pylon bases to be removed are outside of the site, therefore ground disturbance within the site is not anticipated.	Mild	Very low
		Surface water (medium sensitivity)		Mild	Very low

Site name/ref	PSC C9 – Valley Farm Landfill (approximately 10m north-east of the draft Order Limits)
Site location and description	Located to the north of Poplar Lane, approximately 4.3 km west of Ipswich (611300E, 243300N). The site currently comprises open fields predominantly, with the part of the site that is closest to the draft Order Limits comprising a farmhouse and the surrounding gardens.
Site history	Historical mapping (NLS, dated 1880's) indicates that the site is occupied by Villa Farm and associated buildings, fish ponds and open fields. The 1913 dated mapping shows that the site is now named as Valley Farm and the buildings at the site have expanded to the south and west. The mapping dated 1949-1972 indicates that some areas of the site, mainly to the southeast of Valley Farm, have been worked/excavated (assumed for mineral resource). The Environment Agency data identified the site as a landfill which was operated from 1967 to 1990. The Google Aerial imagery dated 2000 indicates that the site is mostly open fields with a farmhouse located on the southern part of the site.
Other pertinent information	Identified as a group of historical landfills around Valley Farm, from the Environment Agency data set. All the landfills are named Valley Farm and accepted a variety of waste types from 1967 to 1990, with the last licence surrendered in 1990.The landfill closest to the draft Order Limits is indicated to have received industrial and household waste.
Geology	The BGS Geoindex indicates that the superficial deposits at the site are predominantly absent, likely due to the previous extraction of the mineral (sand and gravel). Where the superficial deposits are present, the superficial deposits comprise the Kesgrave Catchment Subgroup and Lowestoft Formation (sand and gravel). Artificial ground is also indicated to be present on the north-eastern part of the site. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The Kesgrave Catchment Subgroup and Lowestoft Formation (sand and gravel) are classified as a Secondary A Aquifer. The bedrock of the Thames Group is classified as Unproductive Strata. The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Hydrology	Several water filled pits are located to the southwest of the site which appear to drain into a stream, which drains into the Belstead Brook.
Potential for generating contamination	High – as the site received a variety of materials including inert, commercial, and industrial waste material.
Potential contaminants	Heavy metals, ash, clinker, sulphates, hydrocarbons, ground gas, asbestos, and leachate.
Potential receptors	Human health – construction/maintenance workers; Groundwater; Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground/ fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst the landfills have accepted a variety of waste types, the site is outside of the draft Order Limits. Therefore, intrusive works within this area are not required and ground disturbance is not anticipated within the landfill. In addition, the works closest to the site involve the removal of existing overhead line, therefore there is unlikely to be a risk from migration of any landfill gases.	Medium,	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. Whilst the landfills have accepted a variety of waste types, the site is outside of the draft Order Limits. Therefore, intrusive works within this area are not required and ground disturbance is not anticipated within the landfill	Medium	Low
		Surface water (medium sensitivity)		Medium	Low

Site name/ref	PSC C10 – Scrap Yard, Ipswich Road (approximately 5m east of the draft Order Limits)
Site location and description	Located to the east of Ipswich Road, approximately 2 km south of Stratford St Mary (603839E, 232846N) The site currently comprises a scrap yard.
Site history	Historical mapping (NLS, dated 1885-1900) indicates the site as open fields until the 1888-1913 mapping that identifies the site as a gravel pit. By the mapping dated 1937-1961 the pits appear to have expanded to the south. The scrap yard can be identified on the historical Google Earth aerial imagery dated from 2000
Other pertinent information	A review of lidar data for the area indicates the site may have been infilled following the gravel extraction.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the Kesgrave Sand and Gravel Formation and the Lowestoft Formation (sand and gravel). The bedrock is indicated to comprise the Red Crag Formation.
Hydrogeology	The bedrock of the Red Crag Formation is classified as a Principal Aquifer. The Kesgrave Catchment Subgroup and Lowestoft Formation (sand and gravel) are classified as a Secondary A Aquifer The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Hydrology	The Black Brook is located approximately 135m south of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, ash, clinker, sulphates, hydrocarbons, and asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is outside of the draft Order Limits, therefore, intrusive works within this area are not required and ground disturbance is not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. The site is outside of the draft Order Limits, therefore, intrusive works within this area are not required and ground disturbance is not anticipated.	Mild	Very Low
		Surface water (low sensitivity)		Mild	Very low

Section D: Colchester City Council

Site name/ref	PSC D1 – Former RAF Boxted (within the draft Order Limits)
Site location and description	Located to the north and west of the A12, approximately 5.5 km north of Colchester (601577E, 230567N). The site currently comprises agricultural fields with an area towards the east of the site in use as a solar farm.
Site history	Historical mapping (NLS, dated 1880's) indicates the site as open fields which remain largely unchanged until RAF Boxted, a Royal Air Force station, was opened in 1943. Evidence from historical aerial imagery (Historic England, dated from 1942 to 1946) shows the runways, turning circles and the hangers present on the site. An ammunition store and bomb dump are shown to the east of the site. The airfield officially closed in 1947 with much of the airfield now in agricultural use. The section of the former RAF Boxted that crosses the draft Order Limits predominantly comprises the former runways to the south of the site.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of Cover Sands and the Lowestoft Formation (sand and gravel) in the west of the site. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The bedrock of the Thames Group is classified as unproductive strata. The Cover Sands and Lowestoft Formation (sand and gravel) are classified as a Secondary A Aquifer The site is located within a groundwater SPZ3 but is not within a drinking water safeguarded area for groundwater.
Hydrology	A small stream and ponds are located on the eastern part of the site, adjacent to the solar farm.
Potential for generating contamination	Very high
Potential contaminants	Heavy metals, fuels, hydrocarbons and additives, organic solvents, asbestos, radium, coal tar, per- and polyfluorinated substances (PFAS), unexploded ordnance and bombs.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Likely. The Project proposals include pylons located within the site and therefore it is likely that any contaminated fill material could be disturbed during construction and construction workers could encounter such material and/or landfill/ground gases. This may include UXO/UXB.	Severe	High
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Likely. The Project Proposals include pylons located within the site and therefore it likely that any contaminated fill material could be disturbed/mobilised during construction	Medium	Moderate
		Surface Water (low sensitivity)		Medium	Moderate

Section F: Chelmsford District

Site name/ref	PSC F1 – Brittons Hall Farm – landfill (within the draft Order Limits)
Site location and description	Located to the south of Mashbury Road and to the east of the River Can, approximately 0.5 km south-west of Chignall St James and 4.5 km northwest of Chelmsford (567210E, 209160N). The site currently comprises open fields and is surrounded by open fields. It has an active licence for a non-hazardous landfill, however based on the most recent Google Aerial imagery dated 2023, it appears to have been fully restored.
Site history	Historical mapping (NLS, dated 1880's) identifies the site as open fields. A review of the Essex County Council planning portal indicates that planning permission was first granted to the site for minerals extraction in 1993 with the restoration of the landfill completed in 2019.However, by the Google Aerial imagery dated 2017 most of the site already appeared to have been restored.
Other pertinent information	Identified from the Environment Agency data set as a current landfill. The site has a current permit for the disposal of non-hazardous waste. The site is also designated as a minerals site for the extraction of sand and gravel, Roxwell Quarry, by Essex County Council. A review of the Essex County Council planning portal indicates that planning permission was first granted for mineral extraction and subsequent landfilling at the site in 1993. The restoration of the landfill restoration works was completed by 31st December 2019.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the Lowestoft Formation (Diamicton), however as the site has been worked for its mineral, superficial deposits are unlikely to be present at the site. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The bedrock of the Thames Group is classified as unproductive strata. The Lowestoft Formation (Diamincton) is classified as a Secondary Undifferentiated Aquifer The site is not located within a groundwater SPZ or a Drinking Water Safeguarded Zone for groundwater.
Hydrology	The River Can is indicated approximately 60m (at its closest distance) to the north-west and south-west of the site, The River Can is included within the Anglian River Basin Management Plan based on the assessment presented within Chapter 12: Hydrology and Land Drainage in Volume I.
Potential for generating contamination	High – due to the non-hazardous waste material likely received
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.

Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground/ fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation of the design presented in the DCO application and if appropriate further assessment and/or ground investigation would be undertaken.	Medium,	Low
	Leaching Migration Deposition	Groundwater (low sensitivity)	Unlikely. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation of the design presented in the DCO application and if appropriate further assessment and/or ground investigation would be undertaken.	Mild	Very Low
		Surface water (high sensitivity)		Medium	Low

Site name/ref	PSC F2 – Boyton Cross – historical landfill (within the draft Order Limits)
Site location and description	Located to the north of Royton Cross, approximately 2 km south-west of Chignall St James and 5 km north-west of Chelmsford (566300E, 208100N). The site currently comprises open fields, with the southern part of the site used as a car park. The site is predominantly surrounded by open fields and a few isolated residential properties.
Site history	Historical mapping (NLS, dated 1880's) identifies the site as open fields. The Environment Agency data indicates a landfill was operated at the site between 1961 and 1972. The historical Google Aerial imagery dated 2000 indicates the site has been fully restored, with the area a small area of vehicle storage in the location of the car park. By the imagery dated 2009 the car park area appears to show evidence of being worked with bunds present around the perimeter and machinery present. By the 2017 imagery this has been developed into the car park.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill. The records indicate the sites first was accepted waste in 1961 and the last input was in 1972. The site received industrial, commercial, and household waste.
Geology	The BGS Geoindex indicates that the superficial deposits of the Lowestoft Formation (Diamicton) are generally absent across the central section of the site, likely from the mineral extraction of the underlying Kesgrave Catchment Subgroup, Head Deposits are indicated to be outcropping along the southern boundary. The bedrock is indicated to comprise the Thames Group. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Thames Group is classified as unproductive strata. The Kesgrave Catchment Subgroup is indicated as a Secondary A Aquifer and the Lowestoft Formation (Diamicton), and the Head Deposits are classified as Secondary Undifferentiated Aquifer. The site is not located within a groundwater SPZ or Drinking Water Safeguarded Zone for groundwater.
Hydrology	The Roxwell Brook is indicated along the southern boundary of the site on the opposite side of the A1060.
Potential for generating contamination	High – as the site received industrial, commercial, and household waste.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.
Potential receptors	Human health – construction/maintenance workers; Groundwater; Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill boundary as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation of the design presented in the DCO application and if appropriate further assessment and/or ground investigation would be undertaken.	Medium,	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation of the design presented in the DCO application and if appropriate further assessment and/or ground investigation would be undertaken.	Medium	Low
		Surface water (medium sensitivity)		Medium	Low

Site name/ref	PSC F4 – Newney Green East – historical landfill (within the draft Order Limits)
Site location and description	Located to the west of Victoria Road, approximately 0.4 km south-east of Newney Green and 4.5 km west of Chelmsford (565600E, 206400N). The site currently comprises open fields with a fishing lake located in the central section of the site. The site is surrounded by open fields and a few isolated residential properties and farm buildings.
Site history	Historical mapping (NLS, dated 1880's) identified the site as open fields. The Environment Agency data identified a landfill was operated at the site however exact dates of this are unknown. The historical Google Aerial imagery dated 2000 indicates the site as open fields with the fishing pond already evident. A small section in the south of the site appears to contain an industrial building, and by the imagery dated 2005 this area has expanded to include the storage of potential faming materials. This storage area has continued to be used through to the present day.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill. The sites operation dates are not shown; however, it is indicated the site received inert waste.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial deposits of the Lowestoft Formation (Diamicton) on the southern half of the site, and Head Deposits on the northern part of the site. The bedrock is indicated to comprise the Thames Group.
Hydrogeology	The bedrock of the Thames Group is classified as unproductive strata. The Lowestoft Formation (Diamicton) and the Head Deposits are classified as Secondary Undifferentiated Aquifer. The site is not located within a groundwater SPZ or Drinking Water Safeguarded Zone for groundwater.
Hydrology	A large pond is noted towards the centre of the site, with a stream running along the northern part of the site in a northeast/southwest direction.
Potential for generating contamination	Moderate – as the site received inert waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the landfill boundary.	Medium	Low
	Leaching Migration Deposition	Groundwater (low sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. Whilst, the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill as pylons are currently located outside of the landfill boundary.	Mild	Very Low
		Surface water (low sensitivity)		Mild	Very Low

Site name/ref	PSC F6 – Roxwell Quarry – historical landfill (site is directly adjacent to draft Order Limits)
Site location and description	Located to the north of Royton Cross, approximately 2 km south-west of Chignall St James and 5 km north-west of Chelmsford (565600E, 208400N). The site currently comprises open fields and is surrounded by open fields and a few isolated residential properties.
Site history	Historical mapping (NLS, 1880's) identified the site as open fields. The mapping dated 1888-1913 indicates a gravel pit on the western end of the site. By the mapping dated 1937-1961 the gravel pit has expanded and is indicated to be filled with water. The Environment Agency data identifies the site received waste material between 1952 and 1969. The historical Google Aerial imagery dated 2000 indicates the site has been fully restored, however a pond feature is present along the northern boundary. The site then remains largely unchanged through to the present day.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill with two permits. The records indicate that the site first accepted waste in 1952 and the last input was in 1969. The site received inert, industrial, commercial, and household waste. The information also indicates the site has gas control measures.
Geology	The BGS Geoindex indicates that the superficial deposits of the Lowestoft Formation (Diamicton) are absent, likely from the mineral's extraction of the underlying Kesgrave Catchment Subgroup, unlike the surrounding area Head Deposits are indicated to be outcropping along the southern boundary. The bedrock is indicated to comprise the Thames Group. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Thames Group is classified as unproductive strata. The Kesgrave Catchment Subgroup is indicated as a Secondary A Aquifer. The site is not located within a groundwater SPZ or Drinking Water Safeguarded Zone for groundwater.
Hydrology	The Roxwell Brook is indicated along the southern boundary of the site on the opposite side of the A1060.
Potential for generating contamination	High – due to the waste the site likely received and the indication of gas control measures.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface Water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst the landfills have accepted a variety of waste types, intrusive works within this area are not required and ground disturbance is not anticipated within the landfill as the site is outside of the draft Order Limits. Intrusive works are likely to be over 250m from the site boundary, therefore it is unlikely migrating landfill gases would be a significant risk.	Medium,	Low
	Leaching Migration Deposition	Groundwater (Medium sensitivity)	Unlikely. Whilst the landfills have accepted a variety of waste types, intrusive works within this area are not required and ground disturbance is not anticipated within the landfill as the site is outside of the draft Order Limits.	Medium	Low
		Surface water (Medium sensitivity)		Medium	Low

Section H: Thurrock Council

Site name/ref	PSC H2 – Ongar Hall Farm
Site location and description	Located to the east of Brentwood Road, Orsett (565088E, 184593N) approximately 2.5km north-west of Horndon on the Hill. The site currently comprises Ongar Hall Farm which contains a number of industrial style buildings and vehicle parking/storage. The site is currently occupied by Palmer and Klein (further details given below), a bed shop and an office furniture shop.
Site history	Historical mapping (NLS) dated 1880's indicates the site is occupied by a number of buildings labelled as Ongar Hall. A pond is located on the southern part of the site and the entire site is surrounded by open fields. The site remains largely unchanged through the available map editions. The Google Aerial imagery dated 1999 indicated the site is occupied by farm/industrial style buildings. The Google Aerial imagery dated 2004 indicates the site has expanded to the east with further parking/storage and an industrial style building added. By the 2010 imagery the site has expanded further to the east, with a larger building added and further storage/parking.
Other pertinent information	The site has been identified by Thurrock Council as potentially contaminated land called Palmer and Klien. An online search and a review of the Thurrock planning portal indicates that Palmer and Klien deals with meat waste processing and the manufacture of oils and fats, and the site is used for the collecting, processing and blending of animal fats and vegetable oils for the animal feed manufacturers and biodiesel production industry. A general internet search suggests the site has also been used for meat processing.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial Head Deposits. The bedrock is indicated to comprise the London Clay Formation.
Hydrogeology	The bedrock of the London Clay Formation is classified as unproductive strata. The Head Deposits are indicated as a Secondary Undifferentiated Aquifer. The site is located within a groundwater SPZ3, but is not located within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	A small unnamed stream runs along the southern boundary of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, hydrocarbons, organic and inorganic compounds, pathogens, solvents, detergents and bleaches

Site name/ref	PSC H2 – Ongar Hall Farm
Potential receptors	Human health – construction/maintenance workers Groundwater Surface Water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst the site is crossed by the draft Order Limits the proposals only utilise the existing road through the site to access the Project infrastructure. Therefore, intrusive works within the site are not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (low sensitivity)	Unlikely. Whilst the site is crossed by the draft Order Limits the proposals only utilise the existing road through the site to access the Project infrastructure. Therefore, intrusive works within the site are not anticipated.	Mild	Very Low
		Surface water (low sensitivity)		Mild	Very Low

Site name/ref	PSC H5 – Buckingham Hill – Historical landfill (within the draft Order Limits)
Site location and description	Located directly to the west of Buckingham Hill Road, approximately 1.5 km west of Stanford-le-Hope (566900E, 181100N). The site currently comprises open scrub land with a recycling centre directly adjacent to Buckinhgam Hill Road towards the north of the site. The site is surrounded predominantly by open fields.
Site history	Historical mapping (NLS, dated 1880's) identifies the site as open fields. By the mapping dated 1937-1961 the site is indicated to contain several sand and gravel pits. By the mapping dated 1949-1972 the pits have expanded towards the south of the site. The Environment Agency data set identified landfilling at the site from 1977 to 1991. A review of the Thurrock Council planning portal indicates the recycling centre was constructed in the early 2000's.
Other pertinent information	Identified from the Environment Agency data set as a historical landfill. Waste was first accepted at the site in 1977 with the last input was in 1991. The site was licenced to take industrial, commercial, household waste and liquid sludge.
Geology	The BGS Geoindex indicates that the superficial deposits are predominantly absent across the site, likely due to the historical mineral extraction of the Black Park Gravel Member undertaken at the site. The bedrock is indicated to comprise the London Clay Formation to the northeast of the site and Lambeth Group across the rest of the site. Artificial ground is also indicated to be present across most of the site.
Hydrogeology	The bedrock of the London Clay Formation is classified as unproductive strata and the Lambeth Group is classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.

Hydrology	A stream/ditch is located approximately 50m east of the site associated with another quarry. This is likely to form part of the drainage system around the quarry and the discharge location (if any) is unknown.
Potential for generating contamination	High – due to the types of waste likely received by the landfill
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation following Final Design and if appropriate further assessment and/or ground investigation would be undertaken.	Medium,	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. Whilst the site is located within the draft Order Limits, ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the landfill boundary. Subject to confirmation of the design presented in the DCO application and if	Medium	Low

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
			appropriate further assessment and/or ground investigation would be undertaken.		

Site name/ref	PSC H6 – Tarmac Orsett Quarry (within the draft Order Limits)
Site location and description	Located directly to the east of Buckingham Hill Road, approximately 1.2 km south-west of Stanford-le-Hope (567123E, 180992N). The site is currently a mixture of restored scrub land, active quarry, and open fields.
Site history	Historical mapping (NLS, dated 1880s) identifies the site as open fields. By the mapping dated 1937-1961 a pit is indicated on the northern part of the site. A review of the Thurrock Council planning portal indicates the site was active from the 1950's until the early 2000s with most of the working being restored to agricultural use, and the southwest part of the site being restored as an ecological park. There appears to be a remaining void located towards the centre of the site which currently has not been restored.
Other pertinent information	A review of the Thurrock Council planning portal indicates the continued extraction of sand and gravel at the site and restoration using inert waste. The site also has a pending planning application for the continued extraction to the east of the site, however this currently is awaiting a decision. The documentation in the planning application indicates that the extraction of material at Orsett Quarry was undertaken from the 1950's through until the early 2000's
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent at the site, likely due to the mineral extraction of the sand and gravel material. The bedrock is indicated to predominantly comprise the Lambeth Group across most of the site with the Thanet Formation outcropping in the centre of the site. The site is also indicated as artificial ground according to the BGS mapping.
Hydrogeology	The bedrock of the Lambeth Group and Thanet Formation is classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	Stream/ditches cross through much of the site, likely associated with the drainage from the quarry operations however, their connection to any main rivers is unknown.

Site name/ref	PSC H6 – Tarmac Orsett Quarry (within the draft Order Limits)
Potential for generating contamination	Moderate – as the site is likely to have received inert waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground /fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. Whilst the site is within the draft Order Limits ground disturbance is not currently anticipated within the infilled quarry as pylons are currently proposed to be located outside of the site boundary.	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. Whilst the site is within the draft Order Limits ground disturbance is not currently anticipated within the infilled quarry as pylons are currently proposed to be located outside of the site boundary.	Mild	Very Low

Site name/ref	PSC H7 – Collingwood Farm - Historical landfill (within the draft Order Limits)
Site location and description	Located to the east of Brentford Road, approximately 2.8 km north-east of Chadwell St Mary (566600E, 181010N). The site is currently comprising fields of scrub land and agricultural land.
Site history	Historical mapping (NLS, 1880's) identifies the site as open fields. A review of the Thurrock Planning Portal information suggests the site was used for minerals extraction with permission granted in 1971. The site is identified by the Environment Agency data set to have received waste from 1986 until 1994. Historical Google Aerial imagery dated 1999 indicates the site is in the process of being restored, with the site fully restored by the 2011 aerial imagery
Other pertinent information	Identified from the Environment Agency data set as a historical landfill. Waste was first input into the site in 1986 with the last input in 1994. The site was licenced to take inert, industrial, commercial, and household waste.
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent at the site, likely due to potential mineral extraction of the Black Park Gravel Member undertaken at the site, with superficial Head Deposits and the Black Park Gravel Member present on the eastern boundary of the site. The bedrock is indicated to comprise the Lambeth Group with some small, limited outcrops of the Thanet Formation. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Lambeth Group and Thanet Formation are classified as a Secondary A Aquifer. The superficial Head Deposits are classified as a Secondary Undifferentiated Aquifer and the Black Park Gravel Member as a Secondary A Aquifer The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Potential for generating contamination	High – due to the types of waste likely received by the landfill
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, ground gas, leachate, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. Whilst the site is located within the draft Order Limits ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the site boundary	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. Whilst the site is located within the draft Order Limits ground disturbance is not anticipated within the landfill as pylons are currently proposed to be located outside of the site boundary.	Medium	Low

Site name/ref	PSC H8 – Clearserve Quarry and landfill (within the draft Order Limits)
Site location and description	Located directly to the northwest of Holford Hill, approximately 2km north-east of Chadwell St Mary (566683E, 180134N). The site is currently in use as an active quarry and landfill. The site is surrounded predominantly by open fields and a Tarmac Bagging Plant to the southeast.
Site history	Historical mapping (NLS, dated 1880's) identifies the site as open fields. By the mapping dated 1888-1913 a gravel pit is indicated on the northeast part of the site. By the mapping dated 1949-1972 the gravel pit has expanded slightly. The Environment Agency data set identifies the site as a landfill with input of waste commencing in 2006.
Other pertinent information	Identified from the Environment Agency data set as a current landfill. The licence for the site was issued in 2006 for the input of inert waste material.
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent at the site, likely due to the mineral extraction undertaken from the Black Park Gravel Member. The bedrock is indicated to comprise the Lambeth Group around the edges of the site and in the northern part and the Thanet Formation outcropping in the centre of the site. The site is also indicated as artificial ground according to the BGS mapping.
Hydrogeology	The bedrock of the Lambeth Group and Thanet Formation is classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Potential for generating contamination	Moderate – as the site has received inert waste material.
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. Whilst the site is within the draft Order Limits ground disturbance is not currently anticipated within the quarry/landfill as pylons are currently proposed to be located outside of the site boundary.	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. The quarry is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. the site is within the draft Order Limits ground disturbance is not currently anticipated within the quarry/landfill as pylons are currently proposed to be located outside of the site boundary.	Medium	Low

Site name/ref	PSC H11 – Tilbury Power Station – current and historical landfills (within the draft Order Limits)
Site location and description	Located directly to the north of the River Thames and approximately 3 km east of Tilbury Docks (566683E, 180134N). The site currently comprises a mixture of restored and active landfills over a relatively extensive area, with much of the area crossed by the draft Order Limits being fully restored according to the 2023 Google Aerial imagery.
Site history	Historical mapping (NLS, dated 1880's) identified the site as open fields and described as East Tilbury and West Tilbury Marshes. By the mapping dated 1888-1913 a gravel pit is indicated on the northeast part of the site. By the mapping dated 1949-1972 the gravel pit has expanded slightly. The Environment Agency dataset identifies that the site was used for the landfilling of pulverised fuel ash (PFA) from the adjoining power station with the permit first issued in 1963. The site continued to receive PFA until approximately 2013 when some of the PFA material was recovered from the site for reuse and parts of the site restored with inert waste.
Other pertinent information	Based on the Environment Agency data set the area around Tilbury Docks and the former Tilbury Power Station contains several related current and historical landfills. The individual permitted waste sites licences within the area are indicated to have expired or been surrendered but were issued between 1978 and 2001 for the disposal of industrial waste 'Factory Curtilage' likely to be the ash waste and other products from the power station. An environmental permit was issued in 2020 for the entire area. There are two historical landfill permit areas noted, the permit for the southwest section was dated 1978 and was for the landfilling of inert waste. The other historical permit to the east was issued in 1968 and was for inert, industrial, and liquid sludge (likely from the nearby sewage works). A review of planning information on the Thurrock Council planning portal confirms that the material likely to be present at the site is PFA with the original permission for disposal granted in 1963. The review also indicates that some of the PFA deposited within the areas crossed by the draft Order Limits has been recovered for reuse with the outer slopes of the landfills remaining intact for ecological reasons. The review has indicated the site has been restored using inert materials.
Geology	The BGS Geoindex indicates that the site is underlain by superficial deposits predominantly comprising Alluvium. The bedrock underlying the superficial deposits is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated) – White Chalk Subgroup. The site is also indicated as artificial ground according to the BGS mapping.
Hydrogeology	The bedrock of the White Chalk Subgroup is classified as a Principal Aquifer. Much of the site is located within a SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	The River Thames is located along the southern boundary of the site.

Site name/ref	PSC H11 – Tilbury Power Station – current and historical landfills (within the draft Order Limits)
Potential for generating contamination	High – as the site has been used for the disposal of PFA.
Potential contaminants	PFA. heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers and off-site receptors Groundwater Surface Water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground / fill	Ingestion Inhalation Direct dermal contact	Construction/ maintenance workers (high sensitivity)	High. As this section of the route is to comprise open cut trenches, construction workers are likely to come into direct contact with various waste materials. PFA is highly susceptible to mobilisation if it is allowed to dry out and exposed to air and wind meaning creation of dust that could be inhaled by construction workers.	Medium,	High
	Inhalation	Off-site human health receptors (high)	High. As this section of the route is to comprise open cut trenches which may expose the PFA, which if it is allowed to dry out during the works then the material is susceptible to dust blow, and the dust could be inhaled by off-site receptors.	Medium	High
	Leaching Migration	Groundwater (high sensitivity)	Low. This section of the draft Order Limits is to comprise open cut trenches. A review of the planning portal revealed that groundwater in this area is likely to be below 0m	Medium	Moderate

	Deposition	Surface water (high sensitivity)	Ordnance Datum (OD) and as the base of the trenches is anticipated to be higher than this, it is anticipated the trenches would not intercept groundwater	Medium	Moderate

Site name/ref	**PSC H13 – Former Tilbury Power Station (within the draft Order Limits)**
Site location and description	Located directly to the north of the River Thames and approximately 2.5 km east of Tilbury Docks (566050E, 175751N). Most of the area of the historical power station has been converted to docks at the western end of the site, however the eastern end remains undeveloped.
Site history	Historical mapping (NLS, dated 1885-1900) indicates the site as open fields labelled as Tilbury Marshes. The site remains largely unchanged until the power station began construction in 1951. The former Tilbury power station was split into two sections, Tilbury A and Tilbury B. Tilbury A began construction in 1951 and was commissioned in 1961. Tilbury A ceased operation in 1981 and has since been demolished in stages, starting in 1999. Tilbury B began construction in 1961 and was opened in 1968. In 2011 work began to convert Tilbury B from burning coal to burning biomass, however the project was terminated in 2013 and power generation at the site ceased and demolition was started in 2017. Waste from the power stations was disposed of in the surrounding landfills. The areas surrounding the power station were used for coal storage, ash lagoons, machinery storage, etc. The power station was constructed on reclaimed former marshland that was in use as agricultural land.
Geology	The BGS Geoindex indicates that the site is underlain by superficial deposits of Alluvium. The bedrock is indicated to comprise the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated) – White Chalk Subgroup. The site is also indicated as artificial ground according to the BGS mapping.
Hydrogeology	The bedrock of the White Chalk Subgroup is classified as a Principal Aquifer. The Alluvium is classified as a Secondary Undifferentiated Aquifer. Much of the site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	The River Thames is located directly to the south of the site.
Potential for generating contamination	Very high
Potential contaminants	Heavy metals, ash, clinker, sulphates, PFA, hydrocarbons, polychlorinated biphenyls (PCBs).

Site name/ref	PSC H13 – Former Tilbury Power Station (within the draft Order Limits)
Potential receptors	Human health – construction/maintenance workers and off-site receptors Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/ maintenance workers (high sensitivity)	High. The Project proposals include undergrounding through the site and therefore it is likely that any contaminated fill materials could be disturbed during construction and construction workers could encounter such material.	Severe	Very High
	Inhalation	Off-site human health receptors (high sensitivity)	High. Contamination within this area, including materials encountered during the construction of the Project area susceptible to wind blow.	Severe	Very High
	Leaching Migration Deposition	Groundwater (high sensitivity)	Low. Works in this area are likely to be shallow and therefore unlikely to intercept groundwater.	Severe	Moderate
		Surface water (high sensitivity)		Severe	Moderate

Site name/ref	PSC H14 – Industrial Units (directly adjacent to draft Order Limits)
Site location and description	Lower Dunton Road, Basildon (565799E, 187307N) the site is located approximately 4.5km west of the centre of Basildon. The site is split into two areas on either side of Lower Dunton Road. The site is currently occupied by industrial buildings with associated parking. A review of Google Earth suggests the sites are small industrial estates for a number of different businesses including a storage facility, flooring company, and office furniture suppliers.
Site history	Historical mapping (NLS) dated 1880's indicates the site as open fields and remains largely unchanged until the 1949-1973 dated mapping when a building is shown on the sites with one labelled as Red House. The 1999 dated Google Aerial imagery indicates the site occupied by several long industrial style buildings which remain largely unchanged with only some minor changes to buildings noted.
Other pertinent information	The site is identified by Thurrock Council as potentially contaminated land based on the site being used as a poultry farm. A review of the planning portal suggests the sites were used for egg laying and packing.
Geology	The BGS Geoindex indicates that the site is predominantly underlain by superficial Head Deposits. The bedrock is indicated to comprise the London Clay Formation.
Hydrogeology	The bedrock of the London Clay Formation is classified as unproductive strata. The Head Deposits are indicated as a Secondary Undifferentiated Aquifer. The site is located within a groundwater SPZ3, but is not located within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	A small stream runs to the west of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, hydrocarbons
Potential receptors	Human health – construction/maintenance workers Groundwater Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is outside of the draft Order Limits and therefore intrusive works within the site are not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (low sensitivity)	Unlikely. The site is outside of the draft Order Limits and therefore intrusive works within the site are not anticipated.	Mild	Very low
		Surface water (low sensitivity)		Mild	Very low

Site name/ref	PSC H19 – Linford Quarry – Current and Historical landfill (approximately 30m from the draft Order Limits)
Site location and description	Located to the south of Holford Road, approximately 2 km north-east of Chadwell St Mary (566400E, 179800N). The site currently comprises an area of woodland to the northeast and along the north-west boundary of the site with a stockpile of material present to the south of the site, associated with the Tarmac Bagging Plant.
Site history	Historical mapping (NLS, dated 1888-1913) shows the site with several roads crossing the area. By the mapping dated 1937-1961 the site is occupied by sand and gravel pits and the roads are no longer shown. A review of historical aerial imagery (Historic England, dated 1953) shows the site being actively worked. The Environment Agency data set identified landfilling at the site from 1984 until 1993. Historical Google Earth Aerial imagery dated 1999 indicates the site is being used for the stockpiling of material with an open water filled pit in the east. The site remains largely unchanged through to the present day.
Other pertinent information	Indicated as a current and historical landfill from the Environment Agency data set. Waste was first accepted into the historical landfill part of the site in 1984 with the last input in 1993. The site was licenced to take inert waste. The current licence was issued in 2006 for inert waste.
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent across the site, likely due to the mineral extraction of the Black Park Gravel Member undertaken at the site. The bedrock is indicated to comprise the Lambeth Group and the Thanet Formation. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Lambeth Group and Thanet Formation are classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Potential for generating contamination	Moderate – due to only accepting inert waste material
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, and ground gas.
Potential receptors	Human health – construction/maintenance workers Groundwater

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The landfill is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. The landfill is not anticipated to contain significantly contaminative materials or generate significant landfill gas based on it only accepting inert waste. In addition, the site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Mild	Very Low

Site name/ref	PSC H20 – Tarmac Bagging Plant (approximately 10m from the draft Order Limits)
Site location and description	Located to the east of Buckingham Hill Road, approximately 2.5 km north-east of Chadwell St Mary (566819E, 179845N). The site currently comprises Tarmac owned bagging plant.
Site history	Historical mapping (NLS, dated 1888-1913) shows the site with several roads crossing the area. By the mapping dated 1937-1961 the site is occupied by sand and gravel pits and the roads are no longer shown. A review of historical aerial imagery (Historic England, dated 1953) shows the site being actively worked. Historical Google Earth Aerial imagery dated 1999 shows the site as like today, however a few further buildings are added through the imagery editions.
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent across the site, likely due to the mineral extraction undertaken at the site. The bedrock is indicated to comprise the Lambeth Group. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Lambeth Group is classified as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	A stream is located approximately 400m south of the site.
Potential for generating contamination	Moderate
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos.
Potential receptors	Human health – construction/maintenance workers Groundwater Surface Water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
	Leaching Migration Deposition	Groundwater (medium sensitivity)	Unlikely. The site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Mild	Very Low
		Surface water (low sensitivity)		Mild	Very low

Site name/ref	PSC H21 – Low Street – Historical landfill (approximately 10m from the draft Order Limits)
Site location and description	Located to the north and south of Station Road, approximately 1 km north-east of East Tilbury (567300E, 177700N). The site is currently spilt in two by Station Road with the northern section of the site comprising a waste recycling centre with an areas of storage/parking to the north and the southern part of the site comprising unused scrub land.
Site history	Historical mapping (NLS, dated 1888-1913) identifies the site as old gravel pits. On the mapping dated 1944-1972 the site is indicated to contain a brick works. To the west of the site a spur from the railway line comes south onto the site and a depot is indicated. The Environment Agency dated set identified landfilling at the site from 1965 until 1977. The 1999 dated historical Google Aerial imagery indicates the site as containing several buildings and the area to the northwest used as parking/vehicle storage. The section in the south of Station Road is indicated as scrub land. The site remains largely unchanged through the imagery editions.
Other pertinent information	Waste was first input into the site in 1956 and the last input was in 1977. The site was licenced to take industrial and commercial waste.
Geology	The BGS Geoindex indicates that the superficial deposits are generally absent across the site, likely due to the mineral extraction undertaken at the site. However, superficial deposits of Alluvium, Head Deposits and Taplow Gravel are present around the edges of the site. The bedrock is indicated to comprise the Thanet Formation with the White Chalk Subgroup outcropping in the eastern corner of the site. The site is also indicated as artificial ground on the mapping.
Hydrogeology	The bedrock of the Thanet Formation is classified as a Secondary A Aquifer and the White Chalk Subgroup as a Principal Aquifer. The superficial deposits of the Alluvium and Head Deposits are classified as a Secondary Undifferentiated Aquifer and the Taplow Gravel as a Secondary A Aquifer. The site is located within a groundwater SPZ3 but not within a Drinking Water Safeguarded Zone for groundwater.
Hydrology	Two surface water features are present to the south of the site, with one flowing through the far west side of the site.
Potential for generating contamination	High
Potential contaminants	Heavy metals, hydrocarbons, ash, clinker, sulphates, asbestos, ground gas
Potential receptors	Human health – construction/maintenance workers Groundwater

Site name/ref	PSC H21 – Low Street – Historical landfill (approximately 10m from the draft Order Limits)
	Surface water

Potential source	Potential pathway	Potential receptors and sensitivity	Classification of probability	Classification of consequence	Risk Classification
Contaminated ground	Ingestion Inhalation Direct dermal contact	Construction/maintenance workers (high sensitivity)	Unlikely. The site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium,	Low
	Leaching Migration Deposition	Groundwater (high sensitivity)	Unlikely. The site is located outside of the draft Order Limits and therefore ground disturbance at the site by the Project is not anticipated.	Medium	Low
		Surface water (low sensitivity)		Mild	Very low

Appendix 9.2: Preliminary Minerals Resource Assessment

nationalgrid

Appendix 9.2 - Preliminary Minerals Resource Assessment

9.1 Introduction

Overview

9.1.1 This appendix presents the Preliminary Minerals Resource Assessment (MRA) produced to inform Chapter 9: Contaminated Land, Geology and Hydrogeology in Volume I. This appendix has been prepared to provide baseline information on minerals present within the study area and identify the potential effects of the Project on Minerals infrastructure, Mineral Safeguarding Areas (MSA) and/or Mineral Consultation Areas (MCA). The purpose of this assessment is to establish the potential impact of the Project on mineral resources of economic importance and to consider whether further consideration and mitigation is required.

9.1.2 As described in Chapter 9: Contaminated Land, Geology and Hydrogeology in Volume I, the study area for geology comprises the draft Order Limits plus a 250 m buffer.

9.1.3 This MRA has been written with regard to the Minerals Safeguarding Practice Guidance[1] which provides guidance on the scope and format of the MRA.

9.1.4 For ease of reference, and to help make the baseline information more relevant to local communities the route has been divided into eight Project Sections, generally by local authority as follows:

- Section A: South Norfolk Council
- Section B: Mid Suffolk District Council
- Section C: Babergh District Council, Colchester City Council and Tendring District Council
- Section D: Colchester City Council
- Section E: Braintree District Council
- Section F: Chelmsford City Council
- Section G: Brentwood Borough Council and Basildon Borough Council
- Section H: Thurrock Council

Need for the Project

9.1.5 The need for the Project is set out in Chapter 1: Introduction in Volume I of the PEIR.

[1] Minerals Products Association, 2019, Minerals Safeguarding Practice Guidance (Online). Available at: https://mineralproducts.org/MPA/media/root/Publications/2019/MPA_POS_Minerals_Safeguarding_Guidance_Document.pdf [Accessed March 2023]

9.2 Minerals Policy and Planning

National Policy Statements

9.2.1 As described in Chapter 2: Key Legislation and Planning Policy in Volume I, when determining an application for development consent, the Planning Inspectorate is required to have regard for the relevant National Policy Statements (NPS). The two relevant NPS for the Project are the Overarching NPS for Energy (EN-1)[2] and the NPS for Electricity Networks Infrastructure (EN-5)[3].

9.2.2 Paragraph 5.11.19 of EN-1 states, '*Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place'*.

9.2.3 Paragraph 5.11.28 states '*Where a proposed development has an impact upon a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources*'.

9.2.4 Although the relevant NPS provide the primary policy against which the Project should be decided, regional and local policy documents may also be considered important and relevant to decision-making. Therefore, the relevant minerals plans have been considered when developing this MRA.

National Planning Policy Framework

9.2.5 The National Planning Policy Framework (NPPF)[4] Section 17, paragraphs 215 to 220 describe how planning policies should facilitate the sustainable use of minerals.

9.2.6 Part C and D of paragraph 216 states that '*Planning policies should:…*

c) Safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas; and adopt appropriate policies so that known locations of specific mineral resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resource defined will be worked); and

d) set out policies to encourage the prior extraction of minerals, where practical and environmentally feasible, if it is necessary for non-mineral development to take place'.

9.2.7 The NPPF also states in paragraph 219 that '*Minerals planning authorities should plan for a steady and adequate supply of aggregates by: …*

f) maintaining landbanks of at least 7 years for sand and gravel … whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised'.

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[2] National Policy Statement for Energy (EN-1), 2024 [online]. Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure[Accessed January 2024]

[3] National Policy Statement for Electricity Networks Infrastructure (EN-5), 2024 [online]. Available at: https://www.gov.uk/government/publications/national-policy-statements-for-energy-infrastructure[Accessed January 2024]

[4] National Planning Policy Framework, 2023 [online]. Available at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf[Accessed January 2024]

9.2.8 The Minerals Planning Practice Guidance[5] states in paragraph 002 that '*since minerals are a non-renewable resource, minerals safeguarding is the process of ensuring that non-minerals development does not needlessly prevent the future extraction of mineral resources, of local and national importance.*'

Local Planning Policy

Norfolk County Council Minerals and Waste Development Framework

9.2.9 The current Norfolk County Council Minerals and Waste Development Framework[6] covers Section A of the draft Order Limits and was adopted in September 2011 and covers the period from 2010-2026. The plan is currently under review and Norfolk County Council are preparing a Norfolk Minerals and Waste Local Plan to update the policies and extend the plan period to the end of 2038. The draft Norfolk Minerals and Waste Local Plan was submitted to the Planning Inspectorate for examination in December 2023., with a current pre-submission publication of the Norfolk Minerals and Waste Local Plan[7] available, dated May 2022.

9.2.10 The adopted Minerals and Waste Development Framework Policy CS16 states that '*The County Council will safeguard existing, permitted and allocated mineral extraction…consultation areas will be delineated on the Proposal Map and extend to 250 metres from each safeguarded site*'. The policy also states that '*The Minerals Planning Authority should be consulted on all development proposals within Mineral Consultation Areas…the Minerals Planning Authority will object to development with would lead to the sterilisation of the mineral resource and it would be for the relevant district council to decide whether there are compelling planning reasons for over-riding this safeguarding*'.

9.2.11 The pre-submission publication Norfolk Minerals and Waste Local Plan contains similarly worded policies around minerals safeguarding (Policy MP10 and MP11).

9.2.12 Policy CS1 of the adopted Minerals and Waste Development Framework (Policy MP1 within the draft Local Plan) states that the sand and gravel landbank will be maintained at between a 7 and 10-year supply.

9.2.13 The policies map within the adopted Minerals and Waste Development Framework and the background information within the pre-submission Norfolk Minerals and Waste Local Plan Publication confirms that parts of the study area and the draft Order Limits are within a MSA for sand and gravel.

9.2.14 Information received from Norfolk County Council has provided the locations of safeguarded minerals infrastructure and/or allocated sites for mineral extraction. At the time of writing, information on MSA from Norfolk County Council is outstanding and therefore this information is currently not presented on Figure 9.3: Minerals Safeguarding

[5] Minerals, Planning Practise Guidance, 2014 [online]. Available at: https://www.gov.uk/guidance/minerals [Accessed October 2023]

[6] Norfolk County Council, Minerals and Waste Development Framework, 2011 [online]. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/environment-and-planning-policies/minerals-and-waste-planning-policies/adopted-policy-documents#:~:text=We%20are%20responsible%20for%20planning%20for%20how%20the,minimises%20adverse%20impacts%20and%20maximises%20potential%20positive%20impacts. [Accessed January 2024]

[7] Norfolk Minerals and Waste Local Plan : Pre:Submission Publication, 2022 [online]. Available at: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/environment-and-planning-policies/minerals-and-waste-planning-policies/norfolk-minerals-and-waste-local-plan-review[Accessed January 2024]

Areas, Minerals Consultation Areas and Minerals Infrastructure in Volume II. The data set indicates that the most northern part of the study area and draft Order Limits crosses the safeguarded areas for the following active and safeguarded sites Swardeston Quarry, Mangreen Recycling Centre and Mangreen Quarry.

9.2.15 The study area and draft Order Limits also cross three Adopted Sites (MIN79, MIN80 and MIN81) based on the information provided by Norfolk County Council. However, MIN79, MIN80 and MIN81, have been deleted in the pre-submission publication of the Norfolk Minerals and Waste Local Plan, published in May 2022, and are therefore no longer adopted and are not considered further in this assessment.

Suffolk County Council Minerals and Waste Local Plan

9.2.16 The Suffolk Minerals and Waste Local Plan[8] was adopted in July 2020, and covers Section B and the northern half of Section C of the draft Order Limits. The policies map within the adopted Minerals Local Plan identifies that '*Sand and gravel resources are located throughout the County'*. The adopted plan indicates that parts of the study area, are located within the Suffolk MCA, as shown on Figure 9.3: Mineral Safeguarding Areas, Mineral Consultation Areas, and Minerals Infrastructure in Volume II.

9.2.17 Policy MP10 advises that these areas will be safeguarded from proposed development of more than 5 ha. As the draft Order Limits exceed 5ha within an MCA, a MRA has been produced to demonstrate that '*the sand and gravel present is not of economic value, or not practically or environmentally feasible to extract, or that the mineral will be worked before the development takes place or used within the development'*.

9.2.18 The draft Order Limits of the Project also interacts with an existing concrete batching plant (Poundfield Products), as shown on Figure 9.3: Mineral Safeguarding Areas, Mineral Consultation Areas, and Minerals Infrastructure in Volume II. Policy MP9 of the Local Plan deals with the safeguarding of concrete manufacture and states that the Country Council should be consulted where there is likely to be the loss of or the compromise of a facility. However, the draft Order Limits only interact with the concrete batching plant site because the Project is proposing to utilise the existing access roads, and the proposed pylons within this area would be positioned outside of the facility. Therefore, the Project would not cause the loss of, or compromise the works of the facility, and therefore it is considered that there are no potential impacts in relation to this facility and no further assessment is included herein.

Essex County Council Minerals Local Plan

9.2.19 The adopted Essex Minerals Local Plan[9] was adopted in July 2014 and covers Section C, D, E, F and G. The Essex Minerals Local Plan is currently under review, and following a Call for Sites is out for a 6 week public consultation (at the time of writing), which includes an extension of the plan period to 2040. Following the current consultation, Essex County Council will conduct technical assessments of the candidate sites to inform selection of preferred site allocations and enable further consultation. The ES will include

[8] Suffolk Minerals and Waste Local Plan, 2020 [online]. Available at: https://www.suffolk.gov.uk/asset-library/imported/chapters-1-to-18-smwlp-adopted-july-2020.pdf [Accessed January 2024]

[9] Essex Minerals Local Plan, 2014 [online]. Available at: https://www.essex.gov.uk/sites/default/files/migration_data/files/assets.ctfassets.net/knkzaf64jx5x/5UZuVtnjZbJ81olvZoZKVX/90acfc65df6fa8ee8ab20df3f0cda1c8/essex-minerals-local-plan-adopted-july-2014.pdf [Accessed January 2024]

a review of the site allocations or candidate sites (depending on the stage of the mineral local plan review at the time of writing the ES).

9.2.20 The policies map within the adopted Essex County Council Minerals Local Plan confirms that parts of the study area are located within a MSA for sand and gravel and brickclay. The study area also interacts with some existing minerals sites and the associated Mineral Consultation Areas (MCAs).

9.2.21 Policy S8 of the adopted Minerals Local Plan requires that the Minerals Planning Authority be consulted, and its views considered on '*all planning applications for development on a site located within an MSA and/or MCA that would have the potential to sterilise 5ha or more for sand and gravel, 3ha or more for chalk and greater than 1 dwelling for brickearth or brick clay*'. Where development exceeds these thresholds, a MRA is required.

9.2.22 Policy MP10 of the adopted Minerals Local Plan advises that the MSA will be safeguarded from proposed development more than 5ha. If a project sterilises 5ha of mineral within the MCA, the developer needs to demonstrate that '*the sand and gravel present is not of economic value, or not practically or environmentally feasible to extract, or that the mineral will be worked before the development takes place or used within the development*'.

9.2.23 The Essex Minerals Local Plan defines MSA as being all areas of glacial, glaciofluvial and river terrace deposits of sand and gravel identified on the British Geological Survey (BGS) mapping (and other supplementary sources of evidence).

9.2.24 The policies map within the adopted Minerals Local Plan identifies that '*extensive areas of northern and central Essex are protected by MSA for sand and gravel*'. This includes parts of the draft Order Limits, as shown on Figure 9.3: Mineral Safeguarding Area, Mineral Consultation Area, and Minerals Infrastructure in Volume II.

9.2.25 Information obtained from Essex County Council has provided the locations of the following safeguarded existing minerals infrastructure sites that the draft Order Limits and study area interact with:

- Crown Quarry (Section C) – located inside the draft Order Limits
- Bradwell Quarry (Section E) – Extension of Bradwell Quarry located inside the draft Order Limits
- Blixes Farm (Section E) and the corresponding MCA are located within the study area, and a small part of the draft Order Limits also cross the MCA for this site. However, this part of the Project proposes only utilisation of an existing access road and the proposed Project infrastructure would be outside of the site's boundary – to the north of Fuller Street (approximate NGR 583340E, 219865N)
- Sheepcotes (Section F), located northeast of Little Waltham – is within the draft Order Limits, however the parts of the Sheepcotes site that are within the draft Order Limits only comprise existing access roads and the proposed infrastructure for the Project would be outside the site's boundary and not within the operational part of the site
- Roxwell Quarry, Chignall St James (Section F) – is located inside the draft Order Limits, however proposed pylons within this section of the draft Order Limits are to be placed outside of the working boundary of Roxwell Quarry.

Thurrock Council Local Development Framework – Minerals and Waste Thematic Policies

9.2.26 The development plan for minerals in Thurrock is comprised of the adopted Core Strategy and Policies for Management of Development and the Essex Minerals Local Plan adopted first review.

9.2.27 The Thurrock Council Local Development Framework was adopted in January 2015, and forms the Core Strategy of Thurrock's Development Plan. The framework contains information relating to minerals planning policy in CSTP31 and CSTP32. Policy CSTP32 of the Core Strategy states that MSA in Thurrock are '*based on the work undertaken for the ECS*' (Environmental Capacity Statement).

9.2.28 Thurrock Council's Environmental Capacity Statement: Designation of Mineral Safeguarding Area[10] states that a MSA '*identifies and raises awareness to developers of the possible presence of workable mineral deposits. The potential for extracting these deposits must be considered when submitting and determining planning applications for non-mineral related development. This ensures valuable mineral resource are not needlessly sterilised*'.

9.2.29 Figure 11 of the ECS indicates that sections of the draft Order Limits are within a MSA for sand and gravel.

9.2.30 The following safeguarded existing minerals infrastructure sites are indicated to interact with the draft Order Limits and study area:

- Orsett Quarry (Section H) - current permitted minerals site, with a pending application for an extension to the east of the existing quarry – located within the draft Order Limits
- Rainbow Shaw Quarry (Section H)- which is designated by Thurrock Council as an aggregate recycling site – located within the draft Order Limits, however the Project is proposing only to utilise the existing access road and the proposed infrastructure for the Project would be outside of the site's boundary
- Tilbury 2 CMAT (Section H) – which is designated by Thurrock Council as an aggregate terminal/recycling site – located partially within the draft Order Limits, however the project is proposing only to utilise the existing access road and the proposed infrastructure for the Project would be outside of the site's boundary

Local Aggregate Assessments

9.2.31 The current landbank for various aggregates for any given MPA is usually documented in a Local Aggregate Assessment (LAA), which reports annually on aggregate supply and demand within the relevant planning area.

[10] Environmental Capacity Statement: Designation of Mineral Safeguarding Area, 2010 [online]. Available at: https://www.thurrock.gov.uk/sites/default/files/assets/documents/ldf_tech_env_capacity_2010.pdf [Accessed October 2023]

Norfolk County Council Local Aggregate Assessment

9.2.32 The latest LAA for Norfolk County Council[11] (Section A) was published in December 2022 and reflects the position of Norfolk Council minerals at the end of 2021. The LAA contains the following relevant information:

- **Sand and Gravel Sales**: The 10-year average sales have increased since the previous LAA and currently stand at 1.491 million tonnes (Mt) as of December 2021
- **Sand and Gravel Landbank**: The permitted reserves are currently estimated at 19.957 Mt, which has increased since the previous LAA. This translates to a current landbank of permitted reserves, based on the 10-year sales average, of 14.3 years which is an increase from the previous year where the landbank stood at 10.6 years. This is significantly greater than the seven-year requirement set out in the NPPF and above the requirement set out in Policy CS1 of the Norfolk Minerals and Waste Development Plan
- **Mineral Permitted Reserves**: Three planning permissions for mineral extraction were granted in 2021 for sand and gravel extraction. Reserves of sand and gravel as of the end of 2021 had increased 27% on the 2020 figure. There were also five planning applications for additional sand and gravel extraction in the process of being determined, two of which have since been approved

Suffolk County Council Local Aggregate Assessment

9.2.33 The most recent LAA for Suffolk (Section B and the northern half of Section C) reflects the position at the end of 2020[12]. This contains the following relevant information:

- **Sand and Gravel Sales**: The 10-year average sales have decreased slightly since the previous LAA and currently stands at 1.092 Mt as of December 2020, however the 3-year average was slightly higher at 1.115 Mt
- **Sand and Gravel Landbank**: The landbank of permitted reserves as of December 2020, based on the 10-year sales average, was 9.8 years which is an increase from the previous LAA. This is greater than the seven-year requirement set out in the NPPF
- **Mineral Permitted Reserves**: the LAA for Suffolk does not provide information on minerals extraction sites that are in the process of obtaining planning permission or those that have been recently granted permission. The LAA does state there are currently 16 sand and gravel quarries in Suffolk, however further details on whether they are currently active or dormant are not presented

Greater Essex Local Aggregate Assessment

9.2.34 The latest available LAA for Greater Essex (Sections C, D, E, F, G and H), which covers the areas of Essex County Council and Thurrock Council, was published in January

[11] Norfolk County Council Local Aggregate Assessment for calendar year 2021, 2022 [online]. Available at: https://www.norfolk.gov.uk/-/media/norfolk/downloads/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/minerals-and-waste-planning/norfolk-local-aggregate-and-silica-sand-assessment-2021.pdf [Accessed October 2023]

[12] Suffolk County Council, Local Aggregates Assessment (2019 & 2020 Data), 2022 [online]. Available at: https://www.suffolk.gov.uk/asset-library/suffolk-laa-2019-2020-data.pdf [Accessed October 2023]

2023[13] and reflects the position at the end of 2021. The LAA contains the following relevant information:

- **Sand and Gravel Sales**: The 10-year annual average sales (2012 to 2021) figure was 3.35 Mt and the three-years annual average sales was 3.26 Mt, which are both below the predicted tonnage of 4.45 Mt per annum which was used to determine the required provisions in the current adopted Minerals Plan. These figures have increased from the previous LAA although the predicted 4.45 Mt provided for in the current Minerals Plan has never been realised
- **Sand and Gravel Landbank**: The current landbank is calculated using the 10-year sales average, which translates to 10.12 years which is significantly greater than the seven-year requirement set out in the NPPF, however it is a reduction compared to the previous LAA
- **Mineral Permitted Reserves**: As of December 2021, there were five pending permissions across Greater Essex which would permit the working of 10.57 Mt of sand and gravel, and further increase the landbank. At the time of writing this MRA two of the applications have had permission granted, two applications are resolved to be granted subject to conditions and one an application is still awaiting a decision

9.3 Existing Baseline

Geology and Mineral Details

9.3.1 The geology in the study area is shown on Figure 9.1: Superficial Geology and Figure 9.2: Bedrock Geology in Volume II and discussed within Chapter 9:Contaminated Land, Geology and Hydrogeology in Volume I.

Mineral Assessment Reports

9.3.2 There are12 relevant Minerals Assessment Reports (MAR) which cover parts of the draft Order Limits. The MAR are a series of reports that describe the mineral resources across areas of the United Kingdom. The reports were produced using data gathered from borehole surveys and contain qualitative and quantitative data on lithology, composition, particle size analysis and other information of commercial value in relation to mineral resources.

9.3.3 The MAR subdivides the area covered into resource blocks where the mineral is present, then further sub divides into areas where it is exposed and areas where it is present beneath overburden.

Minerals Assessment Report, 001

9.3.4 MAR001 (Institute of Geological Sciences, 1971), covers the northern part of Section A.

9.3.5 The section of the draft Order Limits that is covered by this MRA is located within resource block C in the MAR, and most of the area is characterised as '*continuous or almost continuous spreads of mineral beneath overburden*'. Some areas crossed by the draft Order Limits are identified as having mineral present that is less than 1m thick or areas

[13] Greater Essex LAA 2022 (Covering the calendar year of 2021), 2023 [online]. Available at: https://www.essex.gov.uk/sites/default/files/migration_data/files/assets.ctfassets.net/knkzaf64jx5x/1fW2ZV06hLqRh38MGmRZ3f/4bf36505e9233cbd49c5a42667af1dcb/GE_LAA_2022_vFINAL_f.pdf [Accessed October 2023]

where the sand and gravel is exposed. The sand and gravel in this resource block is identified as being of varied thickness and quality with varying levels of overburden. Towards the south of the section the mineral is described as often found to be interbedded with the Lowestoft Formation (Diamicton), noted as Boulder Clay in the MAR.

Minerals Assessment Report, 137

9.3.6 MAR137 (Institute of Geological Sciences, 1983), covers the southern part of Section A, directly to the north of Diss.

9.3.7 The section of the draft Order Limits that is covered by this MRA is located within resource block A in the MAR with the section characterised as '*continuous or almost continuous spreads of mineral beneath overburden*'. This section is also within an area described as '*Area with excessive overburden.'* and *'Sand and Gravel absent locally*'. Resource block A is covered by Boulder Clay (Lowestoft Formation (Diamicton)) which is very thick, especially in the north of the section. The main mineral resources in this section are Glacial Sand and Gravel and the Kesgrave Sands and Gravels (Kesgrave Catchment Subgroup) and are mostly exposed where the River Waveney has cut through the overburden. Boreholes within the area have proven the presence of Glacial Sands and Gravels within the Boulder Clay, however these are thought to be lenticular and not laterally continuous. The mean thickness of the mineral is indicated to be 6.1 m with the overburden indicated to have a mean thickness of 9.2 m.

Minerals Assessment Report, 117

9.3.8 MAR 117 (Institute of Geological Sciences, 1982) covers the northern third of Section B, from Roydon to Wickham Street. The section of the draft Order Limits that is covered by this MRA is located within resource blocks A, B, D and F in the MAR.

9.3.9 Resource block A is located around the area of Roydon to the north of the River Waveney. Much of the area is described as the Boulder Clay plateau, and in part is described as barren of mineral. Elsewhere the deposits of sand and gravel are beneath the Boulder Clay and classified as unworkable due to the excessive overburden thickness. Mineral deposits are identified close to the River Waveney as the River has cut through much of the Boulder Clay overburden. The mean thickness of mineral is indicated to be 7.7 m and the overburden is indicated to have a mean thickness of 7.3 m.

9.3.10 Resource block B spans north and south of the River Waveney, with the main mineral deposit identified as the River Terrace Deposits and underlying Glacial Sand and Gravel located within the valleys and buried channel systems. This section is classified as a mixture of '*exposed mineral*' and '*continuous or almost continuous spreads of mineral beneath overburden*'. The minerals are indicated to have a mean thickness of 8.5 m. The mean thickness of overburden is indicated to be 1.7 m, however, much of the mineral is indicated by the MAR to be below the water table.

9.3.11 Resource block D is located to the south of resource block B and the Waveney Valley between Burgate and Wortham. Much of the area crossed by the draft Order Limits is indicated as '*continuous or almost continuous spreads of mineral beneath overburden*' with some small sections identified as '*exposed mineral*'. The mineral in this section comprises Glacial Sand and Gravel exposed at the surface of the Boulder Clay plateau, and the Kesgrave Catchment Subgroup which underlies the Boulder Clay and outcrops at the valley edges. The MAR describes barren land (i.e., an absence of mineral) where Head Deposits directly overly the Chalk, and we assume this refers to an absence of mineral. The mineral is indicated to have a mean thickness of 4.3 m. It is also identified

that mineral was absent within much of the Boulder Clay plateau (except for the limited areas of exposed Glacial Sand and Gravel). The overburden in the block is indicated to have a mean thickness of 8.8 m.

9.3.12 Resource block F is located to the south of resource block D, approximately at Wickham Street. The mineral in this block is indicated to be the Kesgrave Catchment Formation, which is overlain by the Boulder Clay, and laterally impersistent beds of Glacial Sand and Gravel. River Terrace Deposits are also identified within the valleys of small streams. Much of the area crossed by the draft Order Limits is indicated as '*continuous or almost continuous spreads of mineral beneath overburden*' with some small sections identified as '*exposed mineral*'. The minerals are indicated to have a mean thickness of 8.3 m and the overburden an average thickness of 12.5 m.

Minerals Assessment Report, 55

9.3.13 MAR 55 (Institute of Geological Sciences, 1981) only covers a very small area of the draft Order Limits in the southern part of Section B and the northern part of Section C. The section of the draft Order Limits that is covered by this MRA is located within resource blocks B and E of the MAR. However, as the draft Order Limits cover such a small area of these resource blocks the generalised description may not provide accurate information regarding the area crossed by the draft Order Limits and therefore mean thicknesses have been left out of the descriptions below.

9.3.14 Resource block B is located directly to the south of Bramford Substation and extends just north of Washbrook Street. The area crossed by the draft Order Limits is generally described as '*sand and gravel absent or potentially not workable*'.

9.3.15 Resource block E is located directly south of resource block B. The area crossed by the draft Order Limits is generally described as '*sand and gravel absent or potentially not workable*' with a small part indicated to be '*exposed mineral*'.

Minerals Assessment Report, 14

9.3.16 MAR 14 (Institute of Geological Sciences, 1975) covers the area to the northeast of Colchester (Section C) around Ardleigh to Little Bromley. The section of the draft Order Limits that is covered by this MRA is in resource blocks B and C of the MAR.

9.3.17 Resource block B crosses the draft Order Limits around Ardleigh. The mineral in this section is indicated to be the Glacial Sands and Gravels. This area is mostly described as '*continuous or almost continuous spreads of mineral beneath overburden*' with an area indicated as *'exposed mineral'* to the east and southeast of Ardleigh where the mineral outcrops on the valley sides. The mean mineral thickness is indicated to be 5.2 m and a mean overburden thickness of 2.5 m described as normally comprising loam deposits.

9.3.18 Resource block C is located to the east of resource block B and covers the areas towards Little Bromley. The area is indicated to mostly be covered by loam, underlain by mineral comprising Glacial Sands and Gravels. To the south of the resource block, around Little Bromley, but outside of the draft Order Limits, the Glacial Sand and Gravel are indicated to be exposed at the surface. In general, though, the area is described as '*continuous or almost continuous spreads of mineral beneath overburden*'. The minerals are indicated to vary in thickness, with a mean thickness indicated to be 6m. The overburden is also found to vary in thickness with a mean thickness of 2.5 m estimated.

Minerals Assessment Report, 85

9.3.19 MAR 85 (Institute of Geological Sciences, 1981) covers the area around Great Horkesley in Section D. The section of the draft Order Limits that is covered by this MRA is located within resource block H of the MAR. The mineral within this resource block is indicated to be the Glacial Sand and Gravel, the Kesgrave Catchment Subgroup, and the Red Crag. The majority of resource block H is indicated as '*exposed mineral'* with the western section indicated as '*continuous or almost continuous spreads of mineral beneath overburden'.* The mean total thickness of the minerals is indicated to be 5.7 m. The overburden in this section is indicated to be thin, except to the south of Little Horkesley, where the draft Order Limits are located, where it ranges up to 8 m thick.

Minerals Assessment Report, 10

9.3.20 MAR 10 (Institute of Geological Sciences, 1974) covers the southern half of Section D. The section of the draft Order Limits that is covered by the MRA is located within resource blocks A, C and D of the MAR.

9.3.21 Resource block A is located around the area of Fordham. Much of the area is indicated to be within an area where the overburden ratio is more than 3:1 and the Boulder Clay is more extensive than the Glacial Sand and Gravel. Very small, limited areas of the draft Order Limits are within an area where minerals are indicated to be exposed.

9.3.22 Resource block C is located along the banks of the River Colne where the mineral is indicated to be the River Terrace Deposits. The resource block is generally indicated as '*continuous or almost continuous spreads of mineral beneath overburden*' with the thickness of the mineral being found to be variable but generally increasing from about 1.5 m thick in the west to over 3 m in the east, normally with less than 1.5 m of overburden.

9.3.23 Resource block D is located south of block C, between the River Colne and Marks Tey. The mapping generally indicates that the outcrop of Glacial Sand and Gravel is irregular, and the mineral is mainly present beneath overburden of Boulder Clay. The MRA indicates that the mineral is absent or unworkable across the majority of the area, with small, limited areas of exposed mineral.

Mineral Assessment Report, 102

9.3.24 MAR 102 (Institute of Geological Sciences, 1982) covers the southern part of Section D and the northern quarter of Section E. The section of the draft Order Limits that is covered by this MRA is located within resource blocks B2, C and D of the MAR.

9.3.25 Resource block B2 is in the central area between Marks Tey and the River Blackwater. The Kesgrave Catchment Subgroup and Glacial Sand and Gravel are identified as the mineral within this area, beneath an overburden of Boulder Clay. There are large parts of the area where the Boulder Clay is identified as too thick to extract the mineral, with other sections identified as '*continuous or almost continuous spreads of mineral beneath overburden*'. The mean overburden thickness is indicated to be 7.4 m. It is also indicated that only 8% of the mineral withing the resource block is exposed with a mean thickness of 6.4 m.

9.3.26 Resource block C is located to the south of the River Blackwater, of which 92% of the area is mineral bearing. The area mostly indicated as '*continuous or almost continuous spreads of mineral beneath overburden*' with small sections, mostly associated with the banks of the River Blackwater as '*exposed mineral*'. The mean thickness of the overburden is indicated at 6.4 m, with the mineral having a mean thickness of 6.6 m.

9.3.27 Resource block D is located along the River Blackwater, and includes the fluvial deposits of the river valley, of which 76% is mineral bearing. Most of the section is described as '*discontinuous spreads of mineral beneath overburden*'. Potentially workable mineral deposits, with a mean thickness of 1.9 m, but which are indicated to be discontinuous, are located beneath overburden of Alluvium, which has a mean thickness of 3.5 m.

Mineral Assessment Report, 002

9.3.28 MAR 002 (Institute of Geological Sciences, 1972) covers the central part of Section E. The section of the draft Order Limits that is covered by the MRA is located within resource blocks A and B of the MAR.

9.3.29 Resource block A contains an almost continuous spread of Chelmsford Gravels beneath an overburden of Till present across most of the block, described as '*continuous or almost continuous spreads of mineral beneath overburden*'. Exposed mineral is indicated to be present at the edges of the river valleys. The mean thickness of the mineral is indicated to be 7.5 m with the mean overburden being 7.2 m thick. Mineral is indicated to be absent within the riverbeds themselves as they have been cut down to the London Clay.

9.3.30 Resource block B is generally the same as resource block A, with the mean overburden being 6.4 m and the mean mineral thickness being 5.7 m.

Mineral Assessment Report, 006

9.3.31 MAR 002 (Institute of Geological Sciences, 1973) covers the southwest part of Section E and the northern part of Section F. The section of the draft Order Limits that is covered by the MRA is located within resource blocks B, C, D and H of the MAR.

9.3.32 Resource block B is located between Faulkbourne and White Notley. Much of the area is described as '*continuous or almost continuous spreads of mineral beneath overburden*', with the areas adjacent to the River Brain indicated as '*exposed mineral'* and the mineral indicated to be absent within the river bed. The Chelmsford Gravel is indicated to be the mineral within this resource block generally present below Boulder Clay overburden. However, in some areas the mineral is absent, and the Boulder Clay directly overlies the London Clay bedrock. The thickness of overburden ranges from 0.3 m to 12.6 m with the thickness of the mineral ranging from being absent to 9.5 m.

9.3.33 Resource block C generally forms the plateau area between the River Ter and River Brain. Mineral is indicated to be present beneath overburden, except for the river valley edges where mineral is exposed and the riverbed where it is absent. The overburden within this block ranges from 0.3 m to 13.1 m and the mineral thickness ranges from being absent to 11.9 m.

9.3.34 Resource block D generally forms the valley of the River Ter. The River Ter is incised into the London Clay formation therefore the mineral is generally found to be absent within the river bed, however the Chelmsford Gravels are indicated to be present within the river valley sides as '*exposed mineral*'. The overburden within this block is indicated to be between 0.3 m and 10.4 m thick with the mineral ranging from being absent to 11.3 m thick.

9.3.35 Resource block H is generally indicated to be absent of mineral with the Boulder Clay directly overlying the London Clay across much of the area.

Mineral Assessment Report, 52

9.3.36 MAR 52 (Institute of Geological Sciences, 1980) covers the central part of Section F. The section of the draft Order Limits that is covered by the MRA is located within the southeast corner of resource block E of the MAR.

9.3.37 Resource block E and the area of the draft Order Limits is described generally as '*continuous or almost continuous spreads of mineral beneath overburden*' and an area where the mineral is potentially unworkable or absent. The mineral within this block is indicated as being almost exclusively located beneath overburden of Boulder Clay, which has a mean thickness of 7.7 m but ranges up to 16.3 m.

Mineral Assessment Report, 66

9.3.38 MAR 66 (Institute of Geological Sciences, 1981) covers the southern part of Section F. The section of the draft Order Limits that is covered by the MRA is located within resource blocks A, B and C of the MAR.

9.3.39 Resource block A covers the area between Chignall St James to just south of Great Oxney Green. Much of the sand and gravel within this block is concealed beneath overburden of Boulder Clay with limited outcrops in the river valleys. The area crossed by the draft Order Limits mostly comprises areas described as '*continuous or almost continuous spreads of mineral beneath overburden*' around the area of Chignall St James with the rest indicated as potentially unworkable or absent. The overburden within areas where mineral is indicated to be present has a mean thickness of 5.7 m. The sand and gravel beneath the Boulder Clay are indicated to thin out in the south of the block with a mean thickness of 4.9 m

9.3.40 Resource block B covers the area to the west of the River Wid and Margaretting. Much of the mineral in this area is indicated to be potentially unworkable or absent, with only small, limited areas of mineral concealed beneath a thin layer of overburden comprising Head Deposits. The overburden has a mean thickness of 0.4 m. The mineral in this block is indicated to have a mean thickness of 3 m.

9.3.41 Resource block C covers the area south of Margaretting with much of the mineral in the area crossed by the draft Order Limits described as potentially unworkable or absent. The overburden in the area consists of Alluvium, Head Deposits and Boulder Clay with a mean thickness of 2.3 m. The mean recorded thickness of the mineral is 2.7 m.

9.4 Assessment

Effects of the Project on Safeguarded Extents

9.4.1 The policies maps accompanying the relevant minerals plans indicate that large parts of the draft Order Limits are located within safeguarded areas – predominantly for sands and gravels and brick clay. However, the draft Order Limits is the largest extent of the area within which the Project may be placed and does not represent the actual potential area where mineral may be sterilised by the Project, which would be significantly smaller. The actual physical footprint of the built operational Project components is a relatively small proportion of the draft Order Limits.

9.4.2 In addition, any potential mineral sterilisation can be considered to be temporary, as although during the operational lifetime of the Project some areas of the mineral could not be feasibly extracted (beneath the built elements), should the development be

decommissioned, the infrastructure could be removed and access to the underlying mineral restored.

9.4.3 As part of the ES, areas and percentages of safeguarded extents impacted by the Order Limits will be presented once additional information is received from the relevant Local Authorities (at the time of writing information from Norfolk County Council is awaited).

Effects of the Project on Existing Minerals Infrastructure

9.4.4 Several Minerals Infrastructure sites are located within the study area; however, these sites are mostly located outside of the draft Order Limits or within areas where the Project proposes only to use the existing access tracks (Blixes Farm, Rainbow Shaw Quarry, Tilbury 2). Therefore, significant impacts and effects on the infrastructure are not considered to be likely. Where the minerals infrastructure is within the draft Order Limits, the Project has, where possible placed the infrastructure outside of each sites boundary. Further details of each site crossed by the draft Order Limits are presented below.

Crown Quarry

9.4.5 Crown Quarry is located to the west of Ardleigh Reservoir and is crossed by the draft Order Limits within Section C. There is currently one pylon proposed within the boundary of the quarry, along the northern boundary of the site along Wick Lane, and a further two pylons within the MCA for the site. A review of the plans for the site on the Essex County Council planning portal suggests that the northern part of the site along Wick Lane is not proposed to be worked, based on current plans. Further discussions with the quarry operator will be undertaken to agree any mitigation that may be required and minimise impacts on the working area so that significant effects are unlikely.

Bradwell Quarry

9.4.6 Bradwell quarry is located to the south of the A120 Coggeshall Road. In 2022, Blackwater Aggregates were granted planning permission for the extension of Bradwell Quarry into Site A7, as identified in the Essex Minerals Local Plan (Essex County Council, 2014) for the extraction of 6.5 million tonnes of sand and gravel. The draft Order Limits cross the Site A7 application area. However, a review of the information held on the Essex County Council planning portal indicates, based on current plans, that the area crossed by the draft Order Limits is not proposed to be worked. Discussions with the quarry operator will be undertaken to agree any mitigation that may be required to minimise potential impacts so that significant effects are unlikely.

Sheepcotes (Quarry)

9.4.7 Sheepcotes is located to the north-east of Little Waltham and is crossed by the draft Order Limits within Section F. In this section the draft Order Limits only cross the access roads for the quarry and not any of the operational parts of the site. Therefore, it is considered that there would be little impact on the site and therefore significant effects are unlikely.

Roxwell Quarry

9.4.8 Roxwell Quarry is located to the south-west of Chignall St James and is crossed by the draft Order Limits within Section F of the Project. However, the pylons within this section are to be placed outside of the Roxwell Quarry boundary. In addition, a review of the

site from the latest Google Aerial imagery (dated 2023) suggests the site has been fully restored. Therefore, it is considered that there would be no impact on the site.

Orsett Quarry

9.4.9 Orsett Quarry is located to the north of East Tilbury, Thurrock and is crossed by the draft Order Limits within Section H of the Project. The pylons within this area are placed on the edge of the site within a section that has previously been worked. Discussions with the quarry operator will be undertaken to agree any mitigation that may be required and minimise impacts on the access/ working area so that significant effects are unlikely. .

Engineering and Construction Considerations of Prior/Incidental Extraction

9.4.10 Prior extraction refers to the removal of a mineral resource, to prevent sterilisation, prior to the commencement of construction works on a project. Incidental extraction refers to the removal of mineral during the construction of the Project.

9.4.11 In this case, neither prior nor incidental extraction are considered feasible due to the likely engineering requirements needed following mineral extraction, to create an appropriate development platform for the Project and in combination with the relatively small volume of mineral produced. The works required to create an appropriate development platform for the Project following extraction would also require significant time that is likely to delay the construction programme.

Overhead Sections

9.4.12 The Project is expected to comprise the installation of approximately 159 km of overhead line comprising approximately 510 steel lattice pylons and six CSE compounds, as referred to in Chapter 4: Project Description within Volume I.[14]

9.4.13 At the current time, most of the route is proposed to be overhead line with pylons spaced typically approximately 330 m apart, and the conductors which span between the pylons. The conductors may not result in sterilisation of minerals on their own, as, subject to discussion and agreement with National Grid, it may be possible to extract the mineral beneath the infrastructure if required. However, it is considered likely that the assessments, safety clearances and statutory requirements to facilitate extraction would outweigh the economic viability of the relatively small volume of mineral that would be won.

9.4.14 Any prior or incidental extraction at pylon bases (which are approximately 10 m by 10 m) is likely to produce a very small quantity of economic mineral and would also need to include an area significantly bigger than both the proposed pylon bases and any excavations proposed to facilitate their construction (for reasons of practicality and stability). The mineral would then have to be replaced by appropriate material which would need to be engineered to meet any specific geotechnical design requirements for the pylon bases. This is likely to require significant additional cost to over excavate, replace with imported material, engineer the material and to provide the suitable stability assessments and specifications required to demonstrate/facilitate short- and long-term stability of the excavations and the pylons. The additional excavation has the potential to

[14] The Waveney Valley Alternative is also being considered within the statutory consultation which would result in changes to these elements of the Project, as detailed in Chapter 4: Project Description in Volume I. These changes do not alter the assessment within this appendix.

cause additional environmental impacts (noise, dust, traffic, landscape and visual) that are likely to require environmental assessment/consideration due to the cumulative scale.

9.4.15 To reduce the potential costs associated with prior/incidental extraction, National Grid could replace the excavated mineral with inert waste as a recovery operation. However, this is unlikely to be practical in the context of the discrete relatively small areas and would require additional designs and engineering to fully understand the design implications.

9.4.16 In addition, the use of inert waste would require separate additional applications to be made to the Environment Agency for environmental permits (for a waste recovery activity) including supporting risk assessments such as hydrogeological risk assessments and stability risk assessments. This is likely to result in both additional cost and delay to the programme affecting both National Grid's duty to be economic and efficient and put at risk meeting the proposed operation date. The potential environmental impacts of using inert waste could also be significant and are likely to require environmental assessment and planning permission.

9.4.17 It is considered that due to the long relatively narrow corridor that comprises the draft Order Limits, this would limit the potential for either prior or incidental extraction in the context of the relatively low volume of mineral likely to be extracted. This is before consideration of the quality and value of the mineral (which may further reduce the volume). The cumulative costs of extraction of the mineral, the transport of the mineral to an off-site facility for processing and the subsequent infilling of the void (either with inert waste or engineered fill), together with the potential environmental implications and geotechnical engineering enhancement needed to provide an appropriate material on which to construct the Project is considered to significantly outweigh the economic value of the relatively small volumes of extracted mineral.

Underground Cable Sections

9.4.18 The mineral is generally present below a thickness of overburden material (which varies within and between Project sections). If prior/incidental extraction were to take place within the underground cable sections, the excavation required to extract the mineral would therefore need to be enlarged (in terms of depth and lateral extent) beyond the current proposed footprint (c. 50 m wide for trenched sections and 180 m for trenchless sections) to reach the mineral below.

9.4.19 The resultant over-enlarged void would need to be backfilled with suitable imported material, that may need to be appropriately engineered to meet specific geotechnical design requirements to return the ground level to pre-existing levels. The backfill material would also need to be suitable for the proposed location, in relation to its chemical composition and potential to impact groundwater quality. This would add additional cost to the Project associated with the backfill material and the additional construction work required to extract the minerals and back fill the void.

Substation

9.4.20 The proposed EACN Substation is located on the Tendring Peninsula. The site is located within a MSA for Sand and Gravel, as shown on the policies map within the Essex County Council adopted Minerals Local Plan[9].

9.4.21 Prior/Incidental extraction is not considered feasible at the substation due to the likely engineering requirements (and associated timescales for completion) needed following mineral extraction, to create an appropriate development platform for the substation.

9.4.22 Extraction of the potential mineral at the substation would leave a void that would then have to be replaced/filled by appropriate material which may need to be engineered to meet any specific geotechnical design requirements for the development platform and foundations for the proposed substation. In practical terms, the whole site would need to be worked to prevent sterilisation (by default) of mineral in between the built elements. This would require additional cost to over excavate, replace with imported material, engineer the material and to provide the suitable stability assessments and specifications required to demonstrate/facilitate short- and long-term stability of the excavations and the subsequent structures.

9.4.23 There is currently an existing overhead line passing through the proposed substation site area. Any extraction would need to provide appropriate stand off to the existing pylon bases which reduces the amount of mineral available within this relatively small area.

9.4.24 To reduce the potential costs associated with prior/incidental extraction, National Grid could replace the excavated mineral with inert waste as a recovery operation. However, this is unlikely to be practical in the context of the relatively small area and would require additional designs and engineering to fully understand the design implications. In addition, the use of inert waste would require separate additional applications to be made to the Environment Agency for environmental permits (for a waste recovery activity) including supporting risk assessments such as hydrogeological risk assessments and stability risk assessments. This would result in both additional cost and delay to the programme affecting both National Grid's duty to be economic and efficient and put at risk meeting the proposed operation date. The potential environmental impacts could also be significant and are likely to require environmental assessment and planning permission.

Overall Summary of the Engineering Considerations

9.4.25 As described within this section, prior/incidental extraction of the minerals is not considered practical due to the over enlarged excavations that would be required to extract the minerals. There would be additional cost to dig the void and to backfill the extracted void to return ground levels to pre-works levels and engineer the material to create a suitable development platform. This would significantly increase the cost of the Project and would compromise National Grid's duty to be economic and efficient.

9.4.26 The cumulative costs of extraction of the mineral, the transport of the mineral to an offsite facility for processing and the subsequent infilling of the void (either with inert waste or engineered fill), together with the geotechnical engineering enhancement to provide an appropriate material on which to construct the Project is considered to significantly outweigh the economic value of the relatively small volume of extracted mineral. This is before consideration of the quality and value of the mineral (which may further reduce the volume/economic value).

9.4.27 In addition, any prior or incidental extraction would extend the construction programme. This would mean that National Grid would likely miss the Project's intended delivery date, which could also risk the meeting of the Government target of 50 GW of green power by 2030. Therefore, it is considered that in the context of the additional cost and time required, prior/incidental extraction is not viable.

Environmental Considerations of Extraction

Overhead Line Sections

9.4.28 The specific environmental implications of extraction of the material from each pylon base would need to be considered and assessed in the context of the potential impacts related to noise, dust, traffic, landscape, and visual impact (which may vary at each location). In the context of the relatively small discrete areas of the pylon bases (approximately 10 m x 10 m), and therefore the small volume of mineral realised, the environmental impacts are likely to outweigh the economic value of the mineral.

Underground Cable Sections

9.4.29 Undergrounding is currently proposed in five locations, with up to 10 trenchless crossing locations. The cable parts of the route have been selected for undergrounding through various consultations and additional studies. Undergrounding has been chosen in many of the locations due to the high landscape value of the areas (as required by the National Policy Statements), such as through the Dedham Vale National Landscape (an Area of Outstanding Natural Beauty (AONB), and other sensitive receptors. This view was very much supported by statutory stakeholders during the non-statutory consultation. Further details on the feedback received in relation to undergrounding can be found in the Consultation Report.

9.4.30 Prior/incidental extraction of the minerals along the underground cable route would lead to a larger footprint and a longer construction duration within these areas. As the cable sections have been chosen due to proximity to sensitive receptors, such as the Dedham Vale National Landscape (an AONB), it is considered unlikely that there would be a future application for mineral extraction within such sensitive areas. Extending the draft Order Limits to accommodate the additional width and depth required to safely extract the minerals, would increase the magnitude of impact on the sensitive receptors.

9.4.31 Trenchless crossing techniques (as described in Chapter 4: Project Description in Volume I) have been selected in certain areas to avoid significant impacts and effects on overlying sensitive receptors (for example the River Stour). It is considered unlikely that such areas would be excavated in the future for minerals extraction due to the potential for significant environmental impacts and effects.

9.4.32 Prior/incidental extraction within underground sections would likely require over excavation through the cohesive overburden to reach the mineral and the resulting void would need to be filled with appropriate material. This could either be through importation of clean fill material or using inert waste as a recovery activity, which is unlikely to be acceptable within these sensitive areas, such as flood plains.

9.4.33 The potential impacts of extracting minerals could include increased noise and dust levels across the Project. There could also be a significant increase in traffic movements associated with the heavy goods vehicles required to remove the minerals from site to any processing or sales yards. The extraction could increase the landscape and visual effects across the wider area and could also result in the loss of habitats and disturbance to protected species during construction.

Substation

9.4.34 Prior/incidental extraction at the proposed EACN Substation would require an excavation area greater than currently proposed and may require the working area to be extended.

9.4.35 The specific environmental implications of extraction of the mineral from the site would need to be considered and assessed in the context of the potential impacts related to noise, dust, traffic, landscape, and visual impact. In the context of the relatively small area of the site, and therefore the small volume of mineral realised, the environmental impacts are likely to outweigh the economic value of the mineral.

Overall Summary of the Environmental Considerations

9.4.36 The overall impact of extracting minerals prior to or during construction of the Project could mean the draft Order Limits and construction work would need to extend or further extend into sensitive areas, such as Dedham Vale National Landscape (an AONB). Extracting the minerals is likely to increase the magnitude of impacts on the environment, and could generate additional effects around noise, dust, and traffic. The duration of construction would also need to extend, which would increase the level of disruption caused during construction. Therefore, the environmental impact associated with extracting the minerals is considered to be disproportionate to the value gained from extracting the minerals.

9.5 Conclusion

9.5.1 National Grid acknowledge that large parts of the draft Order Limits are located within either a MSA or an MCA for sand and gravel and/or brick clay. The MSA and MCA both extend beyond the draft Order Limits, across substantial areas of Norfolk, Suffolk, and Greater Essex. Even if the full extent of the draft Order Limits within an MSA/MCA were to sterilise mineral of sufficient quality and extent to be economically valuable, the extent of the sterilised area is very small in comparison to the extent of the MSA/MCA. The actual areas where built development would effectively sterilise any valuable mineral are significantly smaller still. Therefore, the quantity of mineral sterilised by the Project is insignificant in the context of the extensive occurrence of sand and gravel within all counties and the national need/significance of the Project.

9.5.2 In addition, whilst there are sand and gravel deposits safeguarded within the draft Order Limits, the existence, extent, and quality of such is not proven and is anticipated to be highly variable. Therefore, not all the safeguarded areas may contain mineral, or mineral of sufficient quality or economic value.

9.5.3 Consideration has also been given to prior or incidental extraction of minerals as part of the Project construction programme. However, this has shown that the increase in cost associated with the extraction would increase the overall cost of the entire Project and may conflict with National Grid's duty to be economic and efficient. The additional time that would need to be added to the construction schedule would mean that National Grid could miss the Project's intended delivery date, which could also risk the meeting of the Government target of 50 GW of green power by 2030. Therefore, it is considered that in the context of the additional cost and time required and the unproven economic value of the small amount of mineral that could be realised, prior extraction in these areas is not viable.

9.5.4 In addition, any potential mineral sterilisation can be considered to be temporary, as although during the operational lifetime of the Project some areas of the mineral could not be feasibly extracted (beneath the built elements), on decommissioning the infrastructure could be removed and access to the underlying mineral restored.

9.5.5 Finally, the Project has sought to avoid and reduce effects on sensitive environmental features/receptors through its design process. The prior or incidental extraction of

minerals would significantly increase the magnitude of environmental effects created by the Project and would lengthen the duration of construction works in sensitive areas, such as Dedham Vale National Landscape (an AONB). The environmental impact associated with extracting the minerals is disproportionate to the value gained from extracting the minerals.

9.5.6 The NPPF encourage prior extraction of minerals '*where practical and feasible*', and this MRA indicates that this requirement is not feasible on the Project.

9.5.7 Based on the national significance of the Project and that Norfolk, Suffolk and Greater Essex have more than the seven-year land bank of sand and gravel, as required by the NPPF, and sufficient additional safeguarded areas, it is considered that the potential impact of sterilising the small volume associated with the Project is acceptable without further consideration or mitigation.

Appendix 10.1: Health and Wellbeing Baseline Statistics

nationalgrid

Appendix 10.1 - Health and Wellbeing Baseline Statistics

10.1 Introduction

10.1.1 This appendix has been produced to support Chapter 10: Health and Wellbeing in Volume I. It sets out the baseline for the basis of population, ethnicity, deprivation, and local health parameters.

10.2 Health and Wellbeing Assessment

Assessment Methodology

10.2.1 The assessment of construction traffic noise has been conducted following the IEMA guidance for Determining the Significance of Health in Environmental Impact Assessment (EIA) (2022nd Effective Scoping of Human Health in EIA (2022), alongside the Mental Wellbeing Impact Assessment toolkit. These provide guidance for the assessment of Health and Wellbeing for addressing health inequalities and population health as environmental outcomes.

Data Sources

10.2.2 The baseline information has drawn on the following key information sources:

- Census 2021 (Office for National Statistics, 2022)
- Local health data published by the Office for Health Improvement and Disparities that provides a wider picture of the health of local residents (OHID, 2022)
- Data from the Department for Communities and Local Government (DCLG), for example Indices of Deprivation (2019) (DCLG, 2019)
- Essex Joint Health and Wellbeing Strategy (2022 – 2026) (Essex County Council, 2023)
- Joint Strategic Needs Assessment 2019 Essex Countywide Report (Essex City Council, 2019)
- Local Authority Health Profiles (OHID, 2022)
- Babergh and Mid Suffolk Health and Wellbeing Strategy 2021-2027 (Babergh District Council, 2023)
- Norfolk Core20 (Norfolk County Council, 2020)
- Norfolk Insight (Norfolk County Council, 2020)
- Norfolk and Waveney Joint Health and Wellbeing Strategy (2018 – 2022) (Norfolk County Council, 2018)

- Transitional Integrated Care Strategy and Joint Health and Wellbeing Strategy (Norfolk County Council 2023)
- The State of Suffolk (updated for 2022) (Suffolk County Council, 2023)
- Health Suffolk Joint Strategic Needs Assessment (Suffolk County Council, 2023)
- Public Rights of Way (PRoW) data provided by local authorities along the Project

Study Area

10.2.3 The study area for the assessment of Health and Wellbeing is the total extent of each of the Local Authority areas the Project passes through, as defined within the IEMA Effective Scoping of Human Health in EIA guidance. The study area is considered to be appropriate, to the scale of the Project and its potential effects, having identified the relevant geographic populations and potential impact pathways. The study area is presented on Figure 10.1: Study Area in Volume II.

10.3 Health Baseline

10.3.1 The results of the baseline data collection are presented below in Table A10.1.1 - A10.1.4. These results are discussed within Chapter 10: Health and Wellbeing in Volume I.

Table A10.1.1 – Ages of Populations in the study area

Age Group	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Sum of Aged 4 years and under	7000	4.93	4500	4.38	4000	4.33	10800	5.60	6700	4.52	8500	5.48	9900	5.45	4300	5.58	12200	6.50	12300	6.99	3,077,000	5.45
Sum of Aged 5 to 9 years	8,100	5.71	5200	5.06	4700	5.09	11800	6.12	7500	5.06	9000	5.80	10800	5.95	4600	5.97	12500	6.66	12700	7.22	3,348,600	5.93
Sum of Aged 10 to 14 years	8100	5.71	5600	5.45	5200	5.63	11600	6.02	7800	5.27	9400	6.06	11000	6.06	4500	5.84	12000	6.40	12400	7.05	3,413,100	6.04
Sum of Aged 15 to 19 years	6900	4.86	5200	5.06	4800	5.20	11300	5.86	6900	4.66	8200	5.28	9800	5.40	3900	5.06	10200	5.44	10500	5.97	3,218,900	5.70
Sum of Aged 20 to 24 years	6000	4.23	4600	4.48	4000	4.33	13900	7.21	6800	4.59	7500	4.83	9100	5.01	3600	4.68	9700	5.17	9500	5.40	3,414,400	6.04

Age Group	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Sum of Aged 25 to 29 years	7300	5.14	5400	5.26	4300	4.66	12600	6.54	7200	4.86	9200	5.93	11500	6.34	4700	6.10	12300	6.56	11800	6.70	3,715,400	6.58
Sum of Aged 30 to 34 years	8200	5.78	5700	5.55	4800	5.20	13500	7.01	7600	5.13	9900	6.38	12300	6.78	5200	6.75	14000	7.46	14100	8.01	3,952,600	7.00
Sum of Aged 35 to 39 years	8500	5.99	5500	5.36	4700	5.09	12900	6.69	6900	4.66	9700	6.25	12300	6.78	5000	6.49	13100	6.98	13800	7.84	3,795,400	6.72
Sum of Aged 40 to 44 years	8300	5.85	5500	5.36	5100	5.53	12600	6.54	6900	4.66	9500	6.12	12100	6.67	5000	6.49	12100	6.45	12500	7.10	3,580,400	6.34
Sum of Aged 45 to 49 years	9200	6.48	6400	6.23	5800	6.28	12400	6.43	8100	5.47	10500	6.77	12400	6.83	5000	6.49	11900	6.3	11700	6.65	3,602,600	6.38

Age Group	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Sum of Aged 50 to 54 years	10100	7.12	7600	7.40	6900	7.48	13000	6.75	10100	6.82	11900	7.67	12900	7.11	5600	7.27	13000	6.93	11800	6.70	3,907,700	6.92
Sum of Aged 55 to 59 years	10500	7.40	8100	7.89	7200	7.80	12000	6.23	11100	7.49	11100	7.15	12100	6.67	5600	7.27	12300	6.56	10800	6.14	3,806,300	6.74
Sum of Aged 60 to 64 years	9200	6.48	7300	7.11	6300	6.83	10000	5.19	10800	7.29	9300	5.99	10200	5.62	4500	5.84	10500	5.60	8400	4.77	3,256,100	5.76
Sum of Aged 65 to 69 years	8400	5.92	6700	6.52	5900	6.39	8600	4.46	10300	6.95	8400	5.41	8800	4.85	3800	4.94	8400	4.48	6700	3.81	2,767,500	4.90
Sum of Aged 70 to 74 years	9400	6.62	7300	7.11	6800	7.37	9700	5.03	12100	8.17	9000	5.80	9700	5.34	4000	5.19	8800	4.69	6800	3.86	2,796,600	4.95

Age Group	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Sum of Aged 75 to 79 years	7100	5.00	5200	5.06	5100	5.53	6900	3.58	9200	6.21	6300	4.06	7000	3.86	2900	3.77	6100	3.25	4400	2.50	2,038,800	3.61
Sum of Aged 80 to 84 years	4800	3.383	3500	3.41	3400	3.68	4600	2.39	6300	4.25	4200	2.71	4900	2.70	2200	2.86	4400	2.35	3100	1.76	1,427,900	2.53
Sum of Aged 85 to 89 years																						
Sum of Aged 90 years and over	3000	2.11	2100	2.04	2000	2.17	2800	1.45	3800	2.57	2400	1.55	3100	1.71	1600	2.08	2800	1.49	1800	1.02	872,200	1.54

Table A10.1.2 – Population Ethnicity throughout the study area

Indicator	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England and Wales	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Asian, Asian British or Asian Welsh	2562	1.8	821	0.8	875	0.9	9907	5.1	1794	1.1	2566	1.5	9646	5.3	3913	5.1	7995	4.4	12205	7	5,500,000	9.3
Black, Black British, Black Welsh, Caribbean or African	1164	0.8	553	0.5	503	0.5	6661	3.5	910	0.6	1889	1.3	4756	2.6	1747	2.3	8913	4.8	20877	11.8	2,400,000	4.0
Mixed or Multiple ethnic groups	2094	1.5	1463	1.4	1351	1.5	5602	2.9	2393	1.6	3014	1.9	4724	2.6	2368	3	4938	2.6	5252	3	1,700,000	2.9
White	135474	95.4	99463	96.8	89269	96.7	167701	87.0	142656	96.3	146981	94.7	160701	88.5	68194	88.5	164116	87.4	134984	76.8	4,800,000	81.7
Another ethnic group	654	0.5	401	0.4	344	0.4	2845	1.5	540	0.4	815	0.6	1696	0.9	826	1.1	1605	0.8	2675	1.5	564,000	2.1

Indicator	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock		England and Wales	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
Population who cannot speak English well or at all (%)	728	1.2	348	0.8	322	0.8	2858	3.6	455	0.3	670	0.4	1140	0.6	324	0.4	1324	0.7	3144	1.8	3,952,600	7.00

Table 10.1.3 - Deprivation, Housing and Employment Indicators

Indicator	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock	
	Value	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**
IMD Score (2019)	13.3	-	13.2	-	14.3	-	16.8	-	30.5	-	14.7	-	12.2	-	10	-	23.2	-	20.9	-
Income Deprivation	-	7.8	-	7.1	-	8	-	9.9	-	17.3	-	9.2	-	7.7	-	6.4	-	13.8	-	13
Child poverty	2,209	8.5	1,614	9.3	1,696	11	3,786	10.2	3,205	13.3	3,060	10.4	2,677	7.8	1,116	7.7	5,058	12.7	5,299	12.9 %
Older people in deprivation	-	9.0	-	8.3	-	8.8	-	10.7	-	15	-	11.2	-	8.3	-	8	-	14.6	-	14.8
older people living alone	-	26.8	-	26.8	-	28.3	-	29.9	-	31	-	29.6	-	28.5	-	29.7	-	32.2	-	31.9
overcrowded houses	-	2.6	-	2.9	-	3	-	7.1	-	5.1	-	4.8	-	5.8	-	6.4	-	7.1	-	9

Indicator	South Norfolk		Mid Suffolk		Babergh		Colchester		Tendring		Braintree		Chelmsford		Brentwood		Basildon		Thurrock	
	Value	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**	**Value**	**%**
Households in Fuel Poverty	-	13.0	-	13.1	-	13.2	-	13.4	-	16.5	-	13	-	10.6	-	10	-	12.3	-	13.4
Unemployment	-	2.0	-	2	-	2.4	-	3.5	-	3.1	-	2.8	-	2.7	-	2.6	-	3.3	-	3.8
Long term unemployment	-	1.0	-	0.5	-	0.8	-	1.5	-	2.6	-	0.7	-	1.5	-	0.6	-	1.2	-	0.6

Table 10.1.4 - Local Health Indicators in the study area

Indicator	South Norfolk	Mid Suffolk	Babergh	Colchester	Tendring	Braintree	Chelmsford	Brentwood	Basildon	Thurrock
Limiting long-term illness or disability (%)	17.9	16.6	17.4	15.8	25.5	16.4	14.4	15.6	17.4	15.6
Child weight Reception: prevalence of overweight (including obesity) (%)	19.9	19	20.1	20.5	28.1	23.7	21.2	19	22.7	23.1

Indicator	South Norfolk	Mid Suffolk	Babergh	Colchester	Tendring	Braintree	Chelmsford	Brentwood	Basildon	Thurrock
Child weight Year 6: prevalence of overweight (including obesity) (%)	29.9	30.8	29.9	32.8	35.8	32.9	30.9	26.3	35.4	39.8
Deliveries to teenage mothers (%)	0.6	0.4	0.3	0.5	1.1	0.6	0.4	N/A	0.7	0.5
General fertility rate: live births per 1,000 women aged 15-44 years (%)	57	52.3	54.3	54.9	62.6	61.6	59	61.3	68.4	68.9
Low birth weight of live babies (%)	6	6.2	5.9	7	6.9	6.7	5.7	5.2	6.2	6.4
Smoking prevalence at 15 years, Regular (%)	7.9	5.9	5.9	6.1	6	6.1	6	6.1	6.1	2.8
Life expectancy at birth for males (years)	81.4	81.7	81.4	80.2	78	80.1	81.3	81	79.2	78.6
Life expectancy at birth for females (years)	84.9	84.8	84.9	83.4	81.9	83.2	84.3	84.6	82.8	82.4
Hospital stays for self-harm (SAR)	96.9	184.2	135.7	207.63	289.2	145.48	134.88	96.74	200.48	142.4
Emergency Hospital Admissions for Intentional Self-Harm per 100,000 population (2020/21)	177.2	165.1	188.7	221.6	214.2	136.2	133.5	95.1	208.7	152.7
Personal well-being estimates: Anxiety measure	3.25	2.95	3.26	3.24	3.02	3.01	3.12	3.15	2.7	3

Indicator	South Norfolk	Mid Suffolk	Babergh	Colchester	Tendring	Braintree	Chelmsford	Brentwood	Basildon	Thurrock
Personal well-being estimates: Happiness measure	7.36	7.76	7.84	6.76	7.52	7.67	7.63	7.31	7.83	7.5
Personal well-being estimates: Life Satisfaction measure (/10)	7.36	7.99	7.8	7.35	7.63	7.8	7.69	7.58	7.66	7.77
Personal well-being estimates: Worthwhile measure	7.55	8.09	8.18	7.58	7.78	8.13	7.88	7.73	7.83	7.61
Percentage of physically inactive adults (19yrs+)	18.9	19.5	16.6	22.7	28.5	28	18.7	22.1	26.3	26

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

Registered in England and Wales
No. 4031152
nationalgrid.com