

# Proposed Electricity Substation and Overhead Lines Works at Weston Marsh

Otter and Water Vole Survey Report

June 2026

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# 1. Introduction

## 1.1 Overview

- 1.1.1 This Otter and Water Vole Survey Report has been prepared on behalf of National Grid Electricity Transmission plc (National Grid).
- 1.1.2 National Grid are proposing to undertake works to construct a new electricity substation, new sections of overhead line and modification of existing overhead lines west of the Spalding Tee-Point in the Weston Marsh area, within the administrative boundary of South Holland District Council (SHDC) in Lincolnshire.

## 1.2 Summary of the Scheme

- 1.2.1 In totality, the Scheme consists of four components, each planned to be progressed via separate consenting routes. These are summarised in **Table 1.1**.

Table 1.1 Components of the Scheme

Works Required	Consenting Regime
Construction of the new Air Insulated Substation (AIS) – 400 kV Weston Marsh Substation A, associated landscaping and environmental mitigation works, drainage, highways and other associated works.	Town and Country Planning Act 1990 (TCPA) (Ref 1) Component referred to as ‘ <b>Substation Works</b> ’
Construction of new sections of overhead line to connect the new substation into the existing 4ZM overhead line. Removal of a section of the existing 4ZM overhead line. Other associated works.	Section 37 of the Electricity Act (Ref 2)1989 and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ‘ <b>S37 4ZM Overhead Line Works</b> ’
Construction of a new section of overhead line to connect the existing 2WS overhead line into the new substation. Removal of a section of the existing 2WS overhead line. Other associated works.	Section 37 of the Electricity Act 1989 and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ‘ <b>S37 2WS Overhead Line Works</b> ’
Reconductoring works required on the existing 4ZM overhead line. Two spans of temporary overhead lines.	The Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref 3) and The Overhead Lines (Exemption) (England and Wales) Regulations 2009 (Ref 4) Component referred to as ‘ <b>Exempt Overhead Line Works</b> ’

- 1.2.2 The Substation Works will require consent from SHDC under the TCPA.
- 1.2.3 The new S37 4ZM Overhead Line Works and the S37 2WS Overhead Line Works (collectively referred to as ‘S37 Overhead Line Works’) will require consent from the Secretary of State for Energy Security and Net Zero under Section 37 of the Electricity Act 1989 (Section 37).
- 1.2.4 The Exempt Overhead Line Works constitute permitted development under Part 15 Class B of the Town and Country Planning (General Permitted Development) (England) Order 2015 and The Overhead Lines (Exemption) (England and Wales) Regulations 2009.
- 1.2.5 The Scheme Site Boundary, which consists of the land required to construct and operate the Scheme in its entirety, is illustrated on **Figure 1**. The areas of land required to construct and operate each individual component described in Table 1.1 are also illustrated on **Figure 1**.
- 1.2.6 The Scheme in its totality is a standalone development to enable connection of the Outer Dowsing Offshore Wind Farm to the national electricity transmission system. Each component stated in **Table 1.1** above is required for the Scheme to fully function as part of the national electricity transmission system (NETS).

### 1.3 Purpose of this report

- 1.3.1 This Otter and Water Vole Survey Report has been prepared in support of the necessary consent applications required to deliver the Scheme. It has been informed by engagement between National Grid and the relevant consenting authorities.
- 1.3.2 The assessment considers the Scheme in its entirety. Where the potential impacts and effects of the Scheme are associated with specific components as set out within **Table 1.1**, this is clearly identified within the following sections. This approach enables the relevant consenting authority to readily identify and consider only those impacts that are associated with the application before them, whilst also maintaining a clear understanding of the Scheme in its wider context.
- 1.3.3 The purpose of this report is to present the results of the otter and water vole surveys undertaken for the Scheme.
- 1.3.4 The objectives of this report are to:
- 1) Present desk study information of relevance to otter and water vole within the Study Area (refer to **Figure 3** and **Section 3.2**);
  - 2) Identify the presence or likely absence of otters and water voles within the Survey Area (refer to **Figure 4**, **Figure 5** and **Section 3.2**); and
  - 3) Provide sufficient information to inform an assessment of potential impacts to otters and water voles as a result of the Scheme works or identify where further survey is required to inform such assessment.
- 1.3.5 The assessment of potential impacts to otters and water voles and mitigation (where required) will be reported within the **Ecological Impact Assessment**.

## 1.4 Structure

1.4.1 This report is structured as follows:

- 1) Legislative and Policy Framework – This section provides an overview of the legislation, national, regional and local policy of relevance to this report.
- 2) Methodology – This section details the scope of the assessment, study and Survey Area, data collection that has informed the assessment, the approach and any assumptions and limitations.
- 3) Baseline – This section details the baseline characteristics of the receiving environment against which the Scheme is assessed.
- 4) Summary – This section provides a summary of the outcomes of the report.

## 2. Legislative and Policy Framework

### 2.1 Overview

2.1.1 Legislation, national and local planning policy relevant to the Scheme is described in further detail in the Planning, Design and Access Statement (TCPA application) and the Section 37 (S37 applications). Key legislation and policy relevant to otters and water voles is summarised in the following sections.

### 2.2 National Legislation and Policy

#### Otters

2.2.1 Otters are protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 1). Under regulation 43, it is an offence to deliberately capture, injure or kill an otter, or to deliberately disturb otters in a manner likely to impair their ability to survive, breed, rear or nurture young, or significantly affect the local distribution or abundance of the species. The Regulations also protect otter breeding sites and resting places, making it an offence to damage or destroy such features, whether or not otters are present at the time.

2.2.2 Otters are also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (Ref 6). Under Section 9 of this Act, it is an offence to intentionally or recklessly disturb otters while they occupy a place used for shelter or protection, obstruct access to such places, or possess, transport or trade otters (alive or dead), or any part thereof.

2.2.3 In addition, otters are listed (Ref 23) as a species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC) (Ref 7), requiring public authorities to have regard to the conservation of the species when exercising their functions. This duty is reinforced by the broader objectives of the Environment Act 2021 (Ref 8), which places increased emphasis on halting species decline and enhancing biodiversity through development and land-use planning.

2.2.4 Where works are likely to result in an offence under the above legislation, a mitigation licence issued by Natural England may be required prior to construction.

#### Water Voles

2.2.5 Water voles are protected in England under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (Ref 6). Under Section 9 of this Act it is an offence to intentionally kill, injure or take a water vole, or to intentionally or recklessly damage, destroy or obstruct access to any structure or place used by water voles for shelter or protection (including burrows), or to disturb water voles while occupying such places.

2.2.6 Water voles are also listed (Ref 23) as a species of principal importance under Section 41 of the NERC Act 2006 (Ref 7), requiring their conservation to be

considered as part of decision-making by competent authorities. This duty is reinforced by the broader objectives of the Environment Act 2021 (Ref 8), which places increased emphasis on halting species decline and enhancing biodiversity through development and land-use planning.

- 2.2.7 Where development activities risk causing an offence, appropriate avoidance measures, mitigation, or where necessary, licensing arrangements must be implemented in accordance with Natural England standing advice (Ref 9; Ref 10).

## National Planning Policy Framework

- 2.2.8 The National Planning Policy Framework (NPPF) was most recently updated in December 2024 (Ref 13) and is a material consideration for planning decisions. The Framework establishes a presumption in favour of sustainable development (paragraph 11) as its central principle and requires the planning system to pursue three mutually supportive overarching objectives (economic, social and environmental objectives (paragraph 8)).
- 2.2.9 Chapter 15 of the NPPF is relevant to the receptors identified within this report. Paragraph 187 requires planning policies and decisions to protect and enhance sites of biodiversity value and to minimise impacts on valued habitats and species. Paragraph 193 establishes the key decision-making principles when determining planning applications. These include: *‘where significant harm to biodiversity resulting from a development cannot be avoided through alternative siting, adequately mitigated, or as a last resort compensated for, planning permission should be refused.’*

## 2.3 Regional and Local Policy

- 2.3.1 Regional and local plans or policies relevant to this assessment are as follows:
- 1) South Holland District (Lincolnshire): South East Lincolnshire Local Plan 2011-2036 (Ref 11):
    - a) Policy 28 The Natural Environment: supports protecting, managing and enhancing a high quality, comprehensive ecological network of interconnected designated sites, sites of nature conservation importance and wildlife-friendly greenspace; and
    - b) Policy 31 Climate Change and Renewable and Low Carbon Energy: notes that all development proposals will be required to demonstrate that the consequences of current climate change have been addressed, minimised and mitigated by (amongst other measures) incorporating measures which promote and enhance green infrastructure and provide an overall net gain in biodiversity. This policy also stipulates that the development of renewable energy facilities and associated infrastructure will be permitted provided that individually or cumulatively, there would be no significant harm to the natural environment.
  - 2) Lincolnshire Biodiversity Action Plan (BAP) (3rd edition) (Ref 13) provides the local nature conservation strategy for identifying threats to species within the country and set out the action plans necessary to conserve them. This Local BAP provides context to inform the identification and, or uncommon species within the relevant districts and, or county. It also identifies priorities for conservation and enhancement but confer no particular legislative or policy

protection to the species identifies. However, in some cases this is provided through related legislation and local planning. The Lincolnshire BAP lists the following threats to water voles within the county:

- a) Damage to (and loss of) habitat due to insensitive routine maintenance of channel and bankside vegetation and the engineering of watercourses;
- b) Developments within the floodplain can result in the direct loss of water vole habitat;
- c) Fluctuations in water level due to land drainage, flood control, irrigation schemes and drought. Water voles create access holes to their burrows based on water levels during the active summer months; when water levels are lowered in the winter, burrow entrances can be left exposed and vulnerable to predation;
- d) Population fragmentation leaves colonies remote from their neighbours. Colonies isolated by lack of continuity of habitat are more at risk of local extinctions with no chance of repopulation;
- e) Predation, particularly by American mink *Neovison vison*. Though it has been suggested that the phocine distemper virus may have limited mink numbers on the Lincolnshire coast;
- f) Pollution of the aquatic environment by contaminants discharged from industry, agriculture and urban waste treatment; and
- g) Persecution through the improper use of rodenticides.

2.3.2 There is no specific Species Action Plan for otters in the Lincolnshire BAP. They are known to be present in most Lincolnshire river catchments and are likely to continue to spread, provided that watercourse management continues to offer suitable habitat. Monitoring will continue to take place for otters on an ad hoc basis even though no specific actions have been identified.

# 3. Methodology

## 3.1 Scope of the Assessment

3.1.1 The scope of this survey report has been determined in accordance with relevant industry guidance and standing advice and is considered appropriate to assess potential effects arising from the Scheme.

3.1.2 An evaluation of the potential constraints associated with otters and water voles, incorporating both desk-based and field-based data collection, was conducted in accordance with established guidelines for best practices (Monitoring the otter (Ref 13); Water Vole Conservation Handbook (Ref 15) and The Water Vole Mitigation Handbook (Ref 16). The methods undertaken are detailed below.

## 3.2 Study Area and Survey Area

3.2.1 The desk Study Area (hereinafter referred to as the 'Study Area') for otters and water voles is defined as within 2 km of the Scheme Site Boundary (**Figure 1**).

3.2.2 The Survey Area for otters and water voles for the riparian surveys was defined as all watercourses within the Scheme Site Boundary plus 200 m upstream and downstream.

3.2.3 The Survey Area for otters for the terrestrial surveys was defined as suitable terrestrial habitat, such as woodland, dense scrub and reedbeds, located within the Scheme Site Boundary and a 200 m buffer, and within 100 m of a watercourse.

3.2.4 The Survey Areas are all shown in **Figure 4** and **Figure 5**.

## 3.3 Data Collection

### Desk Study

3.3.1 A desk study was completed as part of the **Ecological Impact Assessment** and subsequently reviewed to inform this report.

3.3.2 As part of this process, the Greater Lincolnshire Nature Partnership (GLNP) was contacted in February 2026 to obtain records of protected and notable species, including otter and water vole within 2 km of the Scheme Site Boundary. The returned dataset provided all available records of relevance within the Study Area.

### Field Surveys

#### Otter

#### Habitat Suitability Assessment

3.3.3 Aquatic scoping surveys were undertaken over winter 2024/2025 on a total of 27 watercourses within the Survey Area. A further 10 watercourses not subject to

aquatic scoping were surveyed for otter habitat suitability. These surveys assessed suitability for a range of aquatic and semi-aquatic receptors, including macrophytes, macroinvertebrates, fish, great crested newts, otters and water voles. Watercourses were evaluated based on water quantity (e.g. depth, permanence), hydromorphological characteristics (e.g. substrate, flow type, channel form), and surrounding riparian habitat. Watercourses considered suitable for otter were subsequently scoped in for further survey in 2025 and 2026.

3.3.4 Each accessible watercourse within the Study Area was assessed for otter habitat suitability. Following the aquatic scoping surveys, watercourses identified as having suitability for otters were surveyed.

3.3.5 Two surveys visits were undertaken, one during the early season (mid-April to June) and one during the late season (July to September) to inform an otter habitat suitability assessment. Habitat conditions were assessed on both occasions to account for seasonal variation in factors influencing suitability, including channel form, flow, riparian cover and connectivity, in accordance with best practice guidelines (Ref 9 and Ref 13). Based on this assessment, each watercourse was assigned a suitability ranking of negligible, low, moderate or high for otter suitability. Watercourses were considered to be suitable if they provided a food supply, contained a sufficient quantity of potential resting sites, were subject to low levels of disturbance and were free from pollutants (Ref 13). The habitat suitability assessment involved assessing the following features of each watercourse:

- 1) Availability of suitable habitat features, including shelter, resting and breeding opportunities, and accessible foraging areas;
- 2) Bank and channel characteristics, such as bank profile, depth, substrate composition, management, channel width, flow speed, and degree of channel modification (e.g., canalisation, realignment);
- 3) Shading and vegetation structure along the watercourse providing cover and supporting prey species;
- 4) Water quality and visible pollution with potential to affect prey abundance or otter health;
- 5) Disturbance levels, including proximity to Public Right of Way (PRoWs), farm tracks, roads, and other human activity adjacent to the watercourse;
- 6) Connectivity and movement routes, such as the potential for otters to use culverts, bridges, dry channels, and other structures for commuting and dispersal; and
- 7) Wider landscape context and adjacent land use, influencing both disturbance and habitat availability.

#### Otter Field Signs Survey

3.3.6 Watercourses assessed as suitable for otter were subsequently surveyed for field signs, in accordance with best practice guidelines (Ref 13). Surveys involved systematic examination of the channel, banks and adjacent terrestrial habitat for evidence of otters including:

- 1) confirmed or potential natal and non-natal holt sites;
- 2) confirmed or potential couches;

- 3) spraints;
- 4) anal jelly;
- 5) tracks/footprints;
- 6) direct sightings;
- 7) feeding remains; and
- 8) silt/sand heaps and slides.

- 3.3.7 All accessible lengths of each watercourse within the Scheme Site Boundary and up to 200 m upstream and downstream were searched for signs of otter. This included bankside and channel assessments by surveyors. Restricted access along watercourses was limited to dense vegetation or prohibited access (landowner refusal).
- 3.3.8 All field signs found were photographed, mapped using GPS (accurate to less than 5 m), and assigned a standardised survey and location reference code.
- 3.3.9 All surveys were undertaken by experienced ecologists meeting the CIEEM competencies for otter surveys (Ref 17) and were familiar with the Common Standard Monitoring Guidance for Mammals (Ref 18), the Design Manual for Roads and Bridges (DMRB) LA 108 Biodiversity (Ref 19) and supplementary conservation advice on otters (now withdrawn).
- 3.3.10 The surveys were undertaken under optimal conditions at suitable times of the year with no periods of heavy rain in the week preceding the surveys (which may have washed away field signs). Any limitations are described in **Section 3.4**.
- 3.3.11 Following the field sign surveys, each watercourse was assigned a precautionary otter status category (present, potentially present or likely absent) to inform the subsequent impact assessment. Survey dates for each of the 35 watercourses surveyed for otter field signs are provided in **Table 3.2** and results are displayed on **Figure 6**.

#### Otter Terrestrial Survey

- 3.3.12 A terrestrial otter survey was undertaken during winter 2024/2025 in accordance with established best-practice guidance (Ref 13 and Ref 9). Suitable terrestrial habitats within 100 m of a watercourse within the Scheme Site Boundary and a 200 m buffer, including woodland, dense scrub and reedbeds, were systematically inspected for potential otter resting and breeding features, such as holts and couches. Habitats providing connectivity between watercourses and terrestrial features, including wet and dry ditches and linear vegetated corridors, were also examined to identify potential otter movement routes and connectivity. All field signs found were photographed, mapped using GPS (accurate to less than 5 m), and assigned a standardised survey and location reference code.

#### Otter Holt Monitoring

- 3.3.13 Features identified as having suitability to function as otter resting places were subject to detailed monitoring, including invasive inspection and camera-trapping conducted under Natural England licence.
- 3.3.14 A total of three potential resting sites were identified within the Survey Areas for each consenting boundary (Substation Works Site Boundary, S37 4ZM Overhead

Line Works Site Boundary, S37 2WS Overhead Line Works Site Boundary and Exempt Overhead Line Works Site Boundary).

#### Invasive Surveys

- 3.3.15 Invasive surveys were undertaken to confirm whether features identified within, or up to 100 m from, the Scheme Site Boundary functioned as otter resting places. These surveys were carried out under a survey licence from Natural England by accredited individuals.
- 3.3.16 A structured and precautionary approach was applied. Each feature was first subject to 2-3 days of pre-inspection camera-trapping to confirm that no otter was present at the time of survey. Where footage showed an otter remaining within a structure for 15 minutes or more, indicative of resting behaviour, the feature was classified as a resting site and not subjected to invasive inspection, except where additional camera-trapping was necessary to determine breeding status.
- 3.3.17 Invasive inspections were conducted only where pre-inspection evidence confirmed that the feature was unoccupied. The method involved visual assessment of the internal structure of cavities, erosion features, tree root systems and other enclosed spaces that could not be adequately evaluated during walkover surveys. Equipment included high-powered torches, flash photography and pole-mounted cameras (e.g. GoPro cameras or endoscopes). All inspections were non-destructive, and no structure was altered or excavated. Any evidence of resting use (e.g. latrines, bedding material) was recorded systematically and used to refine the classification of each feature.
- 3.3.18 Invasive surveys were undertaken during daylight between January and February 2026, with each inspection typically lasting less than one hour. Dates and surveyors are shown in **Table 3.1**.

**Table 3.1** Invasive Otter Survey Dates and Surveyors

Feature ID	Survey Dates	Surveyors
GtW-ARP-OtterCTBasePt-79418	14/01/2026 and 20/01/2026	BS and JK
GtW-ARP-OtterCTDetailsPt-79726	14/01/2026, 20/01/2026, 10/02/2026 and 23/03/2026	BS, JK, PD and DW
GtW-ARP-OtterCTBasePt-79654	14/01/2026, 20/01/2026, 10/02/2026 and 23/03/2026	BS, JK, PD and DW

#### Camera-Trapping of Potential and Confirmed Resting Sites

- 3.3.19 Camera-trapping was undertaken to determine whether potential features were used by otters for resting and, where relevant, to characterise the type of use. These surveys were carried out under a survey licence from Natural England by accredited individuals. Deployment followed a standardised, evidence-based protocol. For enclosed structures, the following approach was applied:
- 1) One camera per entrance (increasing to two where detection probability was reduced);
  - 2) Cameras positioned 2 – 3 m from entrances and approximately 30 cm above ground level;

- 3) Fully covert 940 nm 'no-glow' LED infrared cameras only;
- 4) Cameras set to video mode;
- 5) Camera placement avoided established otter paths or flattened vegetation; and
- 6) For open, above-ground resting sites, the protocol was as follows:
  - a) Cameras were set to time-lapse, capturing one image every 15 minutes; and
  - b) PIR activation was not required, enabling more flexible positioning.

3.3.20 Surveyors followed strict protocols to minimise disturbance, including rapid camera exchange and limiting each visit to under one minute per feature. Routine maintenance (retrieving data, replacing batteries and redeploying cameras) was undertaken at minimum three-week intervals, unless early removal was required due to predicted spate events. Cameras were deployed for a maximum of 18 weeks but were removed sooner where sufficient evidence had already been obtained (e.g. confirmation of use as a resting site or use by a female with pups).

3.3.21 Camera-trapping at enclosed structures was undertaken primarily between January and May 2026, while open structures were monitored throughout the full project window.

## Water Vole

### Habitat Suitability Assessment

3.3.22 The aquatic scoping surveys described in **Paragraph 3.3.3** were also used to assess the suitability of watercourses for water voles and were used to inform the water vole survey scope for detailed surveys. Following the initial aquatic scoping surveys, only those watercourses identified as suitable were subject to detailed water vole survey.

3.3.23 Surveys for water vole field signs followed the methods set out in the Water Vole Conservation Handbook (Ref 15) and the Water Vole Mitigation Handbook (Ref 16). All surveys were undertaken during the species' main breeding season (April to September) and only during suitable weather conditions. Surveys were avoided during periods of prolonged or heavy rainfall, flooding, frost or drought, where water vole field signs may be obscured, washed away or otherwise difficult to detect. Weather conditions at the time of survey were therefore considered suitable to allow reliable identification of water vole burrows, latrines, feeding remains and footprints.

3.3.24 Each watercourse was surveyed twice: once during the early season (mid-April to June) and once during the late season (July to September). Habitat assessments were undertaken during both visits to capture seasonal variation. Each watercourse was assigned a suitability rating of negligible, low, moderate or high. Habitat suitability was based on assessment of:

- 1) Bank profile, channel profile and characteristics and water levels;
- 2) Availability of food sources;
- 3) Vegetation structure (particularly the extent of suitable marginal vegetation);
- 4) Level of shading;

- 5) Disturbance levels;
- 6) Bordering land use; and
- 7) Connectivity with other areas of suitable or sub-optimal habitat.

3.3.25 Water vole habitat suitability was further assessed using the methodology developed by Harris et al. 2009 (Ref 20). The Water Vole Habitat Suitability (WVHS) assessment assigns a score between 1 and 8 to watercourses based on the presence of key habitat features beneficial to the species. Each feature scores one point:

- 1) Well-developed bankside and emergent vegetation (>60% cover) providing shelter;
- 2) Year-round availability of food resources;
- 3) Presence of refuge areas above extreme water levels;
- 4) Steep banks suitable for burrow excavation;
- 5) Permanent open water;
- 6) Presence of a berm at the waterline;
- 7) Lack of disturbance, including poaching, heavy grazing, or recent mechanical management; and
- 8) Nest-building opportunities within tall vegetation above the waterline.

3.3.26 There is a demonstrable relationship between WVHS score and the likelihood of water vole occupancy (Ref 21). Application of the methodology indicates:

- 1) Ditches scoring 5 or more routinely support water voles;
- 2) Ditches scoring 6 or more are considered to provide 'optimal' habitat;
- 3) Ditches scoring 3 and 4, when associated with higher scoring habitats, will generally provide 'sink' habitat later in the breeding season, most likely for juvenile animals. Ditches scoring 3 and 4 would not be able to support a year-round viable population of water vole in isolation and are considered unlikely to support water voles during the late winter period at any location;
- 4) Ditches scoring 1 and 2 are considered to be unsuitable for water vole as they lack the food cover and habitat features necessary for the species; and
- 5) Ditches which lack permanent open water are generally also considered unsuitable for water vole. The exception may be later in the breeding season when and if food and cover are present. Such an environment may be considered as offering a 'sink' habitat for dispersing juvenile water voles if other better-quality habitats nearby are at full occupancy.

### Water Vole Field Signs Surveys

3.3.27 Watercourses assessed as suitable for supporting water voles (based on the habitat suitability assessment) were subsequently surveyed for field signs. Surveyors inspected both banks of each watercourse, extending up to 2 m from the water's edge, for evidence of water vole activity. The number and type of field signs were recorded to provide an indication of relative abundance. Field signs included:

- 1) Latrines;
- 2) Burrows (both active and inactive);
- 3) Runs;
- 4) Footprints;
- 5) Feeding remains;
- 6) Individual droppings; and
- 7) Sightings and/or sounds (characteristic sound entering the water) of individuals.

- 3.3.28 All accessible lengths of each watercourse were also surveyed for water vole field signs through bankside and channel assessments. Access limitations were restricted to areas of dense vegetation or locations where landowner permission could not be obtained. Surveys were undertaken within the Scheme Site Boundary and up to 200 m upstream and downstream.
- 3.3.29 An indication of relative population size along each watercourse was estimated based on the number of latrines recorded per site, within the Survey Area.
- 3.3.30 All surveys were undertaken by experienced ecologists meeting the CIEEM competencies for water vole surveys (Ref 22) and were familiar with the Common Standard Monitoring Guidance for Mammals (Ref 18) and the methods set out in the Water Vole Mitigation Handbook (Ref 16).
- 3.3.31 Surveys were carried out under optimal conditions and at appropriate times of year. No surveys were undertaken following periods of heavy rain, which could wash away field signs. Any limitations are described in **Section 3.4**.
- 3.3.32 Following the field sign surveys, each watercourse was assigned a precautionary water vole status category (present, potentially present or likely absent) to inform the subsequent impact assessment. Survey dates for each of the 35 watercourses surveyed for water vole field signs are provided in **Table 3.2** and results displayed in **Figure 7**.

**Table 3.2 Otter and Water Vole Surveyed Watercourses**

<b>Watercourse ID</b>	<b>Date Surveyed</b>	<b>Surveyors</b>
RIPWC_1170	17/06/2024 07/08/2025	NF and BD
RIPWC_1174	19/06/2024	EH and DH
RIPWC_1178	19/06/2024 01/09/2024	EH and DH
RIPWC_1578	10/09/2024	RC and DH
RIPWC_1621	16/09/2024	DS and BC
RIPWC_1637	17/09/2024	AS and EB
RIPWC_1639	17/09/2024	AS and EB

<b>Watercourse ID</b>	<b>Date Surveyed</b>	<b>Surveyors</b>
RIPWC_254	06/06/2025 07/08/2025	EB and ER
RIPWC_255	05/06/2025 02/09/2025	LB and JS
RIPWC_257	05/06/2025 02/09/2025	LB and JS
RIPWC_258	04/06/2025 17/09/2025	LB and JS
RIPWC_266	04/06/2025	LB and JS
RIPWC_270	24/09/2025	MH and TL
RIPWC_44	02/05/2025	EB and ER
RIPWC_45	02/05/2025	EB and ER
RIPWC_46	29/05/2025	EB and ER
RIPWC_487	29/05/2025	KJ and DR
RIPWC_636	02/05/2025 07/08/2025	EB and ER
RIPWC_639	23/04/2025 08/08/2025	EB and ER
RIPWC_645	01/05/2025 07/08/2025	EB and ER
RIPWC_721	Scheduled for summer 2026	N/A
RIPWC_727	02/05/2025 07/08/2025	EB and ER
RIPWC_733	Scheduled for summer 2026	N/A
RIPWC_735	Scheduled for summer 2026	N/A
RIPWC_736	01/05/2025	EB and ER
RIPWC_744	Scheduled for summer 2026	N/A
RIPWC_805	01/05/2025	EB and ER

## 3.4 Limitations

- 3.4.1 Species records provided by local records centres are not often collected as a result of systematic surveys and therefore geographic, temporal, and species coverage are not often representative. As such, a lack of records of a species in an area does not necessarily mean an absence of this species.
- 3.4.2 It was not possible to undertake a habitat suitability index (HSI) assessment of all watercourses within the Survey Area due to lack of land access permission and dense vegetation. A summary of the limitations for the survey at each watercourse is provided in **Table 3.3** below. The limitations did not pose a significant constraint on the surveys and sufficient data was collected to inform the impact assessment.
- 3.4.3 Four watercourses could not be surveyed due to no access being granted. These will be surveyed in 2026 and the results provided as an addendum report. The watercourses are highlighted in **Table 3.2**.

Table 3.3 Summary of survey limitation

Waterbody ID	Habitat Suitability Survey Undertaken	Field Survey Undertaken	Summary of Limitations
RIPWC_254	Yes	Yes	Too deep in centre, banks too steep to descend into drain. Observed from banks.
RIPWC_255	Yes	Yes	Dense bramble throughout majority of ditch.
RIPWC_639	Yes	Yes	Water too deep to wade, banks too steep to descend. Used binoculars where possible to view the bankside.
RIPWC_645	Yes	Yes	Cannot walk through channel due to dense common reed which is impassable. Surveyed from bank.
RIPWC_736	Yes	Yes	Very dense reed, banks checked as well as we could, but no evidence of water voles found.

# 4. Baseline

## 4.1 Desk Study

- 4.1.1 There are no sites designated for otters or water voles within the Study Area.
- 4.1.2 The desk study returned one record of an otter fatality located 2.4 km north east of the Scheme Site Boundary.
- 4.1.3 The desk study returned 216 records of water vole field observations. Five of the records are within the Scheme Site Boundary. The records are concentrated on Lord’s Drain to the east and south of the Scheme Site Boundary.

## 4.2 Field Surveys

### Habitat Suitability Index

- 4.2.1 The results of the HSI surveys for otters and water voles within the Survey Areas for each consenting boundary (Substation Works Site Boundary, S37 4ZM Overhead Line Works Site Boundary, S37 2WS Overhead Line Works Site Boundary and Exempt Overhead Line Works Site Boundary) are summarised in **Table 4.1** below, detailed within **Appendix A** and displayed in **Figures 5** and **6** for otters and water voles respectively.
- 4.2.2 The majority of watercourses within the Study Area were dry with significant levels of terrestrial vegetation (e.g. grasses, nettles and bramble), suggesting that they have been dry for a long period of time.
- 4.2.3 There were four watercourses suitable for otters and three suitable for water voles (one optimal and two sub-optimal).

Table 4.1 Habitat Suitability Survey Results for Otter and Water Vole

Watercourse ID	Substation Works Site Boundary	S37 4ZM Overhead Line Works Site Boundary	S37 2WS Overhead Line Works Site Boundary	Exempt Overhead Line Works Site Boundary	Otter HSI Survey Result	Water Vole HSI Result
RIPWC_44				✓	Negligible	Unsuitable
RIPWC_45				✓	Negligible	Unsuitable
RIPWC_46				✓	Negligible	Unsuitable
RIPWC_254		✓	✓	✓	Moderate	Optimal
RIPWC_255				✓	Negligible	Unsuitable

Watercourse ID	Substation Works Site Boundary	S37 4ZM Overhead Line Works Site Boundary	S37 2WS Overhead Line Works Site Boundary	Exempt Overhead Line Works Site Boundary	Otter HSI Survey Result	Water Vole HSI Result
RIPWC_257				✓	Negligible	Unsuitable
RIPWC_258				✓	Negligible	Unsuitable
RIPWC_266				✓	Negligible	Unsuitable
RIPWC_270				✓	Negligible	Unsuitable
RIPWC_487	✓	✓	✓		Negligible	Unsuitable
RIPWC_636	✓	✓	✓	✓	Negligible	Unsuitable
RIPWC_639	✓	✓	✓		High	Sub-optimal
RIPWC_645	✓	✓		✓	Negligible	Unsuitable
RIPWC_721	✓	✓	✓		N/A – To be completed in summer 2026	N/A – To be completed in summer 2026
RIPWC_727	✓	✓	✓		Negligible	Unsuitable
RIPWC_733	✓				N/A – To be completed in summer 2026	N/A – To be completed in summer 2026
RIPWC_735	✓				N/A – To be completed in summer 2026	N/A – To be completed in summer 2026
RIPWC_736				✓	Negligible	Unsuitable
RIPWC_744				✓	N/A – To be completed in summer 2026	N/A – To be completed in summer 2026

Watercourse ID	Substation Works Site Boundary	S37 4ZM Overhead Line Works Site Boundary	S37 2WS Overhead Line Works Site Boundary	Exempt Overhead Line Works Site Boundary	Otter HSI Survey Result	Water Vole HSI Result
RIPWC_805	✓	✓			Negligible	Unsuitable
RIPWC_1170	✓	✓	✓	✓	Negligible	Unsuitable
RIPWC_1174				✓	Negligible	Unsuitable
RIPWC_1178				✓	Negligible	Unsuitable
RIPWC_1578				✓	Negligible	Unsuitable
RIPWC_1621	✓	✓	✓		Negligible	Unsuitable
RIPWC_1637	✓	✓	✓		Negligible	Unsuitable
RIPWC_1639	✓				Negligible	Unsuitable

## Otter Field Sign Survey

### Substation Works

- 4.2.4 No field signs from otters were recorded within the Survey Area for the Substation Works Site Boundary.
- 4.2.5 One potential resting place was recorded within the Substation Works Site Boundary. The potential holt was a disused badger sett on the bank of RIPWC\_1637. Monitoring of the hole commenced on 14 January 2026. An internal inspection on 10 February 2026 recorded that the internal area of the hole had collapsed, with rat sized burrows within. As of April 2026, there were no signs of otters recorded at the hole. Monitoring will continue into early summer 2026.
- 4.2.6 One further potential resting place was recorded within 200 m of the Substation Works Site Boundary. This was a pollarded willow with a large internal cavity located approximately 65 m from the Substation Works Site Boundary. Following an internal inspection on 10 February 2026, it was assessed that the cavity was too small to be used by an otter. Camera trap footage yielded not recordings of otters, only brown rat.
- 4.2.7 It is assessed that otters are not currently using the watercourses within the Substation Works Site Boundary for resting. However, as otters are a highly mobile, widespread species and in advance of the completion of further survey work scheduled for summer 2026, it is assumed that otters are using the site for commuting purposes at least.

### **S37 4ZM Overhead Line Works**

- 4.2.8 No field signs from otters were recorded within the Survey Area for the S37 4ZM Overhead Line Works Site Boundary.
- 4.2.9 One potential holt was recorded within the S37 4ZM Overhead Line Works Site Boundary. No potential otter resting places were recorded within 200 m of the S37 4ZM Overhead Line Works Site Boundary.
- 4.2.10 The potential holt was a disused badger sett on the bank of RIPWC\_1637. Monitoring of the hole commenced on 14 January 2026. An internal inspection on 10 February 2026 recorded that the internal area of the hole had collapsed, with rat sized burrows within. As of April 2026, there were no signs of otters recorded at the hole. Monitoring will continue into early summer 2026.
- 4.2.11 It is assessed that otters are currently not using the watercourses within the S37 4ZM Overhead Line Works Site Boundary for resting. However, as otters are a highly mobile, widespread species and in advance of the completion of further survey work scheduled for summer 2026, it is assumed that otters are using the site for commuting purposes at least.

### **S37 2WS Overhead Line Works**

- 4.2.12 No field signs from otters were recorded within the Survey Area for the S37 2WS Overhead Line Works Site Boundary.
- 4.2.13 One potential holt was recorded within the S37 2WS Overhead Line Works Site Boundary. No potential otter resting places were recorded within 200 m of the S37 2WS Overhead Line Works Site Boundary.
- 4.2.14 The potential holt was a disused badger sett on the bank of RIPWC\_1637. Monitoring of the hole commenced on 14 January 2026. An internal inspection on 10 February 2026 recorded that the internal area of the hole had collapsed, with rat sized burrows within. As of April 2026, there were no signs of otters recorded at the hole. Monitoring will continue into early summer 2026.
- 4.2.15 It is assessed that otters are currently not using the watercourses within the S37 2WS Overhead Line Works Site Boundary for resting. However, as otters are a highly mobile, widespread species and in advance of the completion of further survey work scheduled for summer 2026, it is assumed that otters are using the site for commuting purposes at least.

### **Exempt Overhead Line Works**

- 4.2.16 No field signs from otters were recorded within the Survey Area for the Exempt Overhead Line Works Site Boundary.
- 4.2.17 Two potential otter resting places were recorded within the Exempt Overhead Line Works Site Boundary. No potential resting places were recorded within 200 m of the Exempt Overhead Line Works Site Boundary.
- 4.2.18 One of the potential resting places was a pollarded willow with a large internal cavity. Following an internal inspection on 10 February 2026, it was assessed that the cavity was too small to be used by an otter. Camera trap footage yielded not recordings of otters, only brown rat. Monitoring will continue into early summer 2026.

- 4.2.19 The second potential resting place was within a reedbed. A detailed inspection of the area was conducted in January 2026. No field signs of otter were recorded. However, field signs of badger and rat were recorded. This potential resting place was scoped out of further survey on the basis that it is considered unsuitable for use by otters.
- 4.2.20 It is assessed that otters are currently not using the watercourses within the Exempt Overhead Line Works Site Boundary for resting. However, as otters are a highly mobile, widespread species and in advance of the completion of further survey work scheduled for summer 2026, it is assumed that otters are using the site for commuting purposes at least.

## Water Vole Field Sign Survey

### Substation Works

- 4.2.21 No field signs of water vole were recorded within the Substation Works Site Boundary.
- 4.2.22 Several mammal burrows were recorded. As were rat droppings, indicating that the burrows are rat rather than water vole.
- 4.2.23 Given the absence of field signs, it is assumed that water voles are absent from the Substation Works Site Boundary. However, it should be noted that these findings are subject to ongoing survey work and therefore represent a preliminary baseline pending completion of surveys scheduled through summer 2026.

### S37 4ZM Overhead Line Works

- 4.2.24 No field signs of water vole were recorded within the S37 4ZM Overhead Line Works Site Boundary.
- 4.2.25 Several mammal burrows were recorded. As were rat droppings, indicating that the burrows are rat rather than water vole.
- 4.2.26 Given the absence of field signs, it is assumed that water voles are absent from the S37 4ZM Overhead Line Works Site Boundary. However, it should be noted that these findings are subject to ongoing survey work and therefore represent a preliminary baseline pending completion of surveys scheduled through summer 2026.

### S37 2WS Overhead Line Works

- 4.2.27 No field signs of water vole were recorded within the S37 2WS Overhead Line Works Site Boundary.
- 4.2.28 Several mammal burrows were recorded. As were rat droppings, indicating that the burrows are rat rather than water vole.
- 4.2.29 Given the absence of field signs, it is assumed that water voles are absent from the S37 2WS Overhead Line Works Site Boundary. However, it should be noted that these findings are subject to ongoing survey work and therefore represent a preliminary baseline pending completion of surveys scheduled through summer 2026.

### **Exempt Overhead Line Works**

- 4.2.30 No field signs of water vole were recorded within the Exempt Overhead Line Works Site Boundary.
- 4.2.31 Several mammal burrows were recorded. As were rat droppings, indicating that the burrows are rat rather than water vole.
- 4.2.32 A suspected mink scat and kill was recorded on the edge of watercourse RIPWC\_1178. Mammal paths in and out of the scrub and grass on the edge of the watercourse were also recorded.
- 4.2.33 Given the absence of field signs, it is assumed that water voles are absent from the Exempt Overhead Line Works Site Boundary. However, it should be noted that these findings are subject to ongoing survey work and therefore represent a preliminary baseline pending completion of surveys scheduled through summer 2026.

## 5. Summary

- 5.1.1 No evidence of otter was identified during the desk study.
- 5.1.2 The desk study returned records of water vole within the study Area and within the Scheme Site Boundary. The records are concentrated outside of the Scheme Site Boundary on Lord's Drain to the east and south.
- 5.1.3 The survey results indicate that otter and water voles are currently absent from the watercourses surveyed within the Survey Areas of the four consenting boundaries (Substation Works Site Boundary, S37 4ZM Overhead Line Works Site Boundary, S37 2WS Overhead Line Works Site Boundary and Exempt Overhead Line Works Site Boundary).
- 5.1.4 The un-surveyed watercourses (see **Table 3.2**) will be visited in spring and summer 2026 and the results provided as an addendum report in summer 2026.

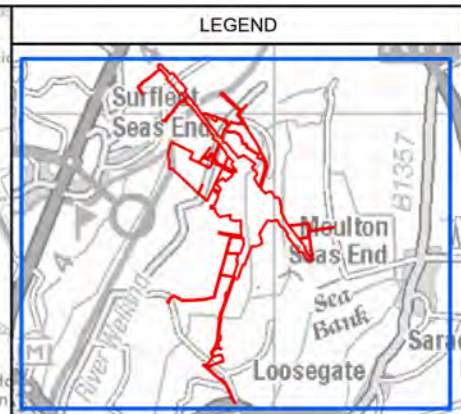
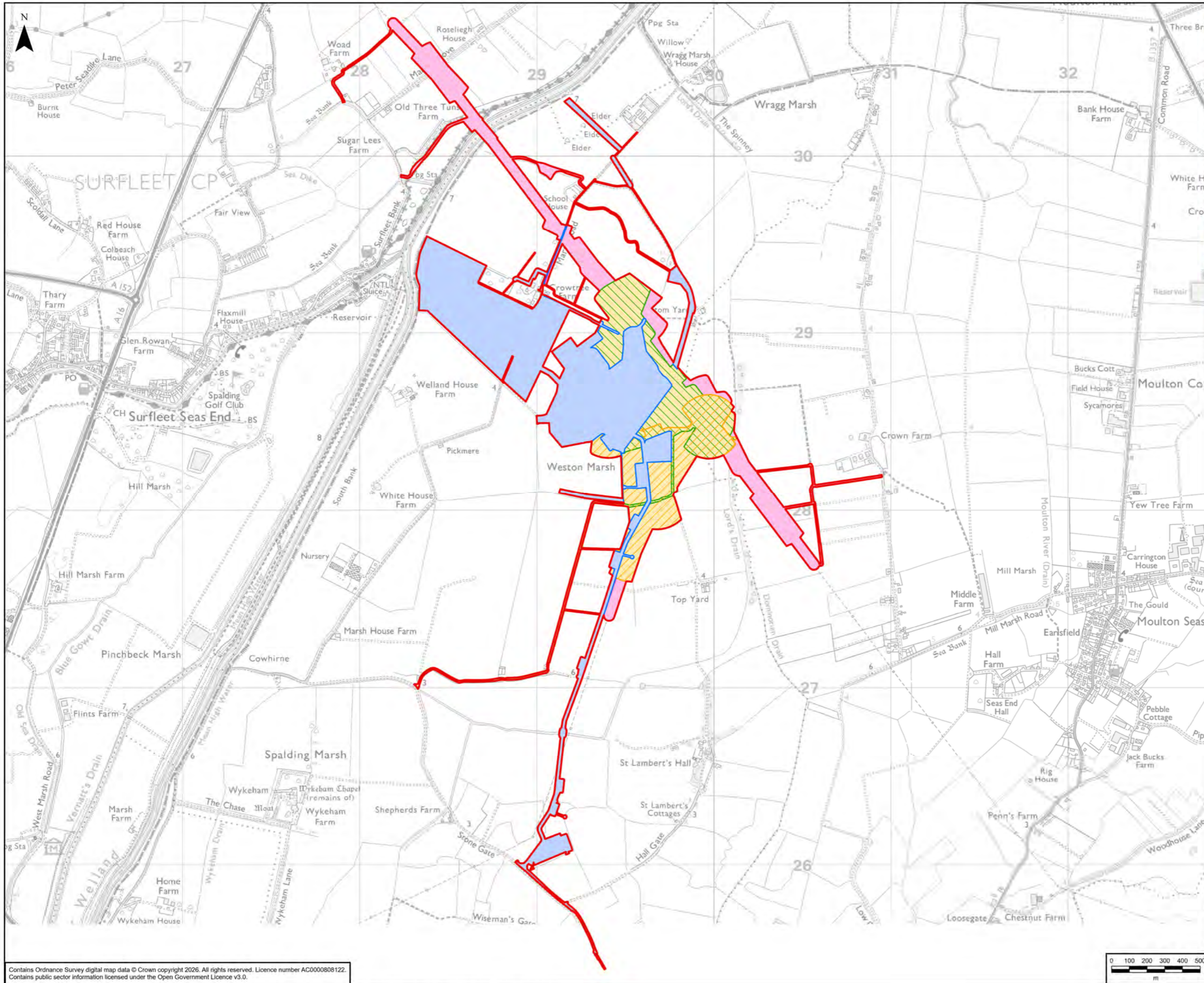
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# Figures

# Figure 1 Site Boundaries



- Legend**
- Scheme Site Boundary
  - Substation Works Site Boundary
  - S37 OHL Works Site Boundary
  - Exempt Overhead Line Works Site Boundary
  - S37 - 4ZM - OHL Works Site Boundary
  - S37 - 2WS - OHL Works Site Boundary

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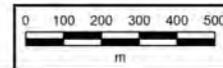
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Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

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## Figure 2 Study Area



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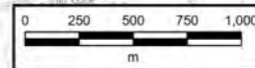
Scheme Site Boundary  
 2km Study Area

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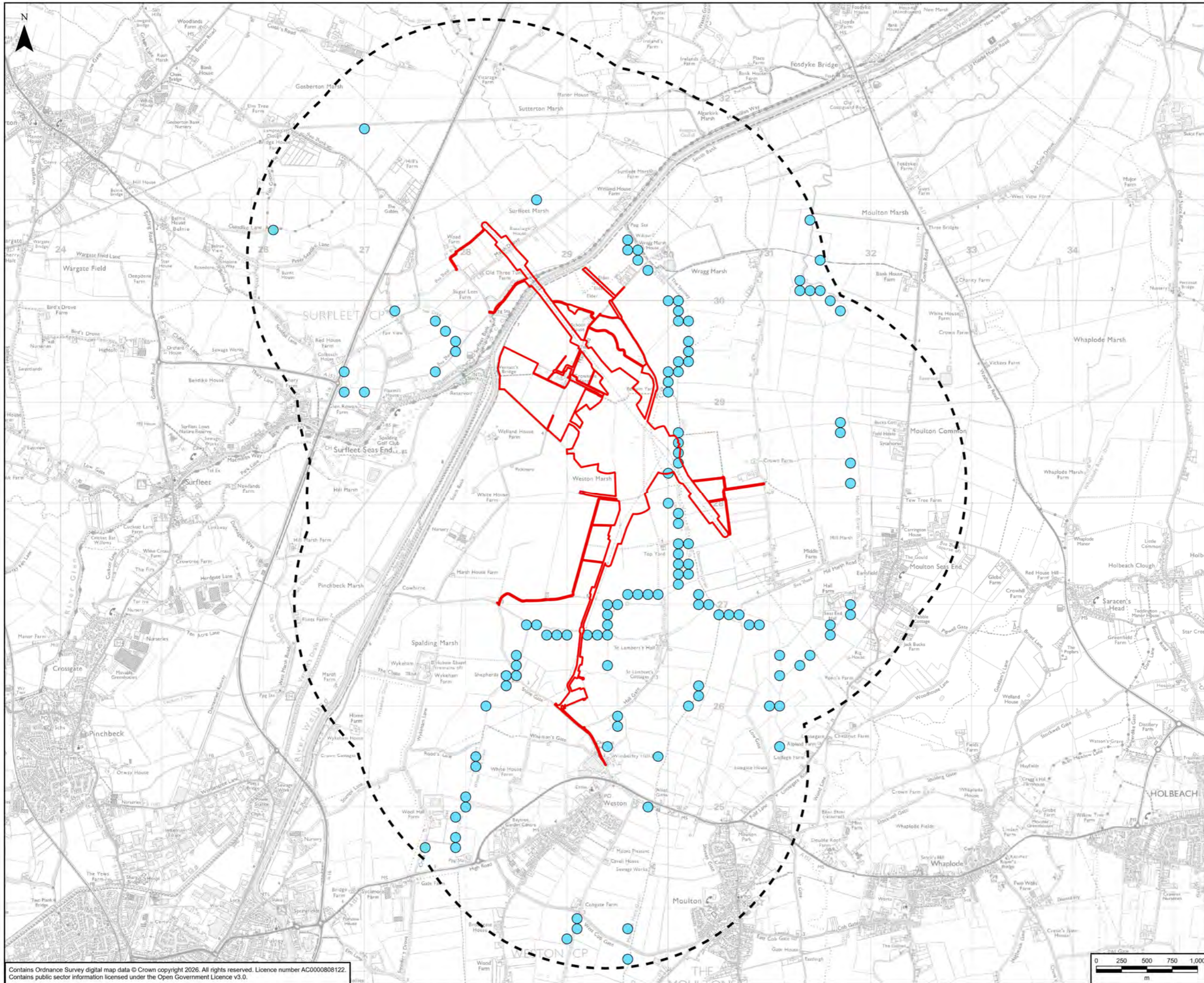
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## Figure 3 Desk Study Results



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- Scheme Site Boundary
- 2km Study Area
- Water Vole

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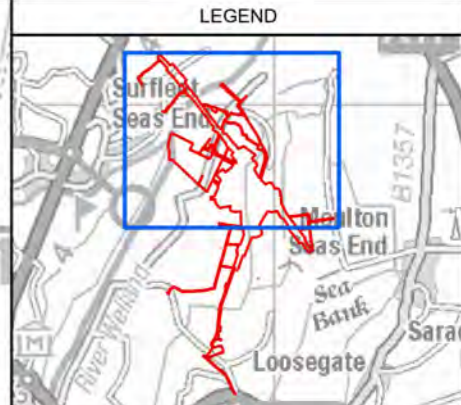
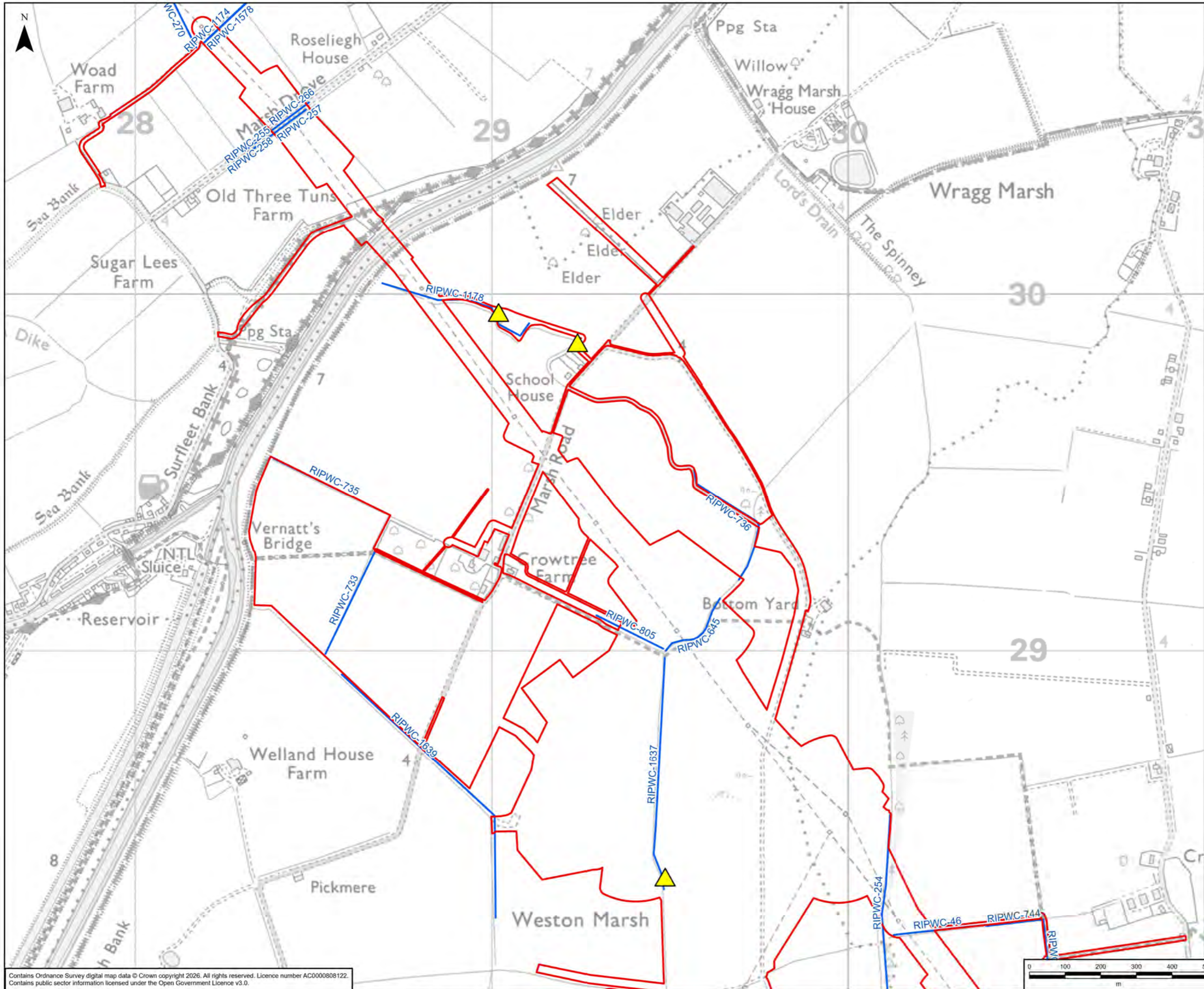
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DESK STUDY RESULTS

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## Figure 4 Otter Survey Scope



- Legend
- ▭ Scheme Site Boundary
  - ▲ Holt
  - Surveyed Watercourses

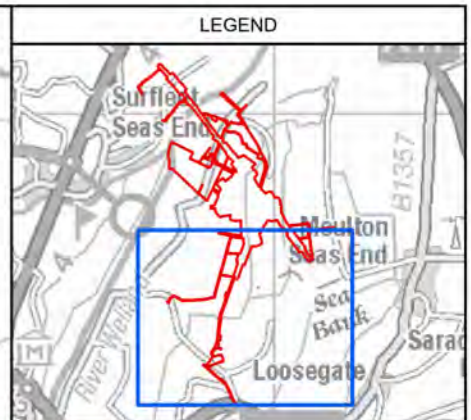
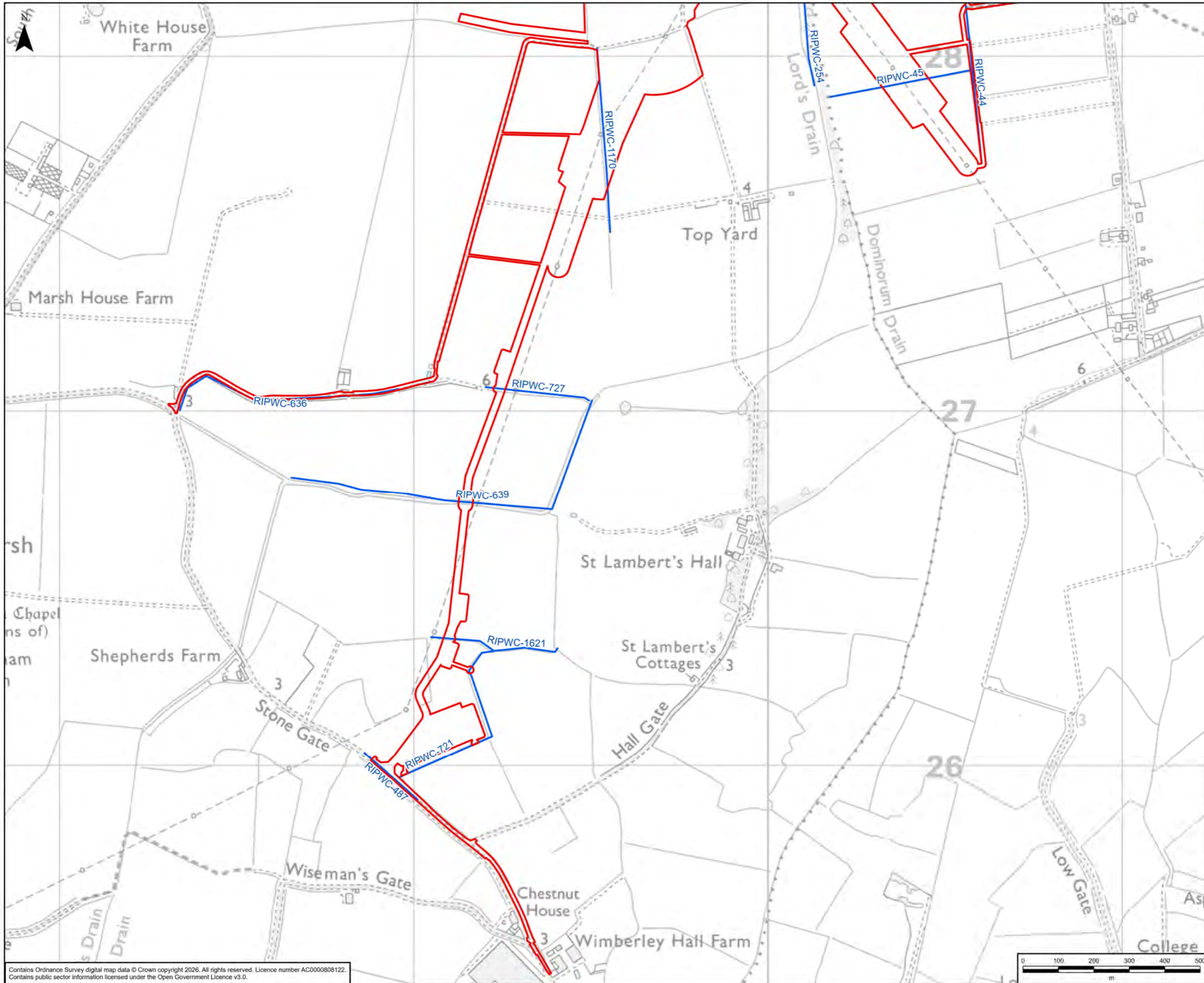
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 Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH  
 Document Title: FIGURE 4 OTTER SURVEY SCOPE

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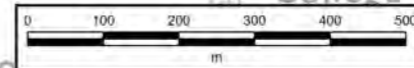
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▭ Scheme Site Boundary  
— Surveyed Watercourses

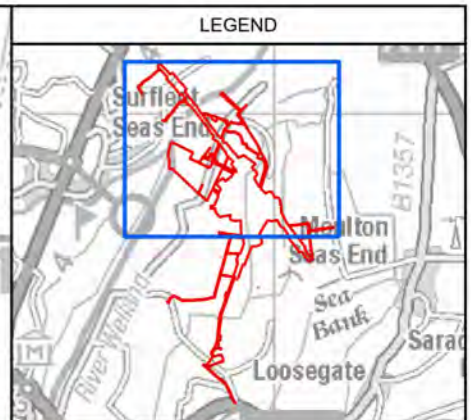
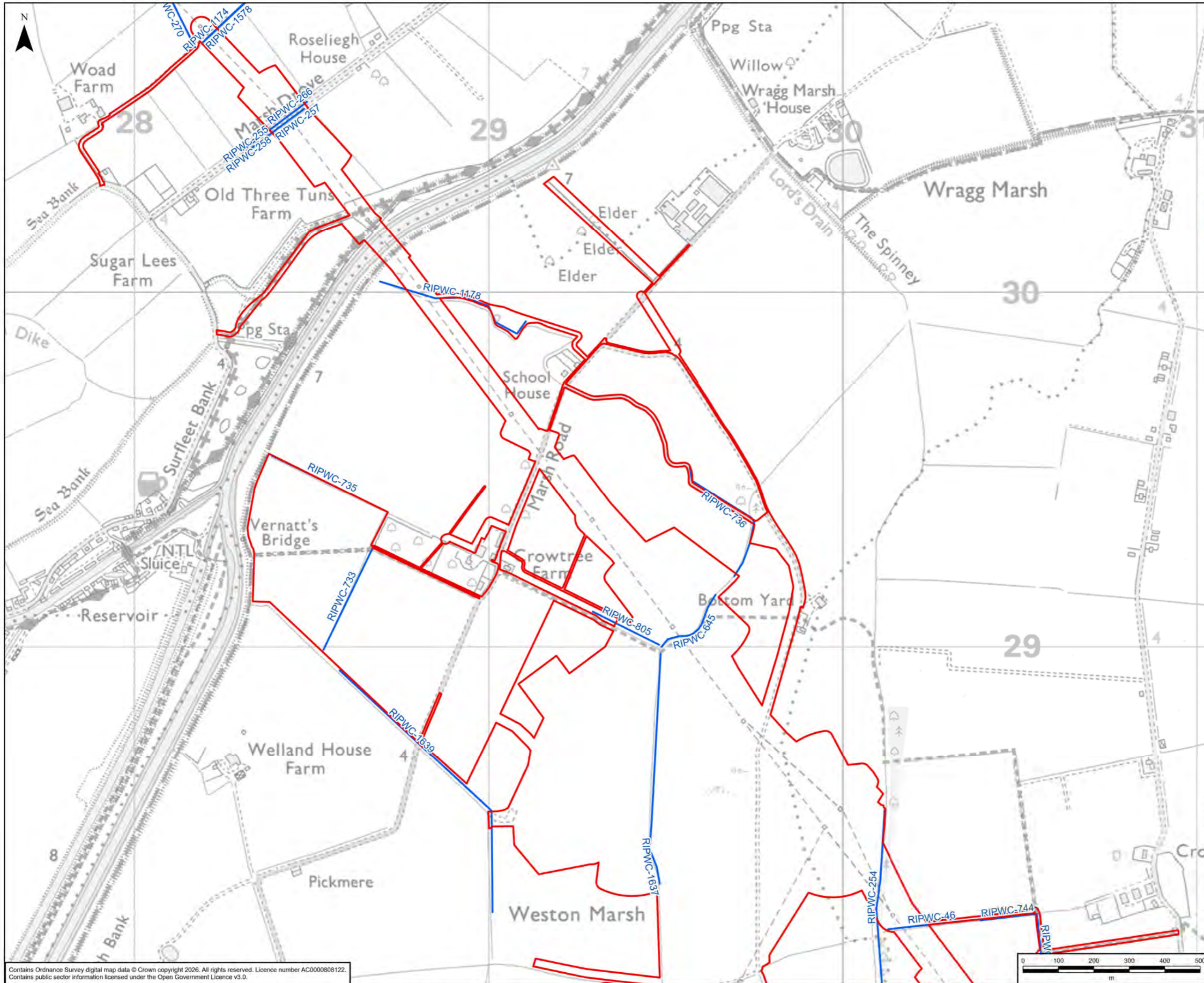
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## **Figure 5 Water Vole Survey Scope**



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▬ Scheme Site Boundary  
▬ Surveyed Watercourses

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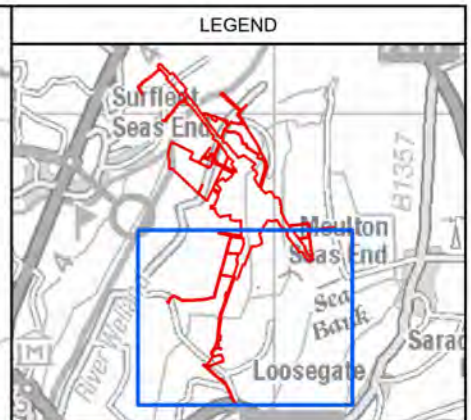
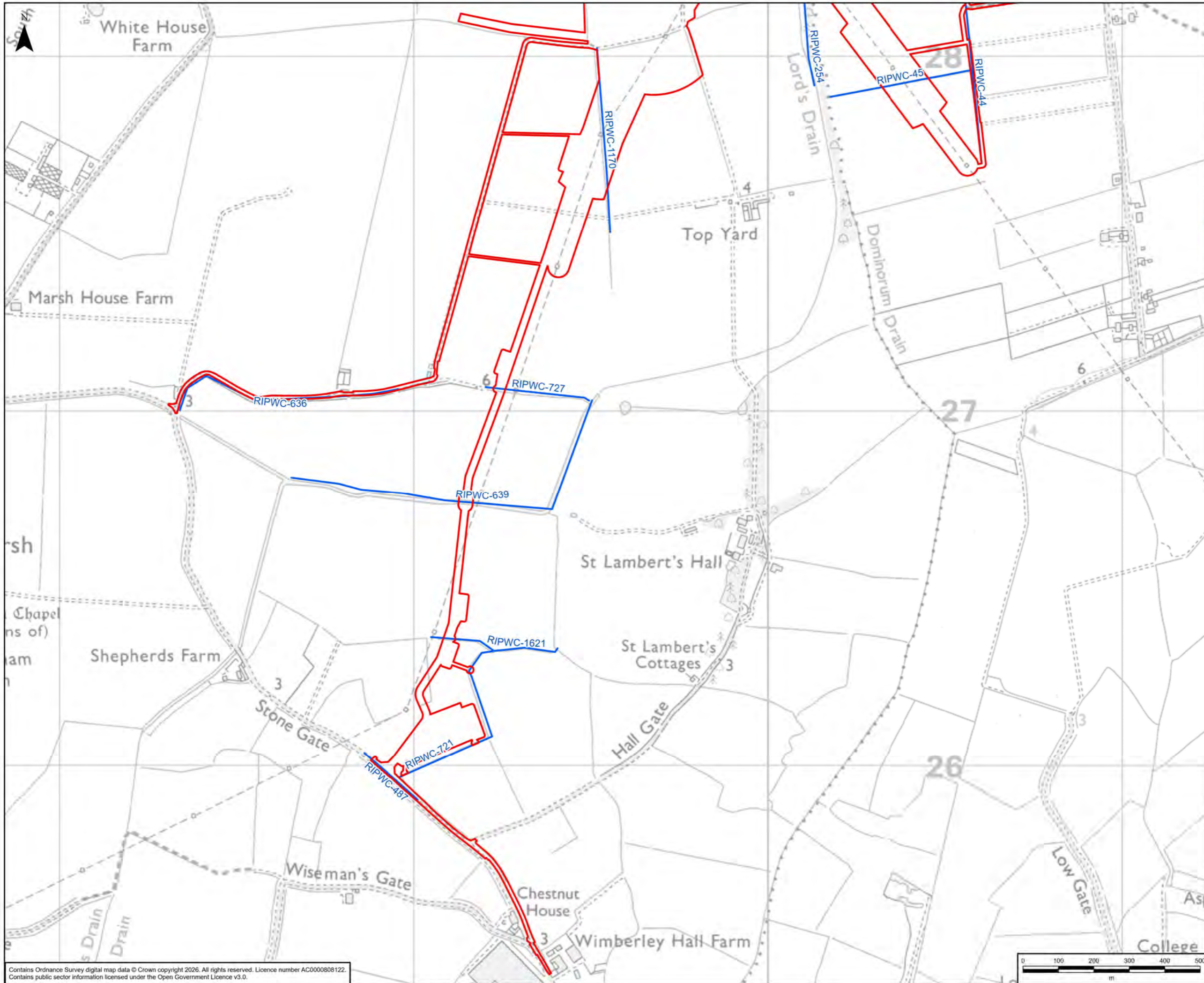
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Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 5 WATER VOLE SURVEY SCOPE

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**LEGEND**

▭ Scheme Site Boundary  
— Surveyed Watercourses

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Rev	Date	Description	GIS	Chk	App

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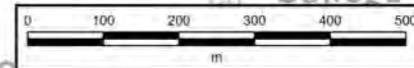
Purpose: OTTER AND WATER VOLE SURVEY REPORT

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

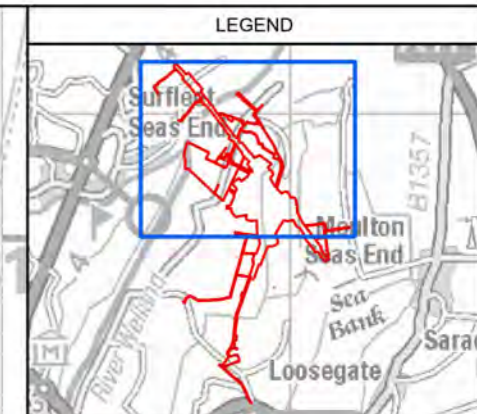
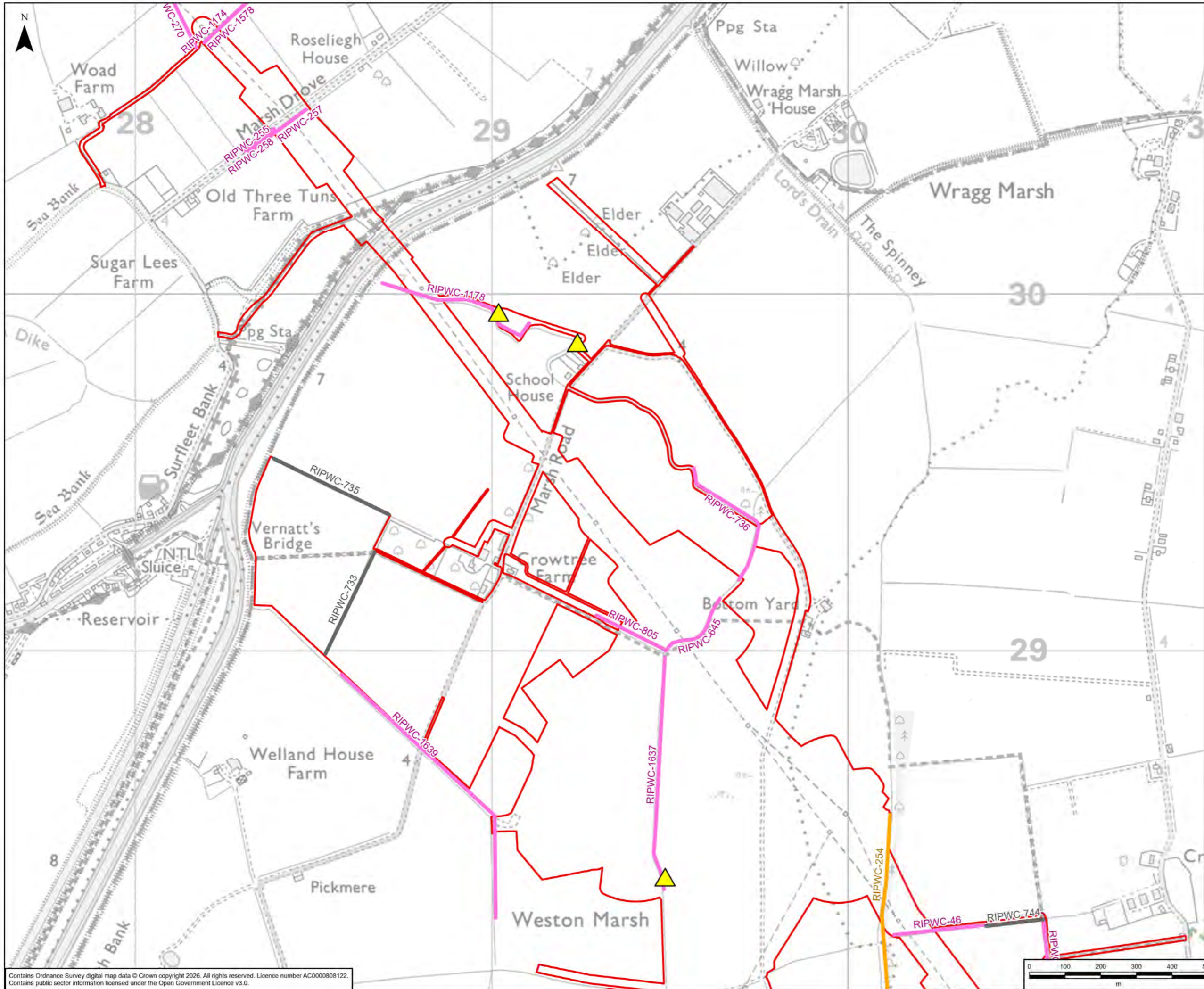
Document Title: FIGURE 5 WATER VOLE SURVEY SCOPE

Creator:	Date:	Checker:	Date:	Approver:	Date:
DF	08/05/2026	KA	08/05/2026	DR	08/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:10,000	A3	2 OF 2	A	

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## Figure 6 Otter Survey Results



**LEGEND**

- Scheme Site Boundary
- ▲ Potential Otter Resting Place

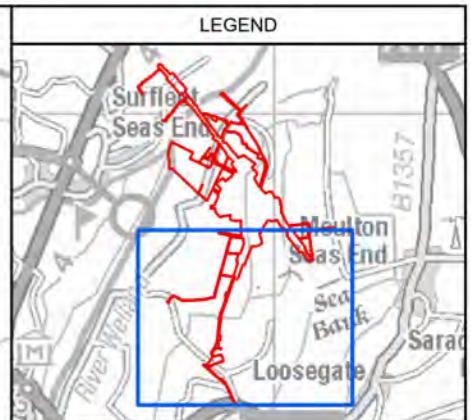
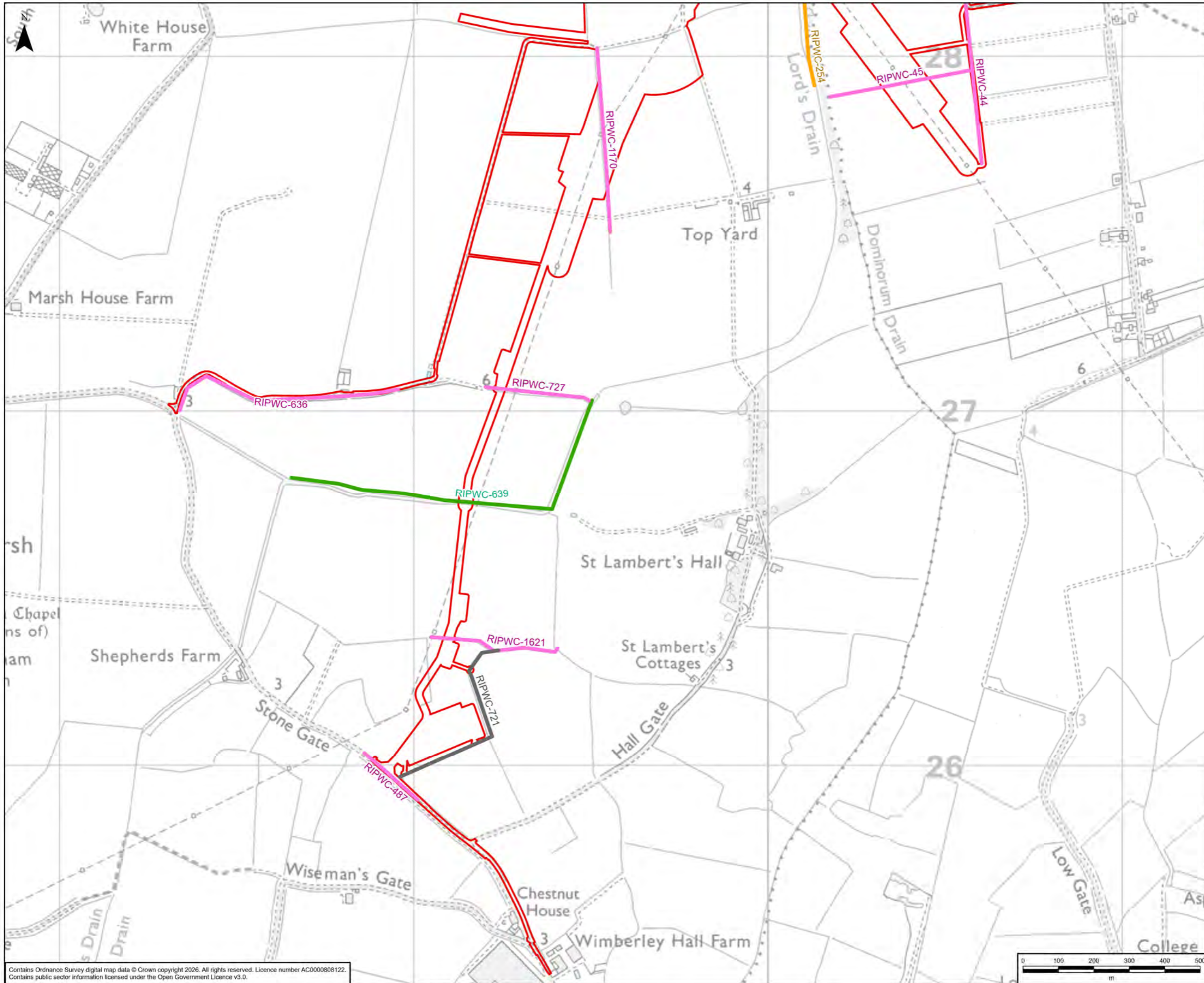
**Habitat Suitability Result**

- Moderate
- Negligible
- Unsurveyed

A	20/03/2026	First Issue	DF	KA	NM
Rev	Date	Description	GIS	Chk	App

<b>nationalgrid</b>					
Purpose: OTTER AND WATER VOLE SURVEY REPORT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 6 OTTER SURVEY RESULTS					
Creator:	Date:	Checker:	Date:	Approver:	Date:
DF	08/05/2026	KA	08/05/2026	DR	08/05/2026
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FIGURE	1:10,000	A3	1 OF 2	A	

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**LEGEND**

Scheme Site Boundary

Habitat Suitability Result

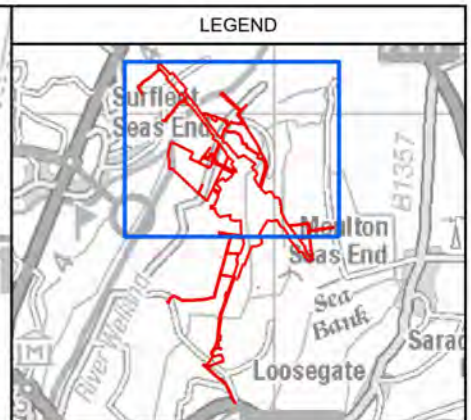
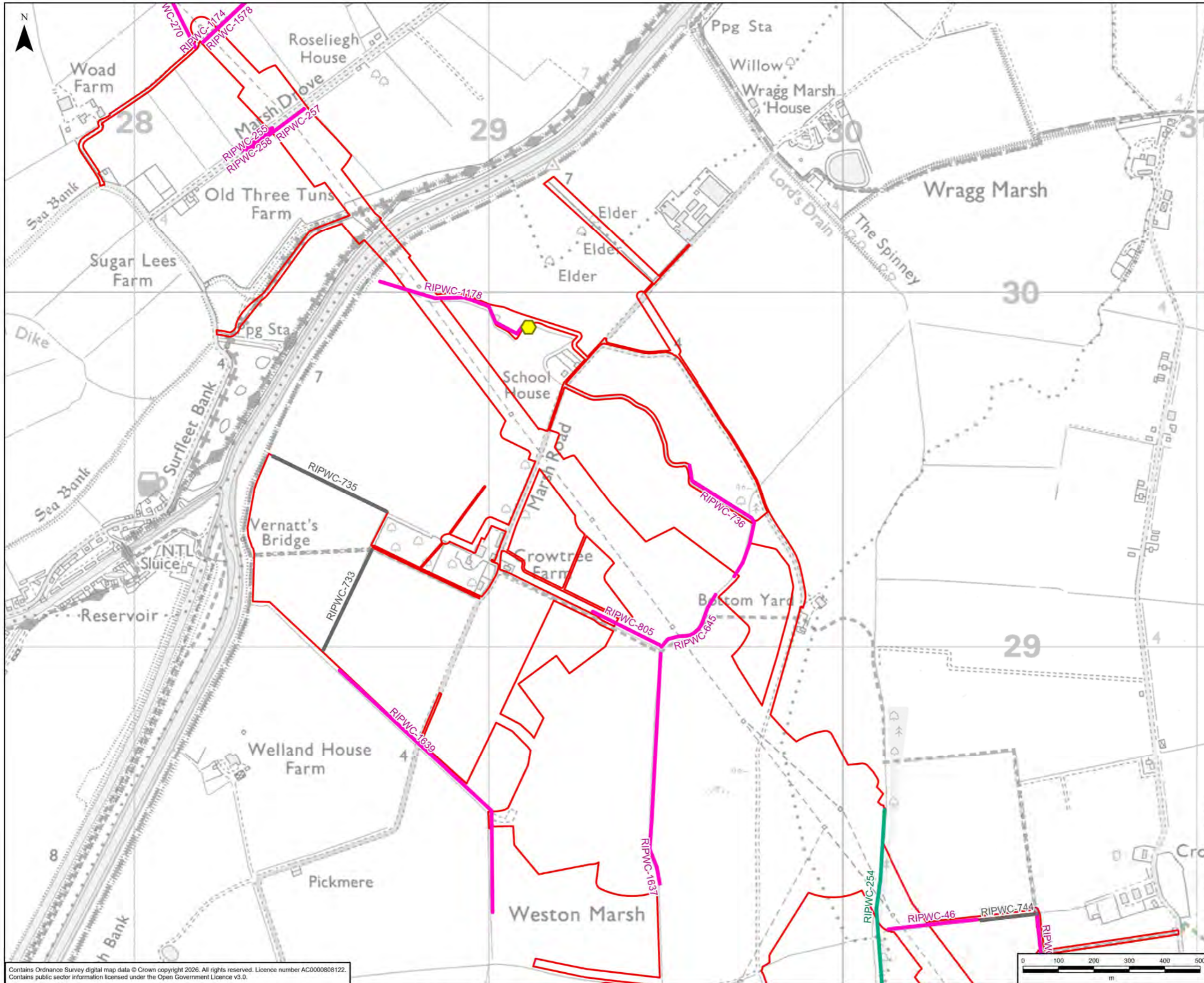
- High
- Moderate
- Negligible
- Unsurveyed

A	20/03/2026	First Issue	DF	KA	NM
Rev	Date	Description	GIS	Chk	App

<b>nationalgrid</b>					
Purpose: OTTER AND WATER VOLE SURVEY REPORT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 6 OTTER SURVEY RESULTS					
Creator:	Date:	Checker:	Date:	Approver:	Date:
DF	08/05/2026	KA	08/05/2026	DR	08/05/2026
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FIGURE	1:10,000	A3	2 OF 2	A	

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## **Figure 7 Water Vole Survey Results**



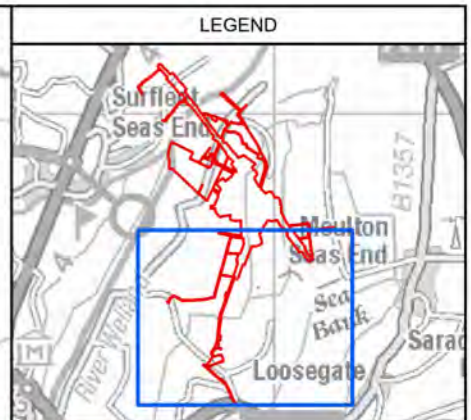
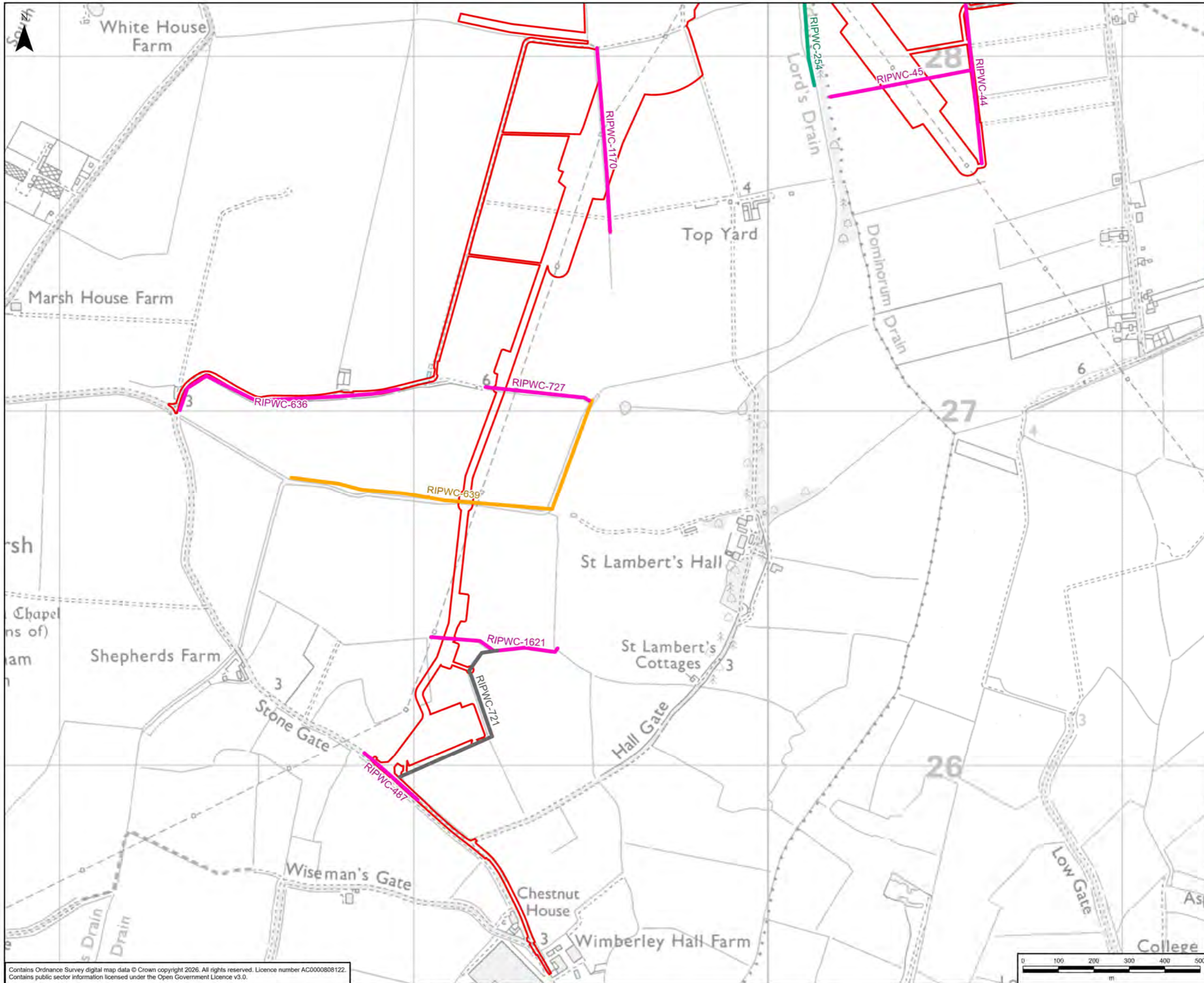
**LEGEND**

- Scheme Site Boundary
- Potential American Mink Scat
- Habitat Suitability Result**
- Optimal
- Unsuitable
- Unsurveyed

A	20/03/2026	First Issue	DF	KA	NM
Rev	Date	Description	GIS	Chk	App

<b>nationalgrid</b>					
Purpose: OTTER AND WATER VOLE SURVEY REPORT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 7 WATER VOLE SURVEY RESULTS					
Creator:	Date:	Checker:	Date:	Approver:	Date:
DF	08/05/2026	KA	08/05/2026	DR	08/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:10,000	A3	1 OF 2	A	

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**LEGEND**

Legend

- Scheme Site Boundary
- Habitat Suitability Result
  - Optimal
  - Sub-optimal
  - Unsuitable
  - Unsurveyed

A	20/03/2026	First Issue	DF	KA	NM
Rev	Date	Description	GIS	Chk	App

<b>nationalgrid</b>					
Purpose: OTTER AND WATER VOLE SURVEY REPORT					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 7 WATER VOLE SURVEY RESULTS					
Creator:	Date:	Checker:	Date:	Approver:	Date:
DF	08/05/2026	KA	08/05/2026	DR	08/05/2026
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FIGURE	1:10,000	A3	2 OF 2	A	

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# Appendix A Habitat Suitability Survey Results

## A.1. Otter Habitat Suitability Results

Table A.1 Otter Habitat Suitability Results

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Disturbance Level	Connectivity	Food Supply	Otter Suitability
GtW-ARP-RIPWC-44	02/05/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-45	02/05/2025	Dry ditch	<1	<0.5	n/a	2	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-46	29/05/2025	Dry ditch	1-2	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible

GtW- ARP- RIPWC -254	06/06/2025	Drain	5- 10	1-2	Still	10	Earth	Reeds, tall grasses, herbs and ruderal vegetation	None	Unfenced	Low	Ditch matrices	Watercourse with potential to support fish and macro- invertebrate prey	Moderate
GtW- ARP- RIPWC -255	05/06/2025	Dry ditch	1-2	<0.5	n/a	35	Earth	Tall grasses, herbs and patches of scrub (including dog rose and hawthorn)	Weeds or herbs	Unfenced	Moderate	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -257	05/06/2025	Dry ditch	1-2	0.5-1	n/a	35	Earth	Tall grasses, herbs and bramble	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -258	04/06/2025	Dry ditch	1-2	<0.5	n/a	0	Earth	Tall tussocky grasses and tall herbs	Weeds or herbs	Unfenced	Moderate	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -266	04/06/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Tall grasses, nettle, creeping thistle and herbs	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible

GtW- ARP- RIPWC -270	24/09/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Managed grasses with scattered herbs	Grasses and herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -487	26/05/2025	Dry ditch	1-2	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	None	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -636	02/05/2025	Dry ditch	1-2	<0.5	n/a	10	Earth	Tall grasses, herbs and ruderal vegetation	Common reed	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -639	23/04/2025	Drain	5- 10	>2	Sluggish	0	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	Low	Ditch matrices	Watercourse with potential to support fish and macro- invertebrate prey	High
GtW- ARP- RIPWC -645	01/05/2025	Dry ditch	<1	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -727	02/05/2025	Dry ditch	1-2	<0.5	n/a	60	Earth	Trees and scrub	Trees or scrub	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible

GtW-ARP-RIPWC-736	01/05/2025	Dry ditch	1-2	<0.5	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced			Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-805	01/05/2025	Dry ditch	1-2	0.5-1	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced			Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-1170	17/06/2025	Dry ditch			n/a	90	Earth	Tall grasses	Weeds or herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-1174	19/06/2025	Dry ditch			n/a	80	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced	Low	Ditch matrices	Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-1178	19/06/2025	Dry ditch			n/a	80	Earth	Tall grasses, herbs and ruderal vegetation	Common reed	Unfenced			Dry watercourse; no aquatic prey present.	Negligible
GtW-ARP-RIPWC-1578	10/09/2025	Dry ditch			n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced			Dry watercourse; no aquatic prey present.	Negligible

GtW- ARP- RIPWC -1621	16/09/2025	Wet ditch		Still	10	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced		Watercourse with potential to support fish and macroinverteb rate prey	Negligible
GtW- ARP- RIPWC -1637	17/09/2025	Dry ditch		n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced		Dry watercourse; no aquatic prey present.	Negligible
GtW- ARP- RIPWC -1639	02/05/2025	Dry ditch		n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced		Dry watercourse; no aquatic prey present.	Negligible

## A.2. Water Vole Habitat Suitability Results

Table A.2 Water Vole Habitat Suitability Results

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_44	02/05/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	3	Unsuitable*

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_45	02/05/2025	Dry ditch	<1	<0.5	n/a	2	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	3	Unsuitable*
RIPWC_46	29/05/2025	Dry ditch	1-2	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	3	Unsuitable*
RIPWC_254	06/06/2025	Drain	5-10	1-2	Still	10	Earth	Reeds, tall grasses, herbs and ruderal vegetation	None	Unfenced	7	Optimal
RIPWC_255	05/06/2025	Dry ditch	1-2	<0.5	n/a	35	Earth	Tall grasses, herbs and patches of scrub (including dog rose and hawthorn)	Weeds or herbs	Unfenced	1	Unsuitable

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_257	05/06/2025	Dry ditch	1-2	0.5-1	n/a	35	Earth	Tall grasses, herbs and bramble	Weeds or herbs	Unfenced	1	Unsuitable
RIPWC_258	04/06/2025	Dry ditch	1-2	<0.5	n/a	0	Earth	Tall tussocky grasses and tall herbs	Weeds or herbs	Unfenced	2	Unsuitable
RIPWC_266	04/06/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Tall grasses, nettle, creeping thistle and herbs	Weeds or herbs		2	Unsuitable
RIPWC_270	24/09/2025	Dry ditch	<1	<0.5	n/a	0	Earth	Managed grasses with scattered herbs	Grasses and herbs	Unfenced	1	Unsuitable
RIPWC_487	26/05/2025	Dry ditch	1-2	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	3	Unsuitable*

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_636	02/05/2025	Dry ditch	1-2	<0.5	n/a	10	Earth	Tall grasses, herbs and ruderal vegetation	Common reed		2	Unsuitable
RIPWC_639	23/04/2025	Drain	5-10	>2	Sluggish	0	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds		5	Sub-optimal
RIPWC_645	01/05/2025	Dry ditch	<1	<0.5	n/a	100	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	3	Unsuitable*
RIPWC_727	02/05/2025	Dry ditch	1-2	<0.5	n/a	60	Earth	Trees and scrub	Trees or scrub	Unfenced	2	Unsuitable
RIPWC_736	01/05/2025	Dry ditch	1-2	<0.5	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Aquatic grasses, sedges and reeds	Unfenced	3	Unsuitable*

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_805	01/05/2025	Dry ditch	1-2	0.5-1	n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	1	Unsuitable
RIPWC_1170	17/06/2025	Dry ditch			n/a	90	Earth	tall grasses	Weeds or herbs	Unfenced	1	Unsuitable
RIPWC_1174	19/06/2025	Dry ditch			n/a	80	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced	3	Unsuitable*
RIPWC_1178	19/06/2025	Dry ditch			n/a	80	Earth	Tall grasses, herbs and ruderal vegetation	Common reed	Unfenced	3	Unsuitable*
RIPWC_1578	10/09/2025	Dry ditch			n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced	3	Unsuitable*

Watercourse ID	Survey Date	Type	Width (m)	Depth (m)	Flow	Shading (%)	Bank Substrate	Bank Vegetation	In-channel Vegetation	Management	Water Vole Suitability Score	Water Vole Suitability
RIPWC_162 1	16/09/2025	Wet ditch			Still	10	Earth	Tall grasses, herbs and ruderal vegetation	Weeds or herbs	Unfenced	1	Unsuitable
RIPWC_163 7	17/09/2025	Dry ditch			n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced	2	Unsuitable
RIPWC_163 9	02/05/2025	Dry ditch			n/a	0	Earth	Tall grasses, herbs and ruderal vegetation	Grasses and herbs	Unfenced	1	Unsuitable

\* Downgraded from sub-optimal to unsuitable due to the watercourse being dry.

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