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AWEL Y MÔR OFFSHORE WIND FARM

Preliminary Ecological Appraisal (Onshore)

Prepared for: **GoBe Consultants (on behalf of Awel y Môr Offshore Wind Ltd)**

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1.0 Introduction

Awel y Môr Offshore Wind Farm (AyM) is a Nationally Significant Infrastructure Project (NSIP). An Environmental Impact Assessment (EIA) will be provided as part of a Development Consent Order (DCO) application under the Planning Act 2008 and also as part of a Marine Licence (ML) application under the Marine and Coastal Access Act 2009.

SLR Consulting was commissioned by GoBe Consultants, on behalf of Awel y Môr Offshore Wind Farm Ltd,(the Applicant) in May 2020 to undertake the onshore ecological work necessary to inform the EIA. This report comprises a Preliminary Ecological Appraisal (PEA)[1] of the areas that may be affected by construction and operation of the onshore aspects of AyM comprising the landfall location, 100m wide cable corridor and substation (hereafter referred to as "onshore infrastructure"). The report is submitted to the AyM EIA Evidence Plan Expert Topic Group for information and comment, in advance of further proposals for habitat and species specific surveys. A preferred route had not been identified at the time the PEA commenced; this report therefore presents information for three potential onshore infrastructure options (refer to Drawing 1). However, in January 2021 the preferred option was decided and as such Section 4 onwards in this report relates only to it (Landfall 5, Cable Route Option 5, Substation Zone 5, refer to Drawings 7 and 8).

As AyM progresses, the emerging scheme design will continue to be refined and so the precise locations and final extent of the proposed scheme are subject to change. Therefore, the scheme details presented in this report may vary from those that are ultimately presented in the Environmental Statement (ES).

1.1 Background

An EIA Scoping Report was prepared in accordance with Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and Regulation 6 of the Marine Works (Environmental Impact Assessment) Regulations 2007. The Scoping Report was submitted to the Planning Inspectorate (PINS) in June 2020. Within the Scoping Report, full details are provided as to the proposed approach for ecological survey and assessment; which as a first step includes PEA. The intention is to use the outcome of the PEA to capture the presence of, or potential for, important ecological features that may be affected by the proposed development and to scope the requirements for additional species or habitat specific survey. The Scoping Opinion, in response to the Scoping Report, was provided by PINS in July 2020. Comments made in the Scoping Opinion have been taken into account within this report, where relevant. Both documents are available at the Planning Inspectorate website[2]; their content is not repeated here and readers should refer to the original documents for details.

1.2 Study Area

In accordance with Table 76 in the Scoping Report, this PEA has been undertaken across the following areas:

- Habitats within three AyM onshore infrastructure options that were under consideration at the time of survey, plus the surrounding 100m (ie 100m either side of the corridor and to all sides of any other infrastructure). The PEA includes all areas landward of Mean High Water Springs (MHWS), but also

[1] CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, Second Edition, December 2017.
[2] https://infrastructure.planninginspectorate.gov.uk/projects/wales/awel-y-mor-offshore-wind-farm/?ipcsection=docs

considers intertidal areas in respect of birds.

The 100m buffer (around the proposed 100m cable corridor options) is based upon the premise that indirect impacts (such as noise or dust deposition) to un-designated habitats and/or species (except those noted at the bullet points below) beyond 100m are unlikely to be significant.

- Water courses and water bodies up to 250m from the onshore infrastructure options under consideration at the time of survey (where these may be suitable for use by otter *Lutra lutra*, water vole *Arvicola amphibious* or great crested newt (GCN) *Triturus cristatus*).

  A 250m up/downstream search area has been used for otter and water vole, since these are highly mobile, territorial species. It is therefore possible that effects from the proposed development, such as habitat loss, may impact populations of these species that occur outside of the scheme boundary. It is worth noting that potential hydrological impacts do not have such a bearing on this search area as a) they would be mitigated at source as part of good construction practice and b) both these species have a degree of tolerance to short term changes in water quality or flow, assuming adequate habitat remains present.

  The 250m search area for GCN breeding ponds is based upon published guidance that states that the majority of adult GCN stay within 250m of breeding ponds[3] and that beyond 250m impacts to GCN are normally low[4].

- Intertidal (where relating to birds) and onshore elements of nationally designated sites (Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNR)) and Local Wildlife Sites (LWS) within 2km from the onshore infrastructure options under consideration at the time of survey and internationally designated sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites) within 10km.

  The extended search area for designated sites is because even small adverse impacts to these may be significant. Many designated sites exist to protect mobile species, such as bats and birds, which could be affected whilst passing through the project site, or suffer fragmentation/barrier effects due to the size, location and nature of the project. Designated sites which support important aquatic habitats or species may also be affected through hydrological impacts at distance from source.

Within this report the following terms are used:

- Study Area: This is the 2km zone around the three onshore infrastructure options.
- Survey Area: This is the 100m zone around the three onshore infrastructure options.

Areas other than these, which have been included in the PEA (such as ponds within 250m, or internationally designated sites within 10km), are specifically described.

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[3] Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.

[4] Natural England Standing Advice (note that Welsh equivalent does not exist) available at https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects

1.3 Purpose of this Report

This report presents the findings of the PEA. The report seeks to:

- establish baseline conditions and identify important ecological features present (or those that could be present), as far as is possible at this time;
- identify important ecological features that could be impacted by the project, where possible;
- provide initial suggestions for mitigation or compensation, where possible, (noting that at this stage all recommendations are preliminary, depending on results of further surveys or final project design);
- to establish requirements for more detailed surveys; and
- to identify potential opportunities for biodiversity enhancements as part of the project (these suggestions also remain preliminary, depending on results of further surveys or final project design).

1.4 Evidence of Technical Competence and Experience

This PEA has been authored by Jess Colebrook, a Principal Ecologist at SLR Consulting with over 20 years' experience as a professional ecologist. She is a Chartered Environmentalist (CEnv) and a full member of CIEEM (MCIEEM). Jess is leading the onshore ecological work necessary to inform the EIA for the project, has been involved in the scoping and consultation process, undertook the habitat surveys and authored this report. Additional technical support and Quality Assurance review has been provided by Duncan Watson. Duncan is a Technical Director at SLR Consulting with over 23 years' professional ecological experience. He is also a Chartered Environmentalist (CEnv) and a full member of CIEEM (MCIEEM).

2.0 Methodology

2.1 Baseline Data Collection

2.1.1 Desk Study

A desk-based study has been undertaken to identify sources of pre-existing ecological data of relevance, that could inform the EIA. Table 2-1 lists the data sources that have been identified and indicates whether data were obtained for scoping (noting that the scoping report covered a significantly larger area than this PEA) and/or this PEA.

Table 2-1
Baseline Data Sources

Source	Summary	Date Obtained for scoping	Date updated/ obtained for PEA
Joint Nature Conservation Committee (JNCC) jncc.gov.uk website	Special Area of Conservation (SAC) and Special Protection Area (SPA) details.	11 December 2019	22 January 2021
Natural Resources Wales (NRW) lle.gov.uk website	Datasets for: • Ancient Woodland Inventory 2011; • Candidate Special Areas of Conservation; • Felling Licence Applications; • Habitat Networks; • Local Nature Reserves (LNR); • National Forest Inventory 2016; • National Nature Reserves (NNR); • NRW Species Data on the NBN Gateway; • Ramsar Sites; • Saltmarsh Extents; • Sites of Special Scientific Interest (SSSI); • SACs; • SAC and SPA Monitoring Programme Results; • SPAs; • Terrestrial Phase 1 Habitat Survey; and • Traditional Orchards.	11 December 2019	22 January 2021
NRW Designated Site Search https://naturalresources.wales/guidance-and-	Statutory designated site details: • SAC; • SPA; • SSSI; National Nature Reserves; and	12 December 2019	22 January 2021

Source	Summary	Date Obtained for scoping	Date updated/ obtained for PEA
advice/environmental-topics/wildlife-and-biodiversity/find-protected-areas-of-land-and-seas/designated-sites/?lang=en	Local Nature Reserves.		
Cofnod (North Wales Biological Records Centre)	LWS; Protected Species Records; Bird Records; Phase 1 Habitat Information; and Ancient Woodland.	13 December 2019	Update for PEA not required. Renewal(s) for preferred onshore infrastructure option will be sought.
British Trust for Ornithology (BTO)	Wetland Bird Survey (WeBS) Data; National ringed plover *Charadrius hiaticula* breeding survey data; and Non-estuarine shorebird survey data.	Not obtained for scoping report	Detailed data not yet obtained. Relevant data for the preferred landfall and cable route will be obtained and included in the relevant bird survey reports.
Royal Society for the Protection of Birds (RSPB)	Ornithological data not otherwise held by Cofnod.	Not obtained for scoping report	RSPB hold no additional data of relevance – referred to BTO and Cofnod for records

Source	Summary	Date Obtained for scoping	Date updated/ obtained for PEA
Coed Cadw	Data in respect of Coed y Gopa & Coed Bryngwenallt Reserve	Not obtained for scoping report	No longer deemed necessary; species records held by Cofnod
North Wales Wildlife Trust (NWWT)	Data in respect of NWWT Reserves; and locally occurring wildlife	Not obtained for scoping report	No reserves within 2km, species data held by Cofnod
National Biodiversity Network (NBN) Gateway	Protected and notable species records.	13 December 2019	22 January 2021
Clwyd Bat Group	Monitoring data for important bat roosts in the region, including Coed y Gopa.	Not obtained for scoping report	Data held by Cofnod
Denbighshire County Council (DCC)	Details for Roadside Nature Reserves; Annual reports for little tern *Sterna albifrons* colony at Gronant; Records for selected other bird species (e.g. Cetti's warbler *Cettia cetti*, peregrine falcon *Falco peregrinus*, common kingfisher *Alcedo atthis*, curlew *Numenius arquata* and lapwing *Vanellus vanellus*); Records for selected other species (dormouse *Muscardinus avellanarius*, GCN); and Details for grant-aided woodland planting and habitat improvement projects. NB: LWS information confirmed to be held by Cofnod, and LWS selection criteria old/outdated.	Not obtained for scoping report	Not yet obtained.
Conwy County Borough Council (CCBC)	Local wildlife information. NB: LWS and species information confirmed to be held by Cofnod, and LWS selection criteria old/outdated.	Not obtained for scoping report	N/A
Gwynt y Mor OWF Environmental Statement (ES) Onshore Ecology Chapter & Appendices	Surveys undertaken in 2005 including: • Extended Phase 1 habitat survey; • Wintering bird survey; and • Breeding bird survey.	02 December 2019	N/A

Source	Summary	Date Obtained for scoping	Date updated/ obtained for PEA
Burbo Bank Extension OWF ES Ecology Chapter & Appendices	Surveys undertaken in 2011 and 2012 for habitats, plants, hedgerows, barn owl *Tyto alba*, breeding birds, wintering birds, bats, badger *Meles meles*, dormice, otter, water vole, reptiles, GCN and natterjack toad *Bufo calamita*.	02 December 2019	N/A
North Wales Windfarms Connection Project ES Ecology Chapter & Appendices.	Surveys undertaken in 2014 for GCN, dormouse, bats, birds, otters, water vole, dormouse, reptiles, badgers, habitats and hedgerows.	02 December 2019	N/A
Elwy Solar Farm Scoping Report and Ecological Appraisal	Surveys undertaken in 2019 for habitats and extended to include the additional recording of the presence, or likely presence, of protected species, invasive species and other species of conservation significance. Habitat Suitability Assessment undertaken at ponds, interim results for Wintering Bird Survey.	N/A	22 January 2020
Botanical Society of Britain and Ireland (BSBI): Denbighshire Rare Plant Register (May 2014)	Includes native plants and some archaeophytes which have international or national rarity status, irrespective of their rarity in Denbighshire, as well as plants that are locally rare or scarce.	N/A	22 January 2020
Clwyd Bird Recording Group Atlas https://cbrg-atlas.cofnod.org.uk/	Provides distribution maps showing records of bird species within the Clwyd recording area (i.e. Denbighshire and Flintshire). Species maps are derived from data held by Cofnod.	Not obtained for scoping report	January 2021
North-East Wales Bird Reports 2015-2018	Reports produced by the Clywd Bird Recording Group covering all of the bird species recorded in the region of Denbighshire and Flintshire during the relevant year. The report for 2018 is the most recent report available.	Not obtained for scoping report	January 2021
Other Online Source of Ornithological Records	Sources reviewed included the WeBirdNorthWales blog http://webirdnorthwales.blogspot.com/, the Birdguides website https://www.birdguides.com/, and various local Twitter accounts.	Not obtained for scoping report	January 2021

2.1.2 Field Surveys

The field survey comprised two main elements:

- mapping of habitats - in this instance habitats have been mapped using UKHab v1.1[5], as agreed at the scoping stage, to capture the presence of Section 7 and Annex 1 habitat types; and
- noting evidence of, or potential for, protected or notable species, or other important ecological features (such as veteran trees or invasive non-native species), such that specific follow up surveys can be scoped and undertaken thereafter.

Habitat Survey

Approximately 25% of the Survey Area could be accessed for field survey, the remaining area was mapped via aerial photograph interpretation, with ground truthing from public rights of way where feasible. It is estimated that approximately 70% of the area was visually observed either via direct access or from roads/public rights of way. Refer to Drawing 2 which shows the extent of field survey and aerial interpretation locations for full details. The aerial images used in this process were the most recent commercially available at 12.5cm and 25cm resolutions and are dated 2016[6]. The minimum mapping unit used was 25m^2 or 5m length. However, due to the large extent of the survey area and early project stage, habitat boundaries were "snapped" to the nearest OS Mastermap topography vectors (boundaries for the preferred corridor, substation and landfall locations will be reviewed during 2021 as further field survey is undertaken and access to land parcels is obtained).

In addition to aerial photograph interpretation OS Vector Map Local datasets (dated 07/07/2020) were used to identify the presence of waterbodies and watercourses within 250m of the three onshore infrastructure options (shown on Drawing 5). This method was used as small watercourses and ponds are often difficult to discern on aerial images; and although it remains fairly crude is considered appropriate for PEA. Smaller field ditches and ponds within 250m of the preferred cable route, landfall and substation will be ground truthed/accurately mapped during 2021 as full access permission is obtained.

Habitats were mapped to Level 3 of the UKHab Primary Habitat Hierarchy including mandatory secondary habitat codes (numbers 10 – 41), for all locations within the Survey Area. If field survey access was possible habitats were mapped to Level 4 (where appropriate), plus mandatory secondary codes. Boundary fences were not mapped. Additional secondary codes or photographs were recorded where possible; these have been retained in a GIS and are not presented in this report, but will form part of the final reporting and assessment for the habitats present along the preferred cable route, landfall and substation location.

The PEA field survey was undertaken by Jess Colebrook CEnv MCIEEM over a period of 15 days in 2020; specific dates were as follows; 17, 18, 26, 27, 28 August and 8, 9, 10, 11, 15, 16, 17, 18, 22 September and 15 October.

Protected Species Survey/Habitat Based Assessments

During the field survey, additional notes were made in respect of signs of, or habitat suitability for other important ecological features such as protected species (for example undertaking GCN Habitat Suitability Index

[5] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org/
[6] Supplied by ©Bluesky International Limited

(HSI)[7] assessments at accessible ponds and identifying trees or structures with potential for use by bats).

Details of these additional notes have been retained on a GIS database and are not presented in this report. However, pertinent findings that inform the scope of additional survey requirements have been included for the preferred onshore infrastructure option in Section 4 and are shown on Drawings 7 and 8.

2.1.3 Limitations

Desk Study

Desk study data are unlikely to be exhaustive, especially in respect of species, and are intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the study area. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the areas, which were subject to field survey.

Field Survey

The majority of the Survey Area was not accessible for field survey such that aerial photograph interpretation and where possible, views from publicly accessible areas were used to determine habitat type and protected species habitat suitability. Most notably, this means that signs of protected species could not be sought for those areas and could also mean that Section 7 habitats or other ecologically important features are present but as yet undetected. Nevertheless it is still considered possible to meet the purpose of this PEA report (as set out in Section 1.4) and it should be noted that "top up" survey will be completed as part of follow on work in 2021 related to the preferred cable corridor, landfall and substation.

The field survey was undertaken during late summer and early autumn, and therefore could have missed spring and early summer flowering species that may have died back. Due to the majority of the survey area comprising arable farmland with low habitat diversity, plus other habitats that are readily identified at any time of year, this is not considered to be a significant constraint to the PEA.

The late summer/early autumn timing of the PEA field survey is also suboptimal with regard to locating signs of protected or notable faunal species, due to the density and height of vegetation. It is therefore possible that evidence for species such as otter, badger or water vole may have been missed as a result. In addition, this period is also suboptimal for the recording of HSI pond assessments in respect of GCN. Nevertheless, it is considered that sufficient field survey and desk study information is available to undertake the PEA in respect of faunal species. In this regard, it is noted that the PEA is not intended to include detailed surveys for protected or notable faunal species but rather to determine the potential for them to occur and therefore highlight further survey requirements.

2.2 Determining Important Ecological Features

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained below. Importance may relate, for example, to protected status, the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/or species are threatened

[7] Oldham, R.S., Keeble, J., Swan, M.J.S., and Jeffcote, M. (2000) Evaluating the Suitability of Habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10: 143-155.

throughout their range, or to their rate of decline.

Important habitats are considered here to be those which:

- match descriptions of habitats listed on Annex 1 of the Habitats Directive, so far as it applies to the UK and as transposed to The Conservation of Habitats and Species Regulations 2017 (as amended);
- match descriptions of habitats of principal importance for biodiversity under Section 7 of the Environment (Wales) Act 2016;
- comprise irreplaceable habitats; such as (but not limited to) limestone pavement, sand dunes, ancient woodland and veteran trees[8]; and/or
- comprise a significant habitat resource for an important species (see below).

It is worth noting here that Local Biodiversity Action Plans were sought for both Denbighshire and Conwy but appear to no longer be available online, or elsewhere, having been archived in 2017. In addition, it has been confirmed that there are no current LWS selection criteria for either county.

Important species are considered here to be those:

- of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive[9]) so far as it applies to the UK and as transposed to The Conservation of Habitats and Species Regulations 2017 (as amended);
- protected under the terms of the Wildlife and Countryside Act 1981 (as amended);
- of principal importance for biodiversity under Section 7 of the Environment (Wales) Act 2016;
- Red Listed using International Union for the Conservation of Nature (IUCN) criteria[10] (e.g. in one of the UK Species Status Project[11] reviews, in the Species of Conservation Concern Red List[12], Birds of

[8] Referenced in Planning Policy Wales (PPW) Edition 10 (2018) and PPW Technical Advice Note 5. Nature Conservation and Planning (2009)
[9] These pieces of legislation are based upon data that remains relevant to the UK, regardless of its non-EU status.
[10] IUCN (2012) IUCN Red List Categories and Criteria. Version 3.1. Second edition. IUCN, Gland.
IUCN (2012) Guidelines for Application of IUCN Red List Criteria at Regional and National Levels. Version 4.0. IUCN, Gland.
IUCN (2016) Guidelines for Appropriate Uses of IUCN Red List Data. Version 3.0. Adopted by the IUCN Red List Committee.
IUCN (2019) Guidelines for Using the IUCN Red List Categories and Criteria. Version 14. Prepared by the Standards and Petitions Subcommittee.
[11] The Species Status project is the successor to the JNCC's Species Status Assessment project, providing up-to-date assessments of the threat status of various taxa using the internationally accepted Red List guidelines (http://jncc.defra.gov.uk/page-1773)
[12] Eaton et al. (2015) Birds of conservation concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds 108: 708-746

Conservation Concern in Wales[13] or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);

- which are listed as Near Threatened or Amber Listed (e.g. in one of the UK Species Status Project reviews, in Birds of Conservation Concern in Wales[14], or in the Species of Conservation Concern Amber List[15]);
- which are listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place.

[13] Johnstone, I. and Bladwell, S. (2016) Birds of Conservation Concern in Wales 3: the population status of birds in Wales. Birds in Wales 13 (1).
[14] See 13
[15] See 12

3.0 Results

3.1 General Context

The Study Area is situated on the north Wales coast on low-lying predominantly agricultural land situated between the towns of Abergele, Rhyl, Rhuddlan and St Asaph. The A55 dual-carriageway crosses the area from Abergele to St Asaph, with the A547 running east-west from Abergele to Rhuddlan. The A548 is the main coastal road between Abergele and Rhyl.

The River Clwyd bisects the Study Area, flowing from St Asaph northward into Rhyl. The River Gele is also within the Study Area and flows east across the Study Area into the River Clwyd south of Towyn.

The Study Area comprises three broadly distinct areas (refer to Drawing 1 for locations):

- Coastal Strip: This area is densely populated, including extensive residential and holiday accommodation. Pedestrian footpaths are present directly adjacent to the beach, as is a golf course at the easternmost proposed landfall. Man-made sea-defences including imported rocks are present, along with shingle and sand beaches.

- North of the A55: the land is low lying with a network of drainage ditches; seasonally wet in places. A significant area comprises "Coastal and Floodplain Grazing Marsh" (see below). Often intensively agricultural, most of the land is used for grazing sheep and cattle. Hedgerows and woodland are relatively scarce.

- South of the A55: Here the land begins to rise up on to the limestone, the topography is more undulating, field sizes are smaller, and boundaries are typically well established hedgerows and sometimes drystone walls. Whilst still predominately agricultural, permanent pasture is more common, as are woodlands and hedges.

3.2 Designated Sites

There are two SPAs, one Ramsar site and three SACs within 10km of the onshore infrastructure options under consideration at the time of survey, and two SSSIs and three LNRs within 2km. Table 3-1 and Drawing 3 provide an overview of statutory designated sites within the Study Area, and within 10km in respect of SACs, SPAs and Ramsar sites.

Table 3-1: Statutory Designated Sites

Site name & Designation	Distance from the three corridor/landfall/ substation zone options under consideration at the time of survey (m)	Reason for Notification/Designation
Liverpool Bay SPA	266	The site qualifies under Article 4.1 of the Birds Directive (2009/147/EC) as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I of the Birds Directive in any season: • Red-throated diver *Gavia stellata* (non-breeding); • Little gull *Hydrocoloeus minutus* (non-breeding); • Little tern (breeding); and • Common tern *Sterna hirundo* (breeding). • The site qualifies under Article 4.2 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season: • Common scoter *Melanitta nigra* (non-breeding).
Dee Estuary SPA	3,417	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive: During the breeding season; • Common tern; and • Little tern. On passage; • Sandwich tern *Sterna sandvicensis* Over winter; • Bar-tailed godwit *Limosa lapponica*.

Site name & Designation	Distance from the three corridor/landfall/ substation zone options under consideration at the time of survey (m)	Reason for Notification/Designation
		This site also qualifies under Article 4.2 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed in Annex I) in any season: On passage; • Redshank *Tringa totanus* Over winter; • Black-tailed godwit *Limosa limosa islandica*; • Curlew; • Dunlin *Calidris alpina alpina*; • Grey plover *Pluvialis squatarola*; • Knot *Calidris canutus*; • Oystercatcher *Haematopus ostralegus*; • Pintail *Anas acuta*; • Redshank; • Shelduck *Tadorna tadorna*; • Teal *Anas crecca*; and Assemblage qualification: A wetland of international importance. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl • Over winter, the area regularly supports 130,408 individual waterfowl.
Dee Estuary Ramsar	3,417	The site qualifies under Ramsar Criteria 1, 2, 5 and 6 as follows: Criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary.

Site name & Designation	Distance from the three corridor/landfall/ substation zone options under consideration at the time of survey (m)	Reason for Notification/Designation
		Criterion 2, it supports breeding colonies of the vulnerable natterjack toad. Criterion 5 Assemblages of international importance: Species with peak counts in winter: Non-breeding season regularly supports 120,726 individual waterbirds. Criterion 6 – species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at the time of designation): Species with peak counts in spring/autumn: • Redshank Species with peak counts in winter: • Teal; • Shelduck; • Oystercatcher; • Curlew; • Pintail; • Grey plover; • Knot: • Dunlin; • Black-tailed godwit; • Bar-tailed godwit; and • Redshank.

Site name & Designation	Distance from the three corridor/landfall/ substation zone options under consideration at the time of survey (m)	Reason for Notification/Designation
Dee Estuary SAC	3,417	Annex I habitats that are a primary reason for selection of this site: • Mudflats and sandflats not covered by seawater at low tide • *Salicornia* and other annuals colonizing mud and sand • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Estuaries • Annual vegetation of drift lines • Vegetated sea cliffs of the Atlantic and Baltic Coasts • Embryonic shifting dunes • "Shifting dunes along the shoreline with *Ammophila arenaria* (""white dunes"")" • "Fixed coastal dunes with herbaceous vegetation (""grey dunes"")" * Priority feature • Humid dune slacks Annex II species present as a qualifying feature, but not a primary reason for site selection • Sea lamprey *Petromyzon marinus*; • River lamprey *Lampetra fluviatilis*; and • Petalwort *Petalophyllum ralfsii.*
Llwyn SAC	9,376	Annex I habitats that are a primary reason for selection of this site: • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) * Priority feature
Elwy Valley Woods SAC	879	Annex I habitats that are a primary reason for selection of this site: • *Tilio-Acerion* forests of slopes, screes and ravines * Priority feature
Traeth Pensarn	645	Traeth Pensarn is of special botanical interest for its vegetated shingle beach plant communities.

Site name & Designation	Distance from the three corridor/landfall/ substation zone options under consideration at the time of survey (m)	Reason for Notification/Designation
SSSI		
Coedydd ac Ogofau Elwy a Meirchion SSSI	879	The site is of special interest for its semi-natural broadleaved woodland, its rare flowering plant assemblage, its scarce bryophyte assemblage and the geological and palaeontological interest of Galltfaenan, Cefn and Pontnewydd Caves.
Rhuddlan Pond LNR	630	Rhuddlan Pond Nature Reserve is an accessible reserve including ponds and meadows.
Brickfields Pond LNR	1,227	Brickfields Pond, set in west Rhyl, is a local nature reserve popular for a range of recreational activities, including a 1km circular route of the pond. The site was once a clay pit, which was later filled in to create the Brickfield Pond seen today.
Kinmel Dunes LNR	1,997	Kinmel Dunes is one of the few surviving fragments of sand dune in the locality. This small sand dune system is home to a variety of native maritime plants. Seals can sometimes be seen close to the shore and bird life includes skylark, kestrel and ringed plover.

A further 70 non-statutory LWS occur within the Study Area, twelve of which are either located within the three route corridor/substation option locations or within a 100m buffer from these. These are also illustrated on Drawing 3, and a list of sites is provided at Appendix A. Further detail in respect of the reason for importance of these LWS is not currently available, but any available details in respect of the sites within the buffer zone of the preferred corridor, landfall and substation will be obtained and used to inform the ES.

3.3 Habitats

Habitats within the Survey Area were mapped to Level 3 of the UKHab Primary Habitat Hierarchy including mandatory secondary habitat codes (numbers 10 – 41) where applicable and possible. If field survey access was possible habitats were mapped to Level 4 (where appropriate), plus mandatory secondary codes. Boundary fences were not mapped. Refer to Drawing 4 (Habitat Plan). Ponds and watercourses within 250m of the three onshore infrastructure options are shown in Drawing 5 (Ponds and Watercourses). More details will be provided for the preferred onshore infrastructure option, once surveys of the outstanding areas have been completed, in a separate Habitat Survey report which will be appended to the PEIR and ES.

General descriptions for the various habitats encountered, including illustrative photographs, are provided below. Detailed descriptions have not been provided within this report, but will be made available for the preferred corridor, landfall and substation once full survey access has been obtained and further surveys have been completed. All data are stored in a GIS and could be made available upon request.

3.3.1 Marine Inlets and Transitional Waters

The coastal areas are all heavily modified, with promenades/sea walls present. Photograph 3-1 illustrates the sand, gravel and the eroded remains of previous sea defences present at the beach at Rhyl (Landfall 5).

Photograph 3-1: Beach at Rhyl

3.3.2 Cropland – Arable and Horticulture

Cropland is most abundant north of the A55. Maize was a common crop at the time of survey, but barley and brassicas were also noted, as shown in

Photograph 3-2.

Photograph 3-2: Cropland: Barley Crop near Towyn (top) and Maize Southeast of Rhyl (bottom)

3.3.3 Neutral and Modified Grassland

The majority of the Survey Area comprises grassland that has been agriculturally improved to various degrees; no species-rich grassland was noted but due to the lack of full survey access its potential presence in areas which weren't accessible cannot be ruled out at this stage. Lower-lying fields north of the A55 were commonly more diverse than those south of it, with less dominance of perennial rye grass *Lolium perenne* and greater occurrence of crested dogs tail *Cynosurus cristatus* plus agricultural weed species such creeping thistle *Cirsium arvense*, common nettle *Urtica dioica* and dock species *Rumex spp* as well as species associated with damper conditions such as creeping bent *Agrostis stolonifera*, Yorkshire fog *Holcus lanatus*, hard rush *Juncus inflexus* and soft rush *J. effusus*. The most agriculturally improved fields were dominated by perennial rye grass, sometimes with white clover *Trifolium repens* and were used for grazing cattle or for silage, less commonly for hay.

Photograph 3-3: Grassland North of the A55

Photograph 3-4: Grassland South of the A55

3.3.4 Hedgerows and Scrub

Hedgerows are widespread across the Survey Area though most common south of the A55 the majority of which appeared to be managed via flailing. Most hedgerows were species-poor, dominated by a mixture of hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus*), though even these hedgerows often included mature oak trees (*Quercus spp*). The most species-rich hedgerows were noted to occur in the part of the Survey Area that lies to the south of St Asaph Business Park, and also included species such as (but not limited to) wych elm (*Ulmus glabra*), hazel (*Corylus avellana*), sycamore (*Acer pseudoplatanus*), holly (*Ilex aquifolium*), bird cherry (*Prunus padus*) and ash (*Fraxinus excelsior*).

Photograph 3-5: Hedgerows: Species-poor, Flailed with Trees South of St Asaph Business Park (top) and Unmanaged, North of Bodelwyddan (bottom)

3.3.5 Standing Open Water

Ponds occur at greatest density around St Asaph Business Park, and to the southeast of Rhyl in the area between the A525 and B5119. Ponds are scattered across the remainder of the area north of the A55 but are scarce south of the A55, away from the St Asaph Business Park area. Many of the ponds at the business park have been created specifically as part of previous mitigation measures for GCN.

Photograph 3-6: Ponds: Mitigation Pond at St Asaph Business Park (top), Field Pond south of the A55 bottom)

3.3.6 Rivers and Streams

There are two rivers and a network of streams and ditches present within the Survey Area. The major water course is the River Clwyd of which the section within the Survey Area is tidal and is illustrated in Photograph 3-7. The Afon Gele (Photograph 3-8) runs east to west through the low-lying fields east of Abergele and south of Towyn prior to joining the River Clwyd. The Afon Gele is much modified, forming part of the drainage network

for the low-lying fields in this part of the Study Area. Numerous small ditches and streams are present, particularly in the northern part of the Survey Area.

Photograph 3-7: River Clwyd

Photograph 3-8: Afon Gele

3.3.7 Fen Marsh and Swamp

Linear swamps and reedbeds are associated with the drainage network in the fields north of the A55, as illustrated in Photograph 3-9, with additional small reedbeds also present at Rhyl Golf Course (near Landfall 5).

Photograph 3-9: Swamp and Reedbed east of Rhyl (top) and close to the River Clwyd (bottom)

3.3.8 Urban

Urban areas are concentrated at the coast, plus at Rhuddlan, Bodelwyddan and St Asaph Business Park. These were not subject to detailed survey.

3.3.9 Woodland and Forest

Woodland is relatively scarce within the Survey Area, in part as a result of the cable routing and substation siting considerations RWE has made to deliberately avoid such areas. Access restrictions prevented field survey of most of the woodland present, to the extent it was not possible to classify it beyond UKHab level 3 Broadleaved Mixed and Yew woodland, dominated by oak and ash. Many of these woodlands have been subject to management such that they are, or contain elements of, plantation. Conifer plantation woodland is very scarce within the Survey Area.

Photograph 3-10: Broadleaved Woodland at Princes Gorse (North of A55)

Photograph 3-11: Broadleaved Woodland at close to St George (top) and along a bridleway at St Asaph Business Park (bottom)

3.3.10 Section 7 Habitats & Ancient Woodland

Whilst the majority of the Survey Area comprises agricultural grassland used for grazing cattle and sheep which is of limited ecological importance, the following habitats of Principal Importance (i.e. those included under Section 7 of the Environment Act (Wales) 2016), many of which are also included on Annex 1 of the Habitats Directive) are confirmed to be present, and are shown in general terms on Drawing 7 for the preferred cable

corridor, landfall and substation:

- Lowland mixed deciduous woodland – the largest blocks of woodland are considered likely to include this category[16]. It is also worth noting here that there are thirty small blocks of ancient woodland (Ancient Semi-Natural Woodland (ASNW) and Plantations on Ancient Woodland Sites (PAWS)), as listed in the Ancient Woodland Inventory, within the Survey Area. Most of these are part of larger woodland areas that extend beyond the Survey Area boundary. The vast majority of these are located south of the A55 and west of St Asaph Business Park; north of the A55 there are two blocks between Ysbyty Glan Clwyd and Pengwern, and a further two south east of Rhyl.

- Hedgerows – most of the hedgerows within the Survey Area are likely meet the Section 7 definition[17], which states:

  "*A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide. Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country*".

- Many of the fields north of the A55 and associated with the Afon Gele and River Clwyd drainage network are considered likely to meet to the description of Coastal and Floodplain Grazing Marsh (including those that have been agriculturally improved), which is[18]:

  "Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates. Almost all areas are grazed and some are cut for hay or silage. Sites may contain seasonal water-filled hollows and permanent ponds with emergent swamp communities, but not extensive areas of tall fen species like reeds; although they may abut with fen and reed swamp communities."

[16] Section 7 Habitat definitions align with the UK Biodiversity Action Plan Priority Habitat Descriptions published in 2008 and updated in 2011, available at https://data.jncc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf
[17] See 16
[18] See 16

Photograph 3-12: Coastal and Floodplain Grazing Marsh adjacent to the River Clwyd

- Reedbeds – the largest linear reedbeds and those at Rhyl Golf Course are considered to meet the Section 7 description;[19]

  "Reedbeds are wetlands dominated by stands of the common reed Phragmites australis*, wherein the*

[19] See 16

water table is at or above ground level for most of the year. They tend to incorporate areas of open water and ditches, and small areas of wet grassland and carr woodland may be associated with them."

- Rivers – The River Clwyd and Afon Gele are likely to meet the definition by virtue of supporting other protected and/or Section 7 species such as otter and water vole, rather than for habitat type/quality *per se*; and

- Ponds; most ponds in the area are likely to meet the Section 7 definition by supporting GCN and/or other Section 7 or Red Data Book species.

Welsh Habitat Network Areas[20] are also identified within the Study Area and are shown on Drawing 6. In its 2013 report, NRW states "*The habitat network layers offer a general guide to how habitats are functionally related in the landscape, and therefore can be interpreted to help locate conservation action such as habitat restoration and expansion*."

3.4 Species

The following sections are based on a combination of desk study information, field survey data and an assessment of the likely value of the habitats present for each species or group of species.

3.4.1 Plants

The desk study confirms that numerous notable, rare or invasive non-native plant species occur within 2km of the proposed corridors, landfalls and substation zones; this includes two species listed on Schedule 8 of the Wildlife & Countryside Act 1981 (as amended) and nine species listed on Section 7 of the Environment Act (Wales) 2016. In addition, a further 60 species listed on the Red Data Book (RDB) (Wales) and/or the Red Data Book (UK)[21] also occur within the 2km Study Area. A table listing these species is included at Appendix B.

Many of the records are associated with coastal habitats, habitats along the River Clwyd or woodlands. Whilst there is a record for Butchers broom *Ruscus aculeatus* (RDB) within the Survey Area, it is close to the remains of a dwelling and is considered most likely a garden escape in this instance. The habitat survey undertaken to date would also suggest that areas at Rhyl Golf Course and habitats immediately adjacent to the River Clwyd are the areas most likely to be associated with important plant species.

During the field survey in 2020, a mature black poplar *Populus nigra* was noted south of St Asaph Business Park at grid reference SJ 01749 72993. This species is a relatively rare hardwood in the UK and efforts are underway to conserve its genetic diversity[22]; female trees are particularly scarce (the sex of the tree within the Survey Area is unknown). This species is believed to be have been included as a Local Biodiversity Action Plan (LBAP) species; the current LBAP status for Denbighshire and Conwy remains to be confirmed.

Invasive non-native species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were not

[20] Latham, Sherry & Rothwell, (2013) CCW Staff Science Report No 13/3/3 Ecological Connectivity and Biodiversity Prioritisation in the Terrestrial Environment of Wales.

[21] See 11 and the JNCC Conservation Designations for UK Taxa 2020 available at https://hub.jncc.gov.uk/assets/478f7160-967b-4366-acdf-8941fd33850b

[22] Cottrell, J., A'Hara S., and Adams, K. (2018) Forestry Commission Research Note Conservation of Black Poplar: insights from a DNA fingerprinting approach.

present in the dataset provided by Cofnod. However, several of these species, such as Himalayan balsam *Impatiens glandulifera*, *Cotoneaster* species, and *Rhododendron ponticum* were noted within the Survey Area during the field survey but were nowhere found to dominate.

3.4.2 Fish

Comments received at the scoping stage and desk study data confirm that European eel (*Anguilla anguilla*), Atlantic salmon (*Salmo salar*), brown trout (*Salmo trutta*) and bullhead (*Cottus gobio*) have been recorded in the River Clwyd and/or its tributaries. These species are considered important for the following reasons:

- European Eel – Listed as Critically Endangered on the IUCN Red List and is a Section 7 species listed in the Environment Act (Wales) 2016;
- Atlantic salmon is included on Schedule 4 of the Habitats Regulations (may not be taken or killed in certain ways) and also included on Section 7 of the Environment Act (Wales) 2016;
- Brown trout – included on Section 7 of the Environment Act (Wales) 2016; and
- Bullhead – included on Schedule 4 of the Habitats Regulations (may not be taken or killed in certain ways).

Whilst the Atlantic salmon, brown trout and bullhead records are confined to the main river system and tributaries, it is possible that European eel make use of other smaller water courses and ponds within the Study Area.

3.4.3 Invertebrates

The desk study confirms that numerous notable invertebrate species occur within 2km of the potential onshore infrastructure options; the majority of records are for butterflies and moths recorded at Bodelwyddan, St Asaph Business Park and Rhuddlan (refer to Appendix C for the full list). This includes two species listed (in respect of sale only) in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Section 7 of the Environment (Wales) Act 2016; white-letter hairstreak *Satyrium w-album* and pearl-bordered fritillary *Boloria euphrosyne*. Pearl-bordered fritillary is associated with woodland habitats and needs abundant foodplants (violet *Viola* species) growing in short, sparse vegetation, where there is abundant leaf litter. White-letter hairstreak is dependent on elm *Ulmus* species; wych elm was noted to be abundant in some hedgerows south of St Asaph Business Park.

A further 40 species are listed on Section 7, four of which are also included in the Red Data Book (UK)[23]; small pearl-bordered fritillary *Boloria selene* which uses damp grassland, plus small heath *Coenonympha pamphilus,* wall *Lasiommata megera* and grayling *Hipparchia semele* which are associated with dry grassland and/or open stony habitats.

Habitats within the Study Area that are considered to be most valuable to invertebrate species broadly match those listed for important plant species, namely habitats immediately adjacent to the River Clwyd, coastal habitats, hedgerows and ancient or semi-natural woodland.

[23] See 21

3.4.4 Amphibians

The desk study confirms that breeding GCN have been recorded at many of the ponds within the Study Area, with a well recorded population at St Asaph Business Park. GCN is protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act (as amended) and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended), it is also a Section 7 species. Glascoed Nature Reserve (location indicated on Drawings 7-8) at the extreme southwest of the business park includes numerous breeding ponds and is managed for the benefit of the species. Mitigation for GCN has been and remains an integral part of the development of the business park.

In addition, common toad (*Bufo bufo*), listed on Section 7 of the Environment (Wales) Act 2016, smooth newt (*Lissotriton vulgaris*), palmate newt (*Lissotriton helveticus*) and common frog (*Rana temporaria*) have been widely recorded at ponds within the Study Area.

Three records for natterjack toad (*Epidalea calamita*) were included in the Cofnod dataset within 2km of the proposed corridors, landfalls and substation zones. The records were from Rhyl, Abergele and Pensarn with unspecified dates prior to 1919, prior to 1960 and prior to 1995. It is understood from discussion during Expert Topic Group (ETG) meetings that no extant populations occur at these locations currently.

Rough grassland, hedgerow, wetland and woodland habitats are suitable for use by this species group and are present across the Survey Area. However, away from St Asaph Business Park ponds are scarce south of the A55; this part of the Study Area is therefore less likely to be of importance for this species group.

3.4.5 Reptiles

Four species of reptile have been recorded within the Study Area. These include:

- Adder *Vipera berus* – a single record from St Asaph, dated 1907;
- Slow worm *Anguis fragilis* - 14 records, the majority of which are from St Asaph Cemetery;
- Grass snake *Natrix natrix* - seven records from St Asaph Cemetery, St Asaph Business Park and Glan Clwyd Hospital; and
- Common lizard *Zootoca vivipara* - 18 records, also from St Asaph Cemetery, coastal habitats at Rhyl and Glan Clwyd Hospital.

All the above species are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are listed on Section 7 of the Environment Act (Wales) 2016.

Habitats that may be suitable for use by reptiles occur across the Survey Area and include rough grassland, field margins, hedgerows, scrub, woodland edges and wetlands.

3.4.6 Birds

Cofnod data and the other relevant data sources reviewed (see Table 2-1) include records for a wide range of legally protected or otherwise notable (e.g. Section 7 species) bird species within the Study Area. These include 42 species that are protected through inclusion on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), 37 Section 7 species, 30 species listed under Annex 1 of the EU Birds Directive, 44 species red listed

as 'Birds of Conservation Concern'[24] and 65 species amber listed as 'Birds of Conservation Concern'. A full list of these species, including scientific names, is provided in Appendix D.

Breeding Birds

The desk study information suggests that certain locations within the Study Area may be of more importance to the above species. The following sites produced records of legally protected or otherwise notable bird species during the breeding season[25]:

- **Afon Clwyd** - black-headed gull, little egret, ringed plover, oystercatcher, mallard, shelduck and teal;
- **Bodelwyddan Castle and Estate** - willow warbler, dunnock, lesser spotted woodpecker, marsh tit, spotted flycatcher, and tawny owl;
- **Bodrhyddan Hall, Dyserth** - barn owl, bullfinch, lesser redpoll, redstart, spotted flycatcher, and tawny owl;
- **Brickfields Pond, Rhyl** – bullfinch, mallard and shelduck;
- **Bryn Meiriadog and Cefn Meiriadog** - bullfinch, house sparrow, kingfisher, peregrine, swift and willow warbler;
- **Coed y Morfa, Prestatyn** - Barn owl house sparrow;
- **Ffrith Beach** –linnet, peregrine, ringed plover, skylark, starling and swift;
- **Kinmel Bay** – dunnock, herring gull, house sparrow, kestrel, skylark and willow warbler;
- **Marine Lake, Rhyl** – lapwing, oystercatcher and shelduck;
- **Pensarn Beach** – meadow pipit and ringed plover;
- **Rhuddlan inc. Rhuddlan Nature Reserve** –herring gull, house martin, lapwing, meadow pipit, skylark, song thrush and swift;
- **St Asaph Business Park, including Glascoed Nature Reserve** - barn owl, dunnock, herring gull, house sparrow, peregrine, starling, swift and tawny owl; and
- **St George** - barn owl, bullfinch, house martin, lapwing, linnet, peregrine and skylark.

Based on the desk study data, three species included on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) and/or Annex 1 of the EC Birds Directive may breed within the Study Area: barn owl, kingfisher and peregrine. Suitable habitat for barn owl (foraging and nesting habitat) is present throughout the Survey Area. Suitable habitat for kingfisher within the Survey Area is limited to larger waterbodies and watercourses. No

[24] MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746

[25] Records during the breeding season do not necessarily infer that breeding took place at the relevant site.

suitable habitat for breeding peregrine (e.g. quarries, rock faces, tall buildings, etc) was noted within the Survey Area during the field survey.

As set out in Section 3.1 the Study Area comprises three broadly distinct areas. The coastal strip includes few areas that are not built up, which are largely limited to the beaches and Rhyl Golf Course / Ffrith Beach area, which forms part of the Grass Focal Network (Drawing 6). Notable breeding species that could be present in these areas include ringed plover and a number of passerine species. It is understood that little tern has historically bred at Rhyl Harbour but there are no recent records (Joel Whalley, Denbighshire County Council, pers. comm.). The extant little tern colony at Gronant lies outside the 2km Study Area to the east.

North of the A55 the land is largely low-lying agricultural land with a network of drainage ditches, much of which represents "Coastal and Floodplain Grazing Marsh" and/or is included in the Grass Focal Network (Drawing 6). Hedgerows and woodland are relatively scarce. This area is likely to support a range of farmland passerine species throughout and less-intensively managed areas could potentially support breeding waders. The Afon Clwyd and other larger waterbodies could also support breeding wildfowl. Barn owl and kingfisher could both be present, where there is suitable nesting habitat.

South of the A55, the smaller pastoral fields and more frequent woodland and hedgerows are likely to support a range of farmland and woodland passerine species. Suitable habitat for breeding waders or wildfowl is very limited. Barn owl could be present, where there is suitable nesting habitat and kingfisher is also possible, although suitable nesting habitat is limited.

Non-breeding (Wintering) Birds

The following sites produced records of notable bird species during the non-breeding season (winter):

- **Afon Clwyd** – bar-tailed godwit, black-tailed godwit, common sandpiper, curlew, lapwing, golden plover, greenshank, little egret, oystercatcher and shelduck;
- **Brickfields Pond, Rhyl** – black-headed gull, black-tailed godwit, common gull, curlew, gadwall, pochard, shelduck, shoveler and wigeon;
- **Pensarn Beach/Belgrano** – curlew, dunlin, lapwing, golden plover, lesser black-backed gull, oystercatcher, red-throated diver, sanderling, shag, shelduck and whimbrel;
- **Towyn Fields (south of Towyn)** – common gull, curlew, oystercatcher, shelduck and shoveler;
- **Marine Lake, Rhyl** – curlew, lapwing, mallard, teal and wigeon;
- **Kinmel Bay** – common gull, curlew, dunlin, great black-backed gull, greylag goose, lapwing, little egret and redshank; and
- **Ffrith Beach** – black-headed gull, common gull, curlew, dunlin, herring gull, lapwing, sanderling and starling.

As noted in relation to breeding birds, the coastal strip includes few areas that are not built up and habitat that could support important populations of non-breeding birds is largely limited to the beaches and the few coastal

waterbodies. These areas could support notable populations of a range of waterbird species[26], although it is noted that most of the beaches are subject to relatively high levels of human disturbance.

North of the A55 the flat, open fields and drainage ditches could potentially support a range of waterbird species, especially those areas representing "Coastal and Floodplain Grazing Marsh", many of which are subject to LWS designation, e.g. the Clwyd Estuary and Adjacent Fields LWS, Abergele Grazing Marsh LWS, Coed Gors LWS and Morfa Rhuddlan LWS. The intertidal habitat at the Afon Clwyd could also support a range of waterbird species and the area is also likely to support a range of farmland passerine species.

South of the A55, the smaller pastoral fields, woodland and hedgerows are unlikely to support important waterbird populations, although they are likely to support a range of farmland and woodland passerine species.

3.4.7 Mammals

Bats

At least eight bat species have been recorded within the Study Area, and are listed below:

- Lesser horseshoe bat *Rhinolophus hipposideros*; there is a significant summer and hibernation roost southeast of Rhyl, a maternity colony south of Abergele and records within caves in woodland to the south of the Study Area.
- Brown long-eared bat *Plecotus auritus*; there are maternity colonies records in the St Asaph area;
- Noctule bat *Nyctalus noctula*; a maternity colony was noted in 2009 at a tree south of the existing National Grid substation at Bodelwyddan;
- Common pipistrelle *Pipistrellus pipistrellus*; there is a maternity roost at Bodelwyddan Castle Grounds, roosts are also present at Moelfre and Tywyn;
- Soprano pipistrelle *P. pygmaeus*; there is a small roost in a bat box in the St Asaph area and two other small roosts in the Moelfre area at the west of the Study Area;
- Daubenton's bat *Myotis daubentonii*; recorded hibernating in caves in woodland to the south, historically (>25 years ago) also recorded at Bodrhyddan and Tywyn;
- Natterer's bat *Myotis natterri*; small roosts recorded south of Abergele, south of St Asaph and in caves in woodland to the south; and
- *Myotis* species; recorded in caves in woodland to the south, and in St Asaph.

All bat species in the UK are protected through inclusion in Schedule 5 of the Wildlife and Countryside Act (as amended) and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). Noctule, common pipistrelle, soprano pipistrelle, brown long-eared bat and lesser horseshoe bat are also Section 7 Species.

[26] The definition of waterbirds used here follows that used by the Wetland Bird Survey (WeBS) and includes: wildfowl (ducks, geese and swans), waders, rails, divers, grebes, cormorants and herons.

559 trees/woodlands have been identified within the Survey Area which are likely to have Potential Roost Features (PRF). Numerous buildings and structures are also present within the Survey Area that may also be used by roosting bats. Given the number of features identified they are not shown or described here, although indicative locations of trees with PRF are shown for the preferred onshore infrastructure option in Drawing 8. Potential roosts that may be impacted will be verified through additional survey at the preferred route corridor, landfall and substation locations and results provided as part of the subsequent bat survey report, to be appended to the ES.

The Survey Area includes numerous habitats that are suitable for use by commuting and foraging bats, such as hedgerows, woodland edges, watercourses and wetlands.

Badger

The badger receives protection under the Protection of Badgers Act 1992. Badger has been recorded in the Study Area. Woodland and hedgerows are particularly suitable for sett digging, and the grassland fields for foraging. Evidence of badger in the form of active setts and latrines was located in the Survey Area during the field survey. Details for the location of these have been retained by SLR and used to inform this PEA, but are not included here due to the threat of persecution of this species if this information enters the public domain. This information will be included in a subsequent confidential badger survey report (along with data for the areas not covered yet) which will be appended to the ES (sett details will be provided in a separate confidential annex).

Otter

Otter is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended), it is also a Section 7 species.

Cofnod records confirm that otter has been recorded on all the major watercourses in the Study Area, and many of the smaller ones. No records for otter holts are contained in the available data, but a mother and two cubs were recorded in 2006 and 2007 on the River Clwyd at Rhuddlan. A fresh spraint was noted adjacent to the River Clwyd at Rhuddlan during the field survey, at grid reference SJ 01691 78415.

Otter are also likely to utilise the ditch and pond network present in the area, particularly during the amphibian breeding season when frog, toad and newt prey would be abundant.

Water Vole

Water vole is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), it is also a Section 7 species.

Cofnod records confirm that water vole has been recorded at many of the small water courses in the northern parts of the Study Area. Reedbeds and ponds in the Survey Area may also be used by this species if suitable food plants and cover are available.

Dormouse

Dormouse is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act (as amended) and in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended), it is also a Section 7 species.

Cofnod holds nine records for dormouse within the Study Area. Seven of these are from the more wooded areas south of the A55 and west of St Asaph Business Park. The remaining two occur a short distance north of the A55, west of the A525.

Within the Survey Area suitable woodland and hedgerow habitat for use by dormice is most prevalent south of the A55. Hazel nut searches were undertaken within accessible woodlands/hedgerows during the field survey but no evidence of the species was recorded. Special effort was made to record the presence of dormouse food plants within hedgerows during the field survey; hazel was not found to be as abundant as anticipated, but other species such as bramble, elm and honeysuckle were locally frequent. The network of woodland and hedgerows in the southern parts of the Survey Area are considered suitable for use by dormice, but are often suboptimal due to their highly managed (flailed) character, which is likely to limit flowering/fruiting potential food resources. There is less of a linked network of hedges north of the A55, and of those present and observable, most were unsuitable for use by dormice due to lack of food plants.

Other Mammals

Three other Section 7 mammal species are noted to occur within the 2km Study Area: polecat (*Mustela putorius*), hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*). Polecats typically use lowland woodland habitats, wetlands and farm buildings; these habitats are widespread across the Survey Area. The Survey Area also includes numerous habitats that are suitable for use by hedgehog such as hedgerows, woodland edges, scrub, and gardens. Suitable habitat for brown hare is also present across the Survey Area, including the grassland for foraging and woodland and hedgerows for cover.

4.0 Confirmation of Important Ecological Features and Requirements for Further Survey

4.1 Preferred Onshore Infrastructure Option

In January 2021 landfall location 5, cable route 5a and substation zone 5 (Drawing 1) were identified as AyM's preferred options for onshore infrastructure associated with AyM OWF. As stated in Section 1, this section of the report relates only to these preferred onshore infrastructure options rather than for those options which are not being taken forward. The following sections provide additional detail in respect of important ecological features that may be affected by the preferred onshore infrastructure option and outlines the scope of additional ecological surveys considered necessary to inform the EIA process. Readers should bear in mind that the recommendations are made based upon the best available data collected to date but may be subject to update and amendment as required, as additional ecological field survey data is gathered.

Further to the selection of preferred onshore infrastructure options, RWE has progressed with design work in order to inform EIA work that will be presented in the PEIR. The emerging additional design work has led to some minor changes in route corridor, landfall and substation zones which have occurred after the 2020 PEA survey. This accounts for some minor discrepancies between boundaries shown on Drawings 1-6 and those on Drawings 7-9. This also means that for some relatively small areas there has been no field survey or aerial interpretation of habitats to date. These areas will all be subject to detailed survey in 2021, with results included in later reports that will be appended to the PEIR and ES.

4.2 Important Ecological Features and Further Survey Requirements

The important ecological features identified to date that may be affected by the preferred onshore infrastructure option are identified in Table 4-1 and shown on Drawings 7-8. Table 4-1 identifies where further survey is necessary in order to robustly evaluate potential ecological impacts of the project as part of the EIA, where no such information is needed, and where impacts have been scoped out. The scope proposed below will also be subject to continual iterative refinement, as data is gathered and/or in response to changes in the design of onshore infrastructure.

It is worth noting here that it is recognised that the potential for air quality impacts upon designated sites may need to be assessed. However, this has not been considered here as construction traffic movement and routeing is currently being finalised and would inform the consideration of air quality impacts upon designated sites. Details of any such assessment will be provided separately at a later date.

Table 4-1
Important Ecological Features that may be Affected and Requirements for Further Survey

Important Ecological Feature	Reason for Importance	Further Survey Required
Liverpool Bay SPA	Statutory Designated Site	Where it lies within proximity to the preferred landfall location, Liverpool Bay SPA does not include any intertidal habitat and none of the qualifying features are reliant on terrestrial habitat, except for little tern, which breeds outside the Study Area to the east. It is therefore beyond the scope

Important Ecological Feature	Reason for Importance	Further Survey Required
		of the onshore assessment and no further survey is required as part of onshore assessment.
Dee Estuary SPA/SAC/Ramsar	Statutory Designated Site	This site is >3km distant from the preferred cable corridor, landfall and substation. Due to the separation distance and lack of (onshore) hydrological connection, no direct impacts are anticipated to arise as a result of the onshore infrastructure and as such no further survey is necessary as part of onshore assessment.
Llwyn SAC	Statutory Designated Site	This site is >10km from the preferred cable corridor, landfall and substation, has no mobile notified features (e.g. bats or birds) and/or no hydrological connection. It is proposed to scope this site out of further assessment.
Elwy Valley Woods SAC, underpinned by Coedydd ac Ogofau Elwy a Meirchion SSSI	Statutory Designated Site	This site is 1.5km from the preferred cable corridor, landfall and substation, has no mobile notified features (e.g. bats or birds) and/or no hydrological connection. It is therefore proposed to scope this site out of further assessment.
Traeth Pensarn SSSI	Statutory Designated Site	This site is 6.5km from the corridor, landfall and substation, has no mobile notified features (e.g. bats or birds) and/or no hydrological connection. It is therefore proposed to scope this site out of further assessment.
Graig Fawr SSSI	Statutory Designated Site	This site is approximately 2km from the preferred cable corridor, landfall and substation, has no substantially mobile notified features (e.g. bats or birds, though an important population of silver studded blue *Plebejus argus ssp. caernensis* butterflies are noted present) and/or no hydrological connection. It is therefore proposed to scope this site out of further assessment.
Brickfield Pond, Rhuddlan Pond and Kinmel Dunes	LNR	These sites are between 0.5 and 3km distant from the preferred cable corridor, landfall and substation, such that no direct or indirect impacts are anticipated. It is proposed to scope these sites out of further assessment.
Y Ffrith, Prestatyn	LWS	LWS partly lies within 100m of the preferred cable corridor and landfall and existing roads within the LWS may be used as construction haul roads. Habitat survey of areas within 100m of the preferred landfall, cable corridor and proposed haul roads that were not accessible in 2020 is therefore

Important Ecological Feature	Reason for Importance	Further Survey Required
		proposed, once access is obtained.
Bryn Cwnin Wetland	LWS	LWS partly lies within 100m of the preferred cable corridor. Habitat survey of areas within 100m of the cable corridor that were not accessible in 2020 is therefore proposed, once access is obtained.
Clwyd Estuary and Adjacent Fields	LWS	LWS partly lies within the preferred cable corridor. Habitat survey of areas within 100m of the cable corridor that were not accessible in 2020 is therefore proposed, once access is obtained.
Coed Cord/Coed y Saeson	LWS	LWS located >100m from the cable corridor and is not hydrologically linked to it. No direct or indirect impacts are anticipated. It is proposed to scope this site out of further assessment.
All other LWS listed at Appendix A	LWS	Remaining LWS are all located >250m from the preferred landfall, cable corridor and substation and are not hydrologically linked to them. No direct or indirect impacts are anticipated as a result of lack of potential impact pathways. It is therefore proposed to scope these sites out of further assessment.
Habitats	ASNW and other Section 7 Habitats, plus areas within Welsh Habitat Network Areas	Habitat survey of all areas within 100m of the preferred landfall, cable corridor, substation and other associated construction areas that were not accessible in 2020 is proposed, once access is obtained. All areas will be surveyed to UKHab level 4 (where applicable), plus mandatory codes (10 – 41) as a minimum. Section 7 habitats will be assessed to UKHab level 5 (where applicable), plus mandatory codes (10 – 41). Hedgerow assessment will be undertaken at locations which may be breached, in order to ascertain if hedgerows meet the definition of "Important Hedgerow" under the wildlife and landscape criteria of the Hedgerow Regulations 1992. Based on information obtained to date, c.63 hedgerows may be breached. This assessment will be targeted, informed by a review undertaken during the UKHab survey where species rich (more than five woody species noted) will be identified, and detailed scrutinising of desk study detail undertaken to determine if the hedge is likely to support important species defined in the Regulations.

Important Ecological Feature	Reason for Importance	Further Survey Required
Plant species	Protected or notable species	Habitat survey of all areas within 100m of the preferred onshore infrastructure locations and other associated construction areas that were not accessible in 2020 is proposed, once access is obtained. Detailed survey of areas that are known or suspected to support protected or notable plant species, and that may be significantly impacted, will be undertaken. Such surveys would comprise searching discrete areas of suitable habitat specifically looking for rare species, during the appropriate season (dependent on likely species). Based on information to date it is considered that the only locations that may warrant such effort are selected areas within Rhyl Golf Course / Y Ffrith LWS and habitats immediately adjacent to the River Clwyd, although this can only be confirmed following completion of the remaining habitat surveys. Invasive non-native plant species will be recorded during the habitat survey.
Fish: Atlantic salmon, brown trout, European eel and bullhead	Protected or notable species	The River Clwyd is the only significant water course within the preferred corridor. Existing data in respect of populations of important fish species will be sought to inform the assessment – at this stage it is considered unlikely that further surveys will be needed given the nature of the proposed works in that area.
Invertebrates	Protected or notable species	Additional survey for invertebrate species is not proposed for the purpose of EIA given that most habitat loss will only be temporary in nature and will only affect a relatively small proportion of most of the habitats affected. Assessment of impacts to this species group will be via a precautionary habitat-based assessment, focussing on a) areas where permanent habitat loss is likely (i.e. west of St Asaph Business Park, at the substation location) and b) areas that are known or suspected to support potentially important populations of rare/notable species. Based on data to date, this is considered to include Rhyl Golf Course and the adjacent Y Ffrith LWS and woodland and scrub southeast of Rhyl.
GCN and common toad	Protected or notable species	It is proposed to deviate from “standard” survey effort, whilst

Important Ecological Feature	Reason for Importance	Further Survey Required
		following standard methods[27], given the known presence of GCN at most ponds within 250m of the preferred landfall, cable corridor, substation and other associated construction areas and the well recorded population at St Asaph Business Park. All ponds within 250m of the preferred landfall, cable corridor, substation and associated construction areas will be subject to • HSI survey; and • presence/absence survey, unless existing desk study data confirms presence in one of the last five breeding seasons (i.e. 2016-2020). Presence will be assumed if GCN have been recorded within the last five years, or if the pond occurs within 250m of another with a positive record in the last five years. The c.16 ponds at Glascoed Nature Reserve will be assumed to support a large population based on desk study data. The Cofnod data for these ponds is difficult to interrogate with respect to absolute numbers or survey effort, but suggests these ponds are surveyed annually. Further effort will be made to locate the original source data and/or more detailed information. Except for Glascoed Nature Reserve, all ponds that support GCN and that are within 250m of permanent or 100m of temporary habitat loss will be subject to population size class assessment unless desk study data confirms population size within the last three breeding seasons (i.e. 2018 – 2020). The population size will be assumed to remain as last recorded. This level of survey effort is considered sufficient to evaluate the ecological importance of the GCN population present for the purpose of EIA, and to determine if a European Protected Species Licence (EPSL) is likely to be obtained. It is important

[27] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. and Dunn, F. (2014). 'Analytical and methodological development for improved surveillance of the Great Crested Newt', in Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA.
Langton, T., Beckett, C. and Foster, J. (2001). 'Great Crested Newt Conservation Handbook', (Halesworth: Froglife).

Important Ecological Feature	Reason for Importance	Further Survey Required
		to note that additional survey would almost certainly be required in future in order to obtain current data with which to inform any future EPSL application. Habitat modelling for GCN is not proposed as it is not considered to assist with the impact assessment process in this instance. However, an assessment of terrestrial habitat suitability for great crested newt of areas within the preferred landfall, cable corridor, substation and other associated construction areas will be undertaken.
Reptiles	Protected or notable species	The habitat survey completed to date has indicated that moderate or highly suitable reptile habitat (in the form of hedgerows, scrub and rough field margins) occurs at the proposed substation location, where permanent habitat loss will occur. The substation area will therefore be subject to more detailed habitat suitability assessment, then presence/absence survey undertaken following standard methods[28] at areas of moderate or highly suitable habitat that could be permanently affected. Surveys for reptiles in areas that would only be subject to relatively small-scale temporary loss are not considered necessary provided Reasonable Avoidance Measures are employed during construction. Further details of proposed Reasonable Avoidance Measures will be provided in the ES.
Breeding Birds	Protected or notable species	As set out in the Chapter 10.1 of the EIA Scoping Report, breeding bird surveys will be targeted at areas in which significant effects on protected or notable bird species are possible. Given the nature of the project most effects on breeding bird species will be temporary in nature (e.g. disturbance or temporary habitat loss). Significant effects are therefore only likely in respect of: species listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) and/or Annex 1 of the EC Birds Directive; and breeding waders or notable wildfowl species, for which even temporary effects could be significant. Surveys for these species, where suitable habitat is present, will

[28] Froglife (1999). Froglife Advice Sheet 10: reptile survey. Froglife, London.

Important Ecological Feature	Reason for Importance	Further Survey Required
		therefore be required. Assuming that standard mitigation measures are employed during construction and habitats are quickly reinstated following construction, temporary effects on farmland and woodland species, even those species which are regarded as notable, are not likely to be significant. Detailed surveys for these species are therefore not considered necessary along much of the preferred cable route. Permanent effects will be limited to the substation. Permanent loss of habitat and disturbance could give rise to significant effects for the full range of protected or otherwise notable species and surveys at the preferred substation location will therefore be required. On the basis of the above, the following surveys are proposed to inform the EIA (survey areas are shown in Drawing 8): • Ffrith Beach / Rhyl Golf Course – the survey will cover areas within the proposed landfall zone and associated haul roads/construction areas, plus a 250m buffer (excluding built-up areas). Three survey visits will be completed between April and June using a territory mapping method[29]. All protected and notable species will be recorded, with a particular focus on ringed plover. The survey method is broadly compatible with the recommended survey method for ringed plover[30]. • Clywd Estuary and Adjacent Fields LWS / Coastal Floodplain Grazing Marsh – within these areas the survey will cover all areas that lie within the preferred cable corridor, plus a 250m buffer. Three survey visits will be completed between April and June using a territory mapping method. All protected and notable species will be recorded, with a particular focus on breeding waders and other waterbirds. The survey method is compatible with the recommended survey

[29] e.g. Marchant, J. (1983). Common Bird Census Instructions. BTO, Thetford.
[30] Gilbert, G, Gibbons, D.W. & Evans, J. (1998) Bird Monitoring Methods: A Manual of Key Techniques. RSPB, Sandy.

Important Ecological Feature	Reason for Importance	Further Survey Required
		method for lowland breeding waders[31]. • Substation - the survey will cover all areas that lie within the preferred substation zone plus a 100m buffer. A 100m buffer is considered sufficient here due to the lack of suitable habitat for breeding waterbirds. Three survey visits will be completed between April and June using a territory mapping method. All protected and notable species will be recorded. • Barn Owl – the survey method follows the methodology set out by Gilbert *et al*[30]. All potentially suitable trees and potentially suitable structures (where accessible) along the preferred cable route corridor, substation and associated construction areas, plus a 100m buffer[32], will be inspected in early spring. Trees and structures which are confirmed to have potential to support nesting barn owls will then be re-inspected between June and mid-July. Additional dusk visits may be required during the summer period if re-inspection visits are inconclusive. All inspections of potential nest sites will only be undertaken by an ornithologist holding a Schedule 1 barn owl licence. • Kingfisher – where not covered by other breeding bird surveys, a search for suitable nesting habitat for kingfisher will be undertaken in conjunction with surveys for water vole and otter. If suitable habitat is recorded additional survey visits, by an ornithologist holding a Schedule 1 kingfisher licence, may be required to confirm presence/absence.
Non-Breeding Birds	Protected or notable species	Wintering bird surveys commenced in October 2020 and will be completed in March 2021. The survey specifically targets intertidal and wetland habitats and coastal grasslands, where these could potentially be used by significant numbers of wintering waterbirds. As set out in Chapter 10.1 of the EIA Scoping Report, significant effects on other wintering bird

[31] O'Brien, M. & Smith, K.W. (1992) Changes in the status of waders breeding on wet lowland grassland in England and Wales between 1982 and 1989. Bird Study 39: 165-176.
[32] The maximum disturbance distance for barn owl is 50-100m (Ruddock, M & Whitfield, D.P. (2007) A Review of Disturbance Distances in Selected Bird Species.

Important Ecological Feature	Reason for Importance	Further Survey Required
		species are unlikely and therefore surveys for other species were not considered necessary. The survey area (Drawing 8) includes the preferred landfall location, the Afon Clwyd and low-lying coastal fields where habitat is potentially suitable for waterbirds (and/or in areas where there are previous records of waterbird species), where these lie within 250m of the preferred cable route corridor. A 250m buffer was included to allow for possible disturbance effects during construction. Surveys of intertidal areas comprise monthly 'through-the-tide' counts, whereby waterbirds are counted and mapped hourly throughout a full tidal cycle. Surveys of the coastal fields comprise monthly mapped counts of waterbirds within the survey area. The survey scope and methods were discussed and agreed with the ETG prior to the survey commencing. A separate winter bird survey report, providing full details of survey methods and results, will be appended to the ES.
Bats	Protected or notable species	Surveys will be undertaken in accordance with published good practice guidelines[33] unless otherwise stated. Activity survey will be undertaken at hedgerows, woodlands and/or riparian areas which may be removed, illuminated or breached. Based on current information, there are c.63 breaches. Based on the habitat survey findings to date, habitat within the Survey Area is considered to be of varying quality for use by foraging and commuting bats, and it is therefore proposed to subdivide into the following areas for the purpose of activity surveys (listed from north to south), based upon definitions provided Table 4.1 of survey guidelines[34]. The survey effort proposed at each meets the recognised standard, but goes beyond in terms of automated detector installation such that at least one third of breaches will be surveyed as described.

[33] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
[34] See 33

Important Ecological Feature	Reason for Importance	Further Survey Required
		1. Landfall south to railway: low potential. No potential flight line severance, no survey proposed. 2. South of railway, north of A525: high potential One transect defined. One survey visit per month (April – October) undertaken at dusk or dawn. Six automated bat detectors installed, data collected on five consecutive nights per month (April – October). 3. Area between A525 and A547 (River Clwyd): Moderate potential. One transect defined. One survey visit per month (April – October) undertaken at dusk or dawn. Four automated bat detectors installed, data collected on five consecutive nights per month (April – October). 4. All areas south of A547: high potential Two transects defined. One survey visit per transect per month (April – October) undertaken at dusk or dawn. Six automated bat detectors installed per transect, data collected on five consecutive nights per month (April – October). Preliminary roost assessment will be undertaken at trees within 100m of the preferred landfall, cable corridor, substation and other associated construction areas; initial findings from the habitat survey completed to date indicate there to be at least 120 trees, plus additional areas of woodland that may support PRF within this area. Trees which could potentially be lost or damaged or disturbed by the project and initially assessed with moderate or high potential to support bats would be subject to an at-height PRF inspection (where safe to do so) during the active season (May – September) to better determine the roost potential and gather evidence of roosting bats (if present). Further presence/absence surveys would be undertaken at trees which are still considered to have moderate or high

Important Ecological Feature	Reason for Importance	Further Survey Required
		potential to support bats following the at-height PRF inspection and which may be removed or damaged. In general this would involve a total of two to three survey visits (depending on the level of roost potential) during May - September, each comprising the at-height PRF inspection (where safe to do so), and/or dusk emergence and/or dawn re-entry surveys. Deviations from this may be necessary due to structural safety issues or difficult sight lines, in which case tree-specific alternative methods would be used. Confirmed roost trees would be subject to additional survey as necessary in order to characterise the roost(s) present. No buildings or structures are to be removed, and all construction works are anticipated to be at least 35m from residential properties. Survey for bats at buildings is therefore not currently proposed. This would be reviewed if plans change and works may be located closer to buildings or structures with bat roost potential.
Badger	Protected or notable species	Survey of all areas within 100m of the preferred options that were not accessible in 2020 is proposed, in conjunction with the habitat survey, once access is obtained. Survey will follow standard methods[35] and include a search for the presence of active badger setts and signs.
Otter	Protected or notable species	Otter survey will be carried out at all potentially suitable watercourses crossing the preferred cable corridor, substation and other associated construction areas, plus 250m up and downstream, as shown on Drawing 8. Survey methods will be informed by current references[36] and surveys will take place in conjunction with surveys for water vole (below).
Water Vole	Protected or	Water vole survey will be carried out at all potentially suitable watercourses crossing the preferred cable route corridor,

[35] Scottish Natural Heritage (SNH) (2003). 'Best Practice Guidance - Badger Surveys', Inverness Badger Survey 2003, Commissioned Report No. 096.
[36] Chanin, P. (2003). 'Ecology of the European Otter', in Conserving Natura 2000 Rivers, Ecology Series No. 10, (Peterborough: English Nature).
Chanin, P. (2003). 'Monitoring the Otter', in Conserving Natura 2000 Rivers, Monitoring Series No 10, (Peterborough: English Nature).

Important Ecological Feature	Reason for Importance	Further Survey Required
	notable species	substation or associated construction areas, plus 200m up and downstream as shown on Drawing 8. Surveys will be undertaken in accordance with standard methods[37], which require up to two visits, two months apart, between April and October.
Dormouse	Protected or notable species	Based on current information there is limited potential habitat for use by dormice north of the A525, with increasing fragmentation, diminishing quality and lack of records as you progress northward of the A55. It is therefore proposed to undertake nest tube survey only at hedgerow breaches in the area south of the A525. Hazelnut searches would be undertaken at woodland within the preferred cable route corridor, and substation boundary plus surrounding 100m. Nest tube survey would be undertaken at all hedgerows that may be breached south of the A525 and which are potentially suitable for use by dormice. Dormouse survey would follow standard methods38, with up to 25 nest tubes per hedgerow crossing; the number of tubes is driven primarily by the need to install them at c.10m spacing; if dormouse are present in the survey area then this quantity of tubes is considered sufficient to determine presence/likely absence. Tubes would be installed in April 2021 and checked monthly April – November 2021 (eight visits in total) by a dormouse licence holder.
Other Section 7 Mammal Species: hedgehog, brown hare, polecat.	Protected or notable species	Detailed surveys are not proposed as part of onshore assessment given that most habitat loss will only be temporary in nature and will only affect a relatively small proportion of most of the habitats affected. Instead habitat-based assessment will be undertaken for these species and used as a basis for impact assessment.

[37] Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). 'The Water Vole Mitigation Handbook', The Mammal Society Mitigation Guidance Series, Fiona Mathews and Paul Chanin (eds.), (London: The Mammal Society).
[38] Bright, P.W., Morris, P.A. and Mitchell-Jones, A. (2006). 'Dormouse Conservation Handbook 2nd Edition', (Peterborough: English Nature).

4.3 Potential Requirements for Mitigation or Compensation Measures

A brief outline of the mitigation/compensation requirements that have so far been identified is described below. It is limited to mitigation/compensation that is likely to be required based on current data but does not include things which would be entirely dependent on the results of further surveys and project design, e.g. mitigation for loss of tree bat roosts. The final mitigation/compensation proposals will be subject to detailed, species and location-specific refinement, once all necessary data have been obtained, with full details provided in the ES and Outline Ecological Management Plan (OEMP). At this stage it is envisaged that general points are likely to include:

- compensation for permanent loss of Section 7 habitats; to include planting/creation of equivalent habitat type, quality and extent (within Welsh Habitat Focal Areas if possible), as appropriate.
- mitigation/compensation for temporary loss of habitat – to include reinstatement and other measures as described above.
- mitigation to minimise impacts to important species through careful alignment, scheduling and/or deterrence and/or exclusion measures as necessary (under licence, if appropriate). Details will depend on the results of further surveys and the detailed design;
- mitigation/compensation for permanent and temporary loss of terrestrial habitat and possible loss of ponds (although loss of ponds will be avoided if possible) used by great crested newt, common toad and potentially reptiles, particularly near to Glascoed Nature Reserve at St Asaph Business Park, and near ponds southeast of Rhyl;
- mitigation/compensation for temporary loss of habitat used by water vole or otter, particularly in northern parts of the preferred cable corridor; and
- “dead hedge” blocking of hedgerow breaches during construction and whilst replacement hedges establish afterward, to minimise barrier effects to bats, dormice and other mobile species, and to enable continued use as a foraging/sheltering resource by dormice, reptiles and breeding birds.

4.4 Potential Opportunities for Biodiversity Enhancements

Further design work for the preferred onshore infrastructure options is ongoing and so detailed development plans are not available at this time and a number of surveys have not yet been undertaken. Therefore, the recommendations listed below to provide nature conservation enhancements and biodiversity net gain, as required under relevant planning policy, are necessarily generic at this stage. The list below is not exhaustive and may change depending on the detailed design of the project, the results of further survey work and land ownership constraints. Full details will be provided in the ES and OEMP.

- planting new species-rich hedgerows, or gap-planting existing hedgerows, with a specific focus on providing habitat for notable species which may be present in the relevant areas, e.g. planting that is rich in dormouse food plants and/or including elm for use by white-letter hairstreak.
- pond and wetland creation and maintenance for use by amphibians, reptiles and water vole.
- new woodland creation and maintenance, to link and/or fortify the existing habitat network, i.e. within Welsh Habitat Focal Areas if possible;

- creation and maintenance of sheltered wildflower meadows and glades, including dry stony areas for use by invertebrates and nesting/foraging bird species;
- creation of reptile and amphibian refugia at field boundaries;
- installation of bird and bat boxes at appropriate trees/woodland; and
- installation of artificial holts and/or water vole platforms adjacent to watercourses.

5.0 Conclusions and Recommendations

This report comprises a PEA of the areas that may be affected by construction and operation of the landfall location, cable corridor and substation for the proposed AyM OWF. A preferred route had not been identified at the time the PEA commenced; this report therefore presents information for three onshore infrastructure options (refer to Drawing 1). However, in January 2021 the preferred landfall, cable corridor and substation zone were decided and as such Section 4 onwards in this report relates only to those options (Landfall 5, Cable Corridor 5, Substation Zone 5, refer to Drawings 7 and 8).

The PEA is informed by desk study and field survey undertaken in summer and autumn 2020. Field survey access was gained to approximately 25% of the Survey Area, with the remainder being assessed via aerial photograph interpretation. Limitations to the desk study and field survey are described within the report but are not considered to significantly affect the conclusions of the PEA.

Important ecological features that are, or could be, present within the Survey Area have been determined and described. Important ecological features that could be impacted by the project, and therefore where further survey is required, are summarised in Table 5-1, with further details provided in Section 4.2. It is also recognised that the potential for air quality impacts to designated sites may need to be assessed. However, this has not been considered here as the details of construction traffic movement and routes is being finalised. This will be assessed separately at a later date.

Table 5-1
Summary of Important Ecological Features and Further Survey Requirements

Important Ecological Feature	Reason for Importance	Further Survey or Desk-based Assessment Required
Y Ffrith, Prestatyn LWS, Bryn Cwnin Wetland LWS and Clwyd Estuary and Adjacent Fields LWS	Non-statutory Designated Sites	These three LWS lie within, or within 100m of the preferred landfall, cable corridor and/or associated construction areas. Habitat survey of areas within 100m of the preferred landfall, cable corridor and associated construction areas that were not accessible in 2020 is therefore proposed, once access is obtained.
Habitats	ASNW and other Section 7 Habitats, plus areas within Welsh Habitat Network Areas	Habitat survey of areas within 100m of the preferred landfall, cable corridor, substation and associated construction areas that were not accessible in 2020. Hedgerow assessment will be undertaken at areas which may be breached.
Plant species	Protected or notable species	Habitat survey of all areas within 100m of the preferred landfall, cable corridor, substation and associated construction areas that were not accessible in 2020 is proposed, once access is obtained. Detailed survey in areas that are known or suspected to support protected or notable plant species, and that

Important Ecological Feature	Reason for Importance	Further Survey or Desk-based Assessment Required
		may be impacted, would be undertaken.
Fish: Atlantic salmon, brown trout, European eel and bullhead	Protected or notable species	The River Clwyd is the only significant water course within the preferred corridor. Existing data will be sought and reviewed to determine whether further information, such as survey data, is required.
Invertebrates	Protected or notable species	Assessment of impacts to this species group will be via habitat-based assessment, focussing on areas where permanent habitat loss is likely and areas that are known or suspected to support potentially important populations of rare/notable species
GCN and common toad	Protected or notable species	Presence/absence and population size class survey undertaken at identified ponds within 250m of of the preferred landfall, cable corridor, substation and associated construction areas, unless suitable existing data are available. Habitat suitability assessment also undertaken of terrestrial habitats.
Reptiles	Protected or notable species	Presence/absence survey undertaken at the substation where permanent loss of suitable habitat may occur.
Breeding Birds	Protected or notable species	Breeding bird survey undertaken at Ffrith Beach / Rhyl Golf Course, Clwyd Estuary and Adjacent Fields LWS / areas of Coastal Floodplain Grazing Marsh and at the Substation Zone. Additional survey for the Schedule 1 species barn owl and kingfisher at suitable habitats within 100m of the preferred cable corridor.
Non-Breeding Birds	Protected or notable species	Wintering bird surveys commenced in October 2020 and will be completed in March 2021. The survey scope and methods were discussed and agreed with the ETG prior to the survey commencing.
Bats	Protected or notable species	Activity survey will be undertaken at hedgerows, woodlands and/or riparian areas which may be removed, illuminated or breached. Preliminary roost assessment will be undertaken at trees within 100m of the preferred landfall, cable corridor, substation and associated construction areas;

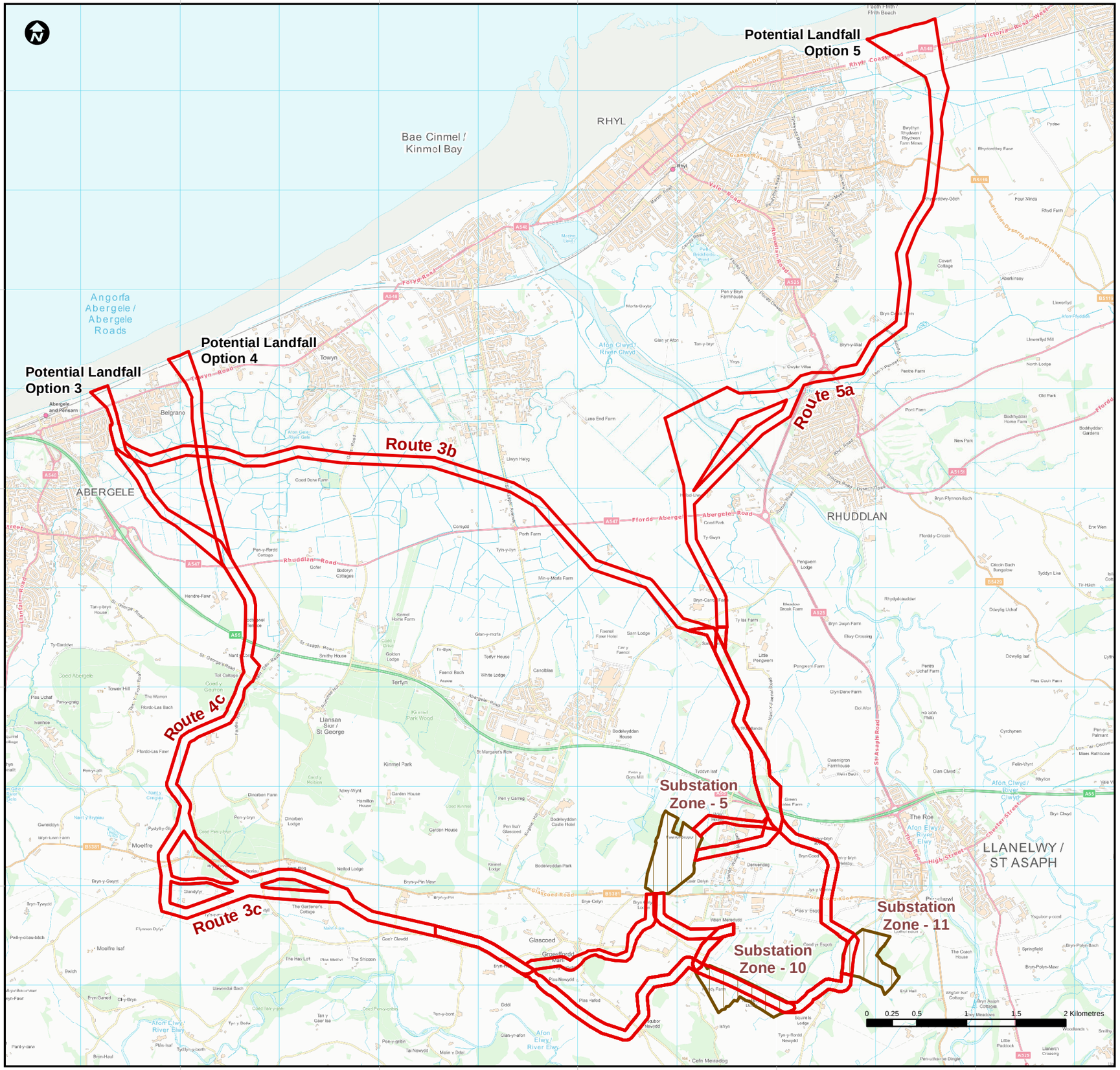
Important Ecological Feature	Reason for Importance	Further Survey or Desk-based Assessment Required
		trees with moderate or high potential to support bats that could be lost or damaged or disturbed would be subject to an at-height PRF inspection (where safe to do so) during the active season (May – September) and further dusk/dawn emergence/return surveys as required. No buildings or structures are to be removed; survey for bats at buildings is therefore not currently proposed.
Badger	Protected or notable species	Survey of all areas within 100m of the preferred landfall, cable corridor, substation and associated construction areas that were not accessible in 2020 is proposed.
Otter	Protected or notable species	Otter survey at suitable watercourses crossing the preferred cable corridor, substation and associated construction areas, plus 250m up and downstream.
Water Vole	Protected or notable species	Water vole survey at suitable watercourses crossing the preferred cable corridor, substation and associated construction areas, plus 200m up and downstream.
Dormouse	Protected or notable species	Hazelnut searches would be undertaken at woodland within the preferred cable corridor, substation and associated construction areas plus surrounding 100m. Nest tube survey would be undertaken at all hedgerows that may be breached south of the A525 and which are potentially suitable for use by dormice.
Other Section 7 Mammal Species: hedgehog, brown hare, polecat.	Protected or notable species	Habitat based assessment will be undertaken for these species and used as a basis for impact assessment. Detailed surveys are not proposed.

A brief outline of the mitigation/compensation requirements that have so far been identified is described within Section 4.3 of the report. The final mitigation/compensation proposals will be subject to detailed, species and location-specific refinement, once all necessary data has been obtained, with full details provided in the ES and OEMP. Measures are likely to include (but are not limited to) compensation for permanent loss of Section 7 habitats; to include planting/creation of equivalent habitat type, quality and extent within Welsh Habitat Focal Areas (where possible) and mitigation to minimise impacts to important species through careful alignment, scheduling and/or deterrence and/or exclusion measures as necessary (under licence, if appropriate). Details will depend on the results of further surveys and the detailed design.

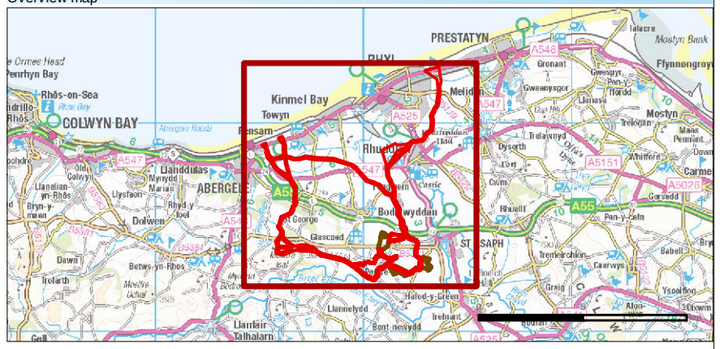
Possible biodiversity enhancements are also suggested and include planting of species rich hedgerows, pond, wetland and wildflower meadow creation, creation of reptile/amphibian refugia and installation of bird and bat boxes. The list of enhancements is likely to change depending on the detailed design of the project, the results of further survey work and land ownership constraints. Full details will be provided in the ES and OEMP.

DRAWING 1

Landfall, Route Corridor and Substation Options



Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Landfall, Route Corridor and Substation Options**

DRAWN	DATE	SCALE	SIZE
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DRAWING 2

Field Survey & Aerial Photograph Interpretation Extents

303000 304000

383000

382000

381000

Traeth Ffrith / Ffrith Beach

Route 5a

The Cut

Education Facility

Bwythyn Rhydwen / Rhydwen Farm Mews

Rhydorddwy Fawr

Rhydorddwy-Gôch

Four Winds

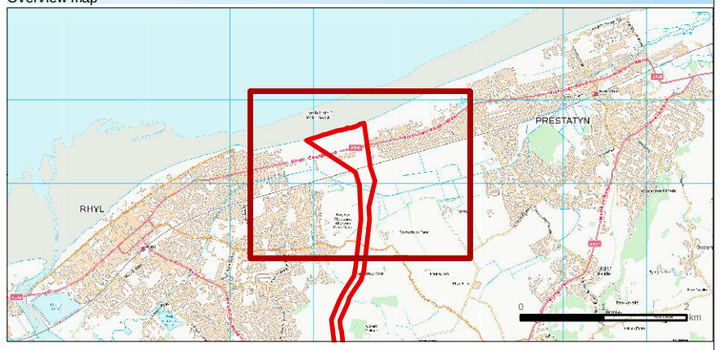
Rhyd Farm

Pydew

0 100 200 400 600 800 Metres

303000 304000

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary** **Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 1 of 17**

DRAWN	DATE	SCALE	SIZE
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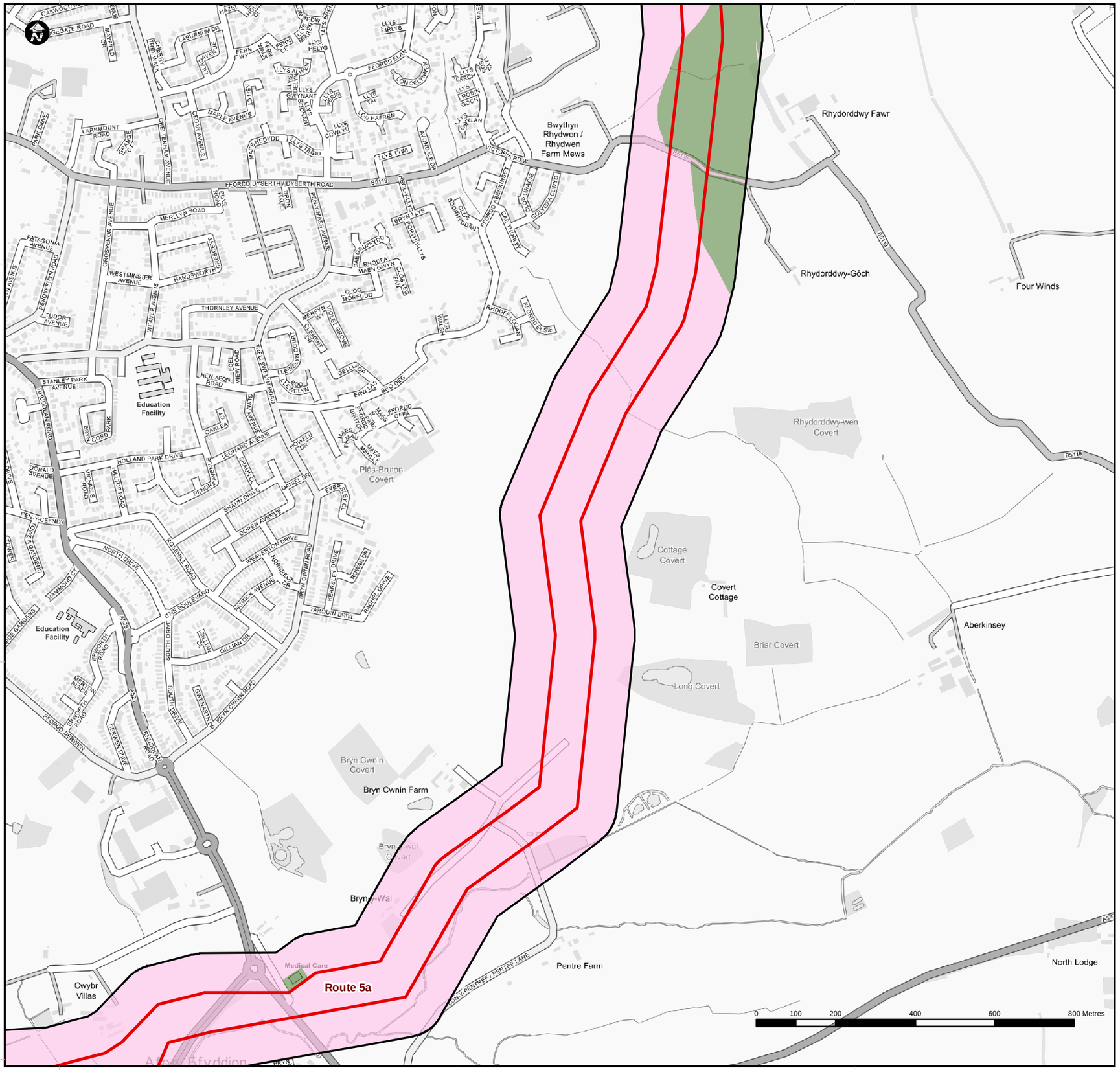

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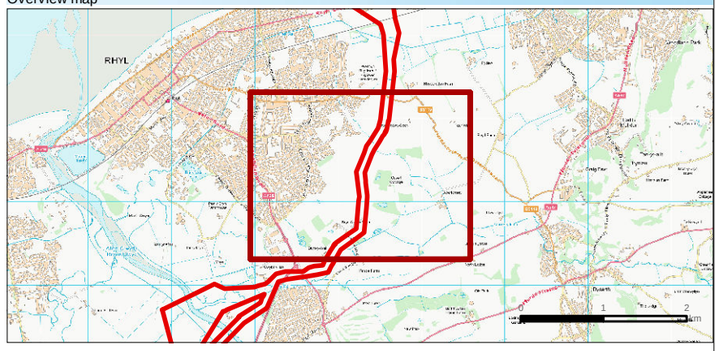

Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
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NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 2 of 17**

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301000 302000 303000

380000

379000

378000

Education Facility

Education Facility

Education Facility

Morfe-Cwybr

Pen y Bryn Farmhouse

Tan-y-bryn

Glan yr Afon

Ynys

Cwybr Villas

Bryn Cwnin Covert

Bryn Cwnin Farm

Bryn-y-Wal Covert

Bryn-y-Wal

Medical Care

Pentre Farm

Pont Faen

RHUDDLAN

Route 5a

Unknown

Hafod-Lwyn

Coed Park

Castle Wood

Library

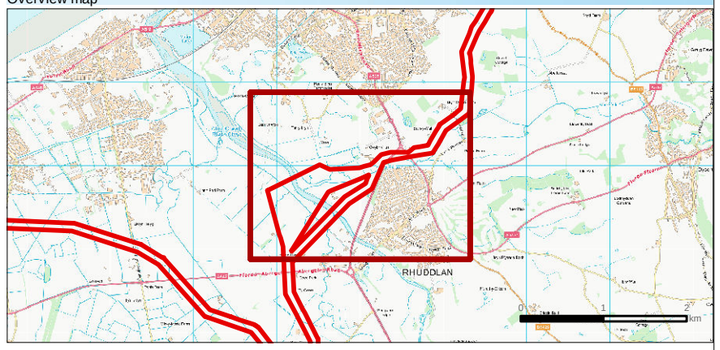
Police Station

Education Facility

0 100 200 400 600 800 Metres

301000 302000 303000

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 3 of 17**

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300000 301000 302000

378000 377000 376000

RHUDDLAN

Route 5a

Route 3b

Unknown

Hafod-Lwyn

Coed Park

Ty-Gwyn

Meadow Brook Farm

Pengwern Lodge

Bryn Carrog Farm

Ty isa Farm

Education Facility

Pengwern Farm

Bryn Gwyn Farm

Sarn Lodge

Sarn Larches

Faenol Fawr Hotel

Ger y Faenol

Hospital

Little Pengwern

Castle Wood

Education Facility

Library

Police Station

PW

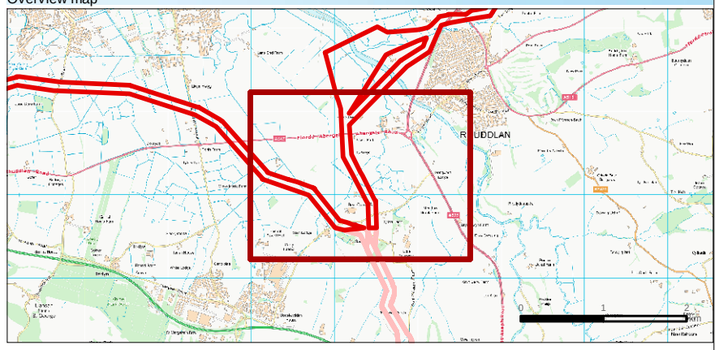
PO

A547 / FFORDD ABERGELE / ABERGELE ROAD

A525

0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary** **Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 4 of 17**

DRAWN	DATE	SCALE	SIZE
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295000 296000 297000

379000

378000

Angorfa
Abergele /
Abergele
Roads

Route 4c

Route 3b

Route 3c

Belgrano

Abergele
and Pensarn

Pensarn

Afon Gele /
River Gele

Coed

Education
Facility

Medical Care

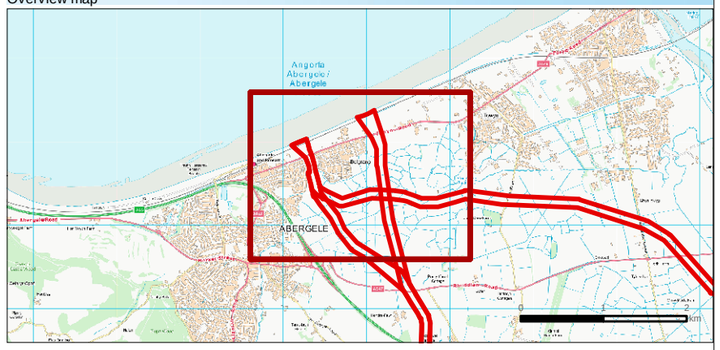
Sports/Leisure
Centre

Pen-y-ffordd
Cottage

0 100 200 400 600 800 Metres

295000 296000 297000

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary** **Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 5 of 17**

DRAWN	DATE	SCALE	SIZE
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297000 298000 299000

379000

378000

377000

Afon Gele / River Gele

Route 3b

Liwyn Helyg

Gors Wood

Coed Derw Farm

Porth Farm

Corsydd

Gofer

Bodoryn Cottages

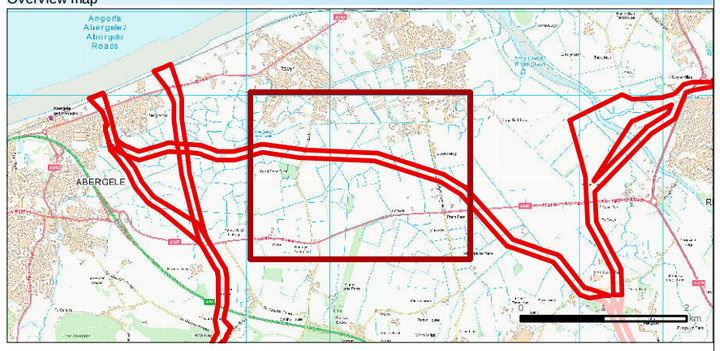
Ty'n-y-llyn

Min-y-Morfa Farm

Coed Bodtegwal

0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 6 of 17**

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299000 300000 301000

378000

377000

Lane End Farm

Llwyn Helyg

Route 3b

Unknown

Route 5a

Coed Park

Porth Farm

A547 FFORDD ABERGELE / ABERGELE ROAD

Ty-Gwyn

PW

Ty'n-y-llyn

Min-y-Morfa Farm

Bryn Carrog Farm

Ty'n-sa Farm

Glan-y-morfa

Sarn Lodge

Sarn Larches

Terfyn House

Faenol Fawr Hotel

Ger y Faenol

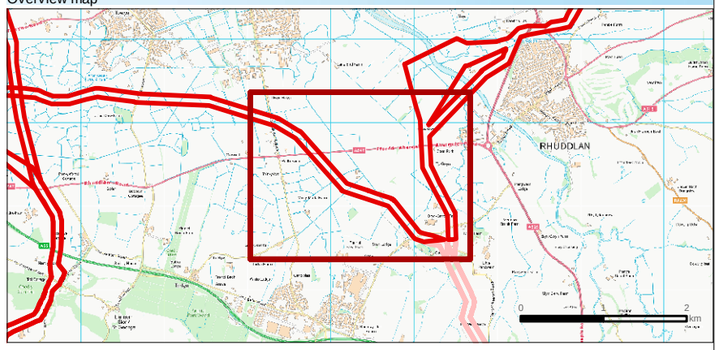
Hospital

Canolblas

0 100 200 400 600 800 Metres

299000 300000 301000

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 7 of 17**

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296000 297000

378000

377000

376000

Route 3b

Route 3b

Route 3b

Route 4c

Route 3c

Gors Wood

Coed Derw Farm

Education Facility

Education Facility

RHUDDLAN ROAD

A547

A55

Pen-y-ffordd Cottage

Gofer

Bodoryn Cottages

GORS ROAD

MAES Y FEYNNON

ST GEORGE ROAD

Hendre-Fawr

Coed Bodtegwal

Tan-y-bryn House

FFORDD Y BERTH

ST GEORGE ROAD

Bodtegwel Terrace

TAN Y FRON ROAD

ST ASAPH ROAD

Nant y Corn

ST GEORGES ROAD

Smithy House

Coed Nant-ddu

Toll Cottage

Coed y Geufron

Tower Hill

The Warren

Education Facility

PW

PW

Primrose Hill Wood

Ffordd-Las Bach

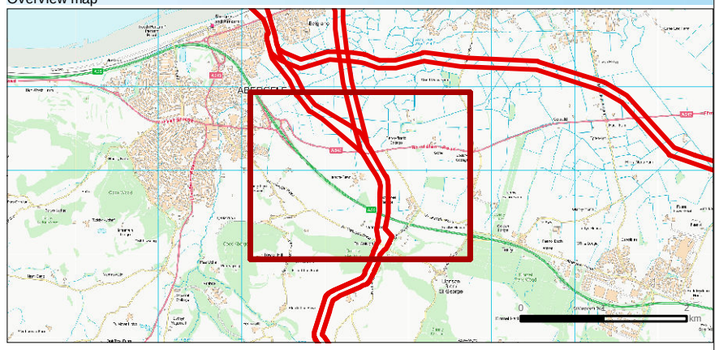
Llansan Sior / St George

0 100 200 400 600 800 Metres

Coed Parc-y-meirch

296000 297000

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary** **Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 8 of 17**

DRAWN	DATE	SCALE	SIZE
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295000 296000 297000

376000

375000

House

Ty-Garddwr

Coed Abergele

Tower Hill

Pen-y-graig

Uchaf

Hospital

PW

Ffordd-Las Bach

The Warren

Ffordd-Las Fawr

Pen-yr-allt

Nant y Corn

Bodtegwel Terrace

Coed Nant-ddu

Ty Cottage

Coed y Geufron

Llansan Sior / St George

Coed Parc-y-meirch

Coed Ty-croes

Coed y Meibion

Dinorben Farm

Pen-y-bryn

Dinorben Lodge

Coed Pen-y-bryn

Nant y Creigiau

Nant y Bryniau

Gwreiddyn

Pystyll-y-Clo

Moelfre

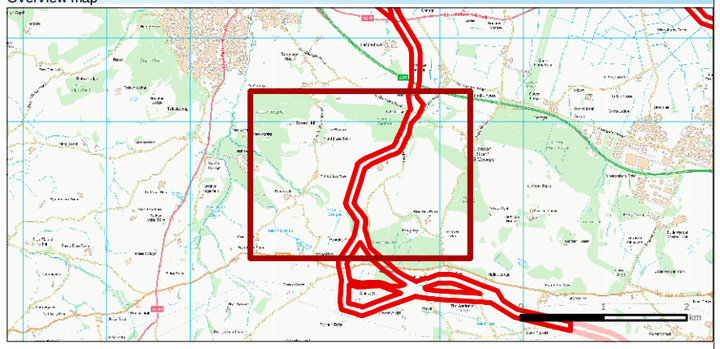
Bryn-Tirion

Sarn-Rûg

Route 3c Route 4c

0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

	PROJECT Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 9 of 17**

DRAWN	DATE	SCALE	SIZE
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295000 296000 297000

375000

374000

373000

Pen-yr-allt

Nant y Creigiau

Nant y Bryniau

Gwreiddyn

Pystyll-y-Glo

Moelfre

B5381

PW

Coed y Melbion

Dinorben Farm

Pen-y-bryn

Dinorben Lodge

Coed Pen-y-bryn

Bryn-Tirion

Sarn-Rüg

Coed Cae-môc

Route 4c

Route 3c

Coed Nant-Melfod

Bryn-y-Gwynt

Glandyfyr

Coed Ffrith-y-gwynt

Tyn-y-mynydd

Pistyll

The Gardener's Cottage

Ffynnon-Dyfyr

Moelfre Isaf

The Hay Loft

Plas Melfod

Bwlch

Coed Ty Brown

Llawendai Bach

Coed Bron-haul

Bryn Ganed

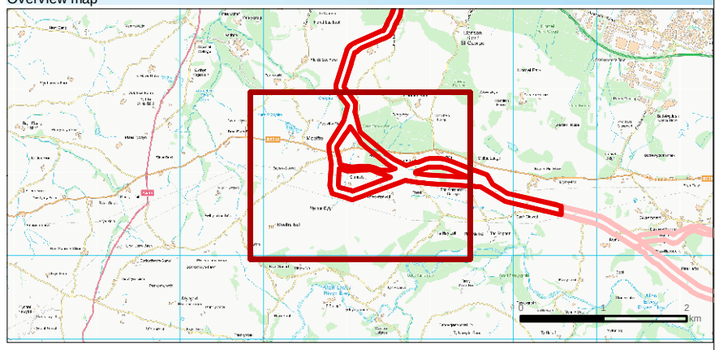
Cil-y-Bryn

Coed Tan-y-gaer

0 100 200 400 600 800 Metres

295000 296000 297000

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 10 of 17**

DRAWN	DATE	SCALE	SIZE
jsalter	02/02/2021	1:10,000	@DIN A3

DRAWING No.	REV
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297000 298000 299000

375000

374000

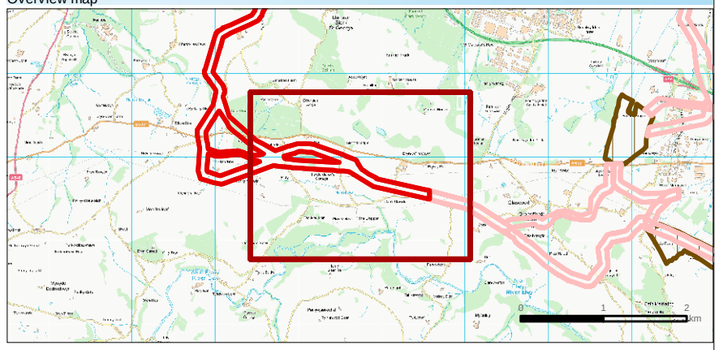
373000

Coed y Meibion
Adwy-Wynt
Dinorben Farm
Garden House
Hamilton House
Coed Kinmel
Pen-y-bryn
Dinorben Lodge
Garden House
Coed y Waen
Bryn-Tirion
Sarn-Rûg
Coed Cae-môch
The Rookery
Meifod Lodge
Route 3c
Coed Nant-Meifod
Coed Bryn-y-pin
Bryn-y-Pin Mawr
Bryn-y-Pin
Route 4c
Tyn-y-mynydd
Pistyll
The Gardener's Cottage
Nant-Luke
Cae'r Clawdd
The Hay Loft
Plas Meifod
The Shippon
Llawendai Bach
Coed Bron-haul
Coed Tan-y-gaer
Coed Pen-y-gribin
Tan y Gaer Isa
Pen-y-bont
Tyn y Bedw

0 100 200 400 600 800 Metres

297000 298000 299000

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 11 of 17**

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377000

376000

375000

Route 3b

Route 5a

Substation Zone - 5

Meadow Brook Farm

Bryn Carrog Farm

Ty Isa Farm

Education Facility

Pengwern Farm

Bryn Gwyn Farm

Sarn Lodge

Sarn Wood

Sarn Larches

Ger y Faenol

Little Pengwern

Glyn Derw Farm

Hospital

Coed Ty-mawr

The Woodlands

Bodelwyddan House

Tyddyn Isaf

Felin y Gors Mill

Gwernigron Farmhouse

Medical Care

Wern Bach

Princes Gorse

Faenol-bropor

Green Gates Farm

Coed Faenol-bropor

Alder House

Flynnon Gwenffrwd

Coed Gors

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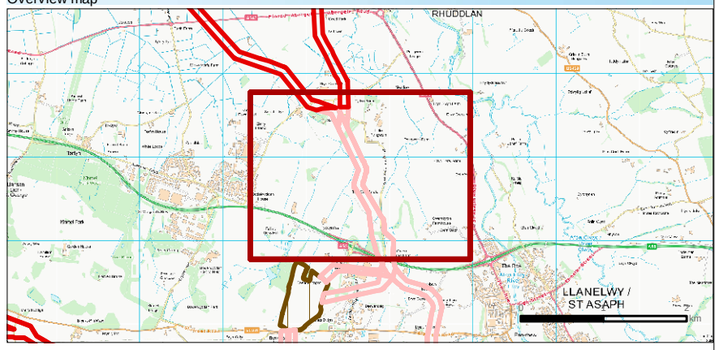
Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 12 of 17**

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375000

374000

373000

Bodelwyddan House

PW PW

WELCH AVENUE

A55

Tyddyn Isaf

Felin y Gors Mill

The Woodlands

Prince's Gorse

Green Gates Farm

Bodelwyddan Castle Hotel

Coed y Gors

Ffynnon Gwenffrwd

The Plantation

Bodelwyddan Park

Substation Zone - 5

Bryn Coed

Bryn-Celyn

Bryn Celyn Lodge

GLASCOED ROAD B5381

Caer Drelyn

Llys y Wernol

Derwendeg

Plas yr Esgob

Waen Meredydd

Education Facility

Glascoed

Groesffordd Marli

Carreg-Dafydd

Plas-Newydd

Hendy Gorse

Coed Cord

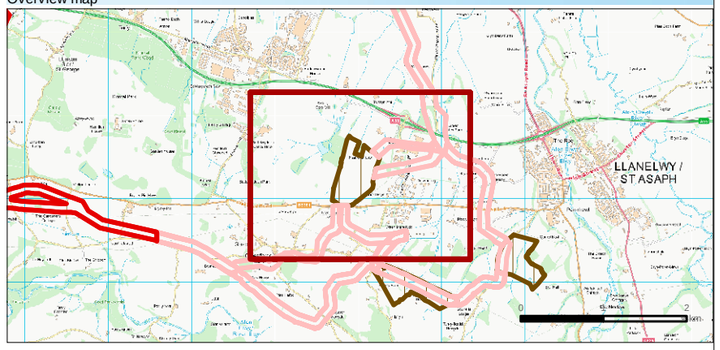
Coed y Saeson

Substation Zone - 10

Hendy Farm

0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 13 of 17**

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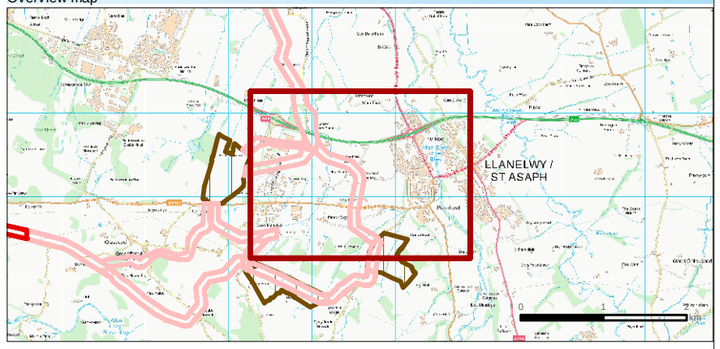
375000 374000 373000

The Woodlands
Tyddyn Isaf
Princes Gorse
Faenol-bropor
Coed Faenol-bropor
Alder House
Substation Zone - 5
Gwernigron Farmhouse
Medical Care
Wern Bach
Glan Clwyd
Green Gates Farm
Education Facility
The Roe
Education Facility
Library
Fire Station
Pen-y-bryn Uchaf
Pen-y-bryn Helsby
Bryn Coed
Caer Dulyn
Llys y Wennol
Derwendeg
Plas yr Esgob
Waen Meredydd
Hendy Gorse
Coed Cord
Coed y Saeson
Coed Esgob
Coed yr Esgob
Square Covert
Substation Zone - 11
Substation Zone - 10
Hendy Farm
Pen-rhewl
Cornel Bach
Wigfa
Isaf Cott

0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

	PROJECT Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 14 of 17**

DRAWN	DATE	SCALE	SIZE
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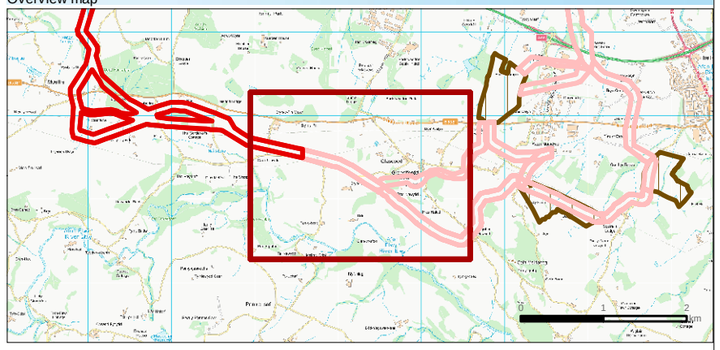
374000 373000 372000

Garden House
Pen Isa'r Glascoed
Elcong Hill
Flynnon Gwenffrwd
The Plantation
Bodelwyddan Park
The Rookery
Kinmel Lodge
Coed Bryn-y-pin
Bryn-y-Pin Mawr
Bryn-y-Pin
B5381
Bryn-Celyn
Bryn Celyn Lodge
GLASCOED ROAD
Route 3c
Route 4c
Cae'r Clawdd
Education Facility
Glascoed
Groesffordd Marli
Coed Carreg-Dafydd
Carreg-Dafydd
Coed Plas-Newydd
Bryn-Hên
Plas-Newydd
Coed y Ddôl
Plas Hafod
Coed Pen-y-gribin
Ddôl
Coed y Fadir
Pen-y-bont
Glan-yr-afon
Melin y Ddol
Tai Newydd
Pen-y-gribin
Coedwig
Myfoniog
Ty'n-y-coed
Ty-Uchaf
0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents Page 15 of 17**

DRAWN	DATE	SCALE	SIZE
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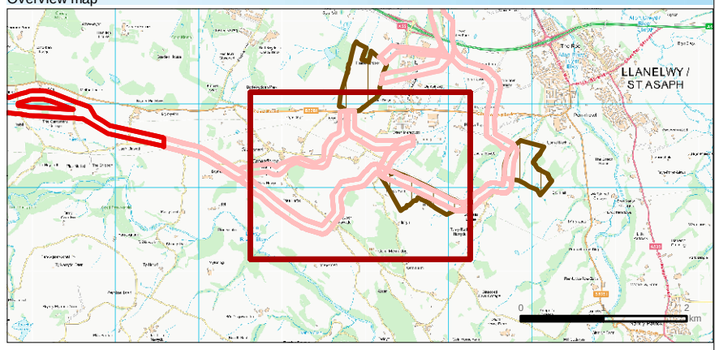
300000 301000 302000

374000 373000 372000

The Plantation
Bodelwyddan Park
Substation Zone - 5
Bryn-Celyn
Bryn Celyn Lodge
GLASCOED ROAD B6381
LLYS EDMUND PRYS
Caer Dalyn
NEW VISCOR BUSINESS PARK
OUTER LANE
Derwendeg
Llys y
Plas yr Esgob
Waen Meredydd
Education Facility
Glascoed
Groesffordd Marli
Coed Carreg-Dafydd
Carreg-Dafydd
Plas-Newydd
Plas Hafod
Coed y Fadir
Hendy Gorse
Coed Cord
Coed y Saeson
Substation Zone - 10
Tan y Bryn Uchaf
Coed yr Odyn
Ysgubor Newydd
Coed Celyn
Isfryn
Tyn-y-ffordd Newydd
Cefn Meiriadog
Coedwig
Tan-y-graig
Cefn Farm
Ty'n-y-coed
0 100 200 400 600 800 Metres

Overview map



Legend

- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 16 of 17**

DRAWN	DATE	SCALE	SIZE
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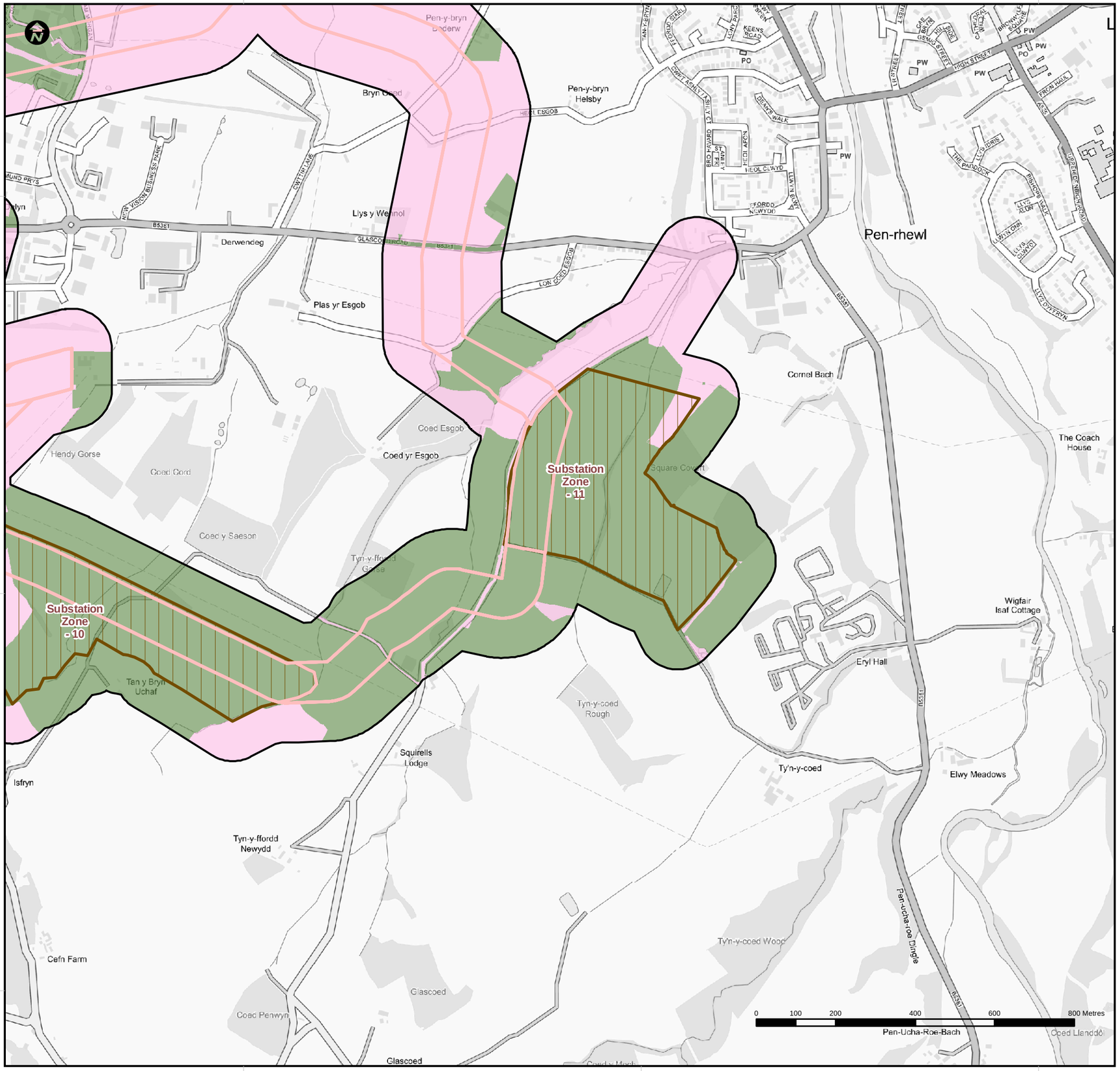

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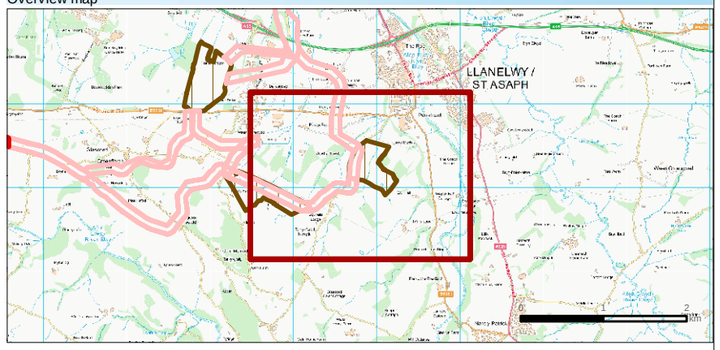

Legend

- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- Habitat Survey Area
- Field Survey Undertaken
- Aerial Photograph Interpretation

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Field Survey and Aerial Photograph Interpretation Extents** **Page 17 of 17**

DRAWN	DATE	SCALE	SIZE
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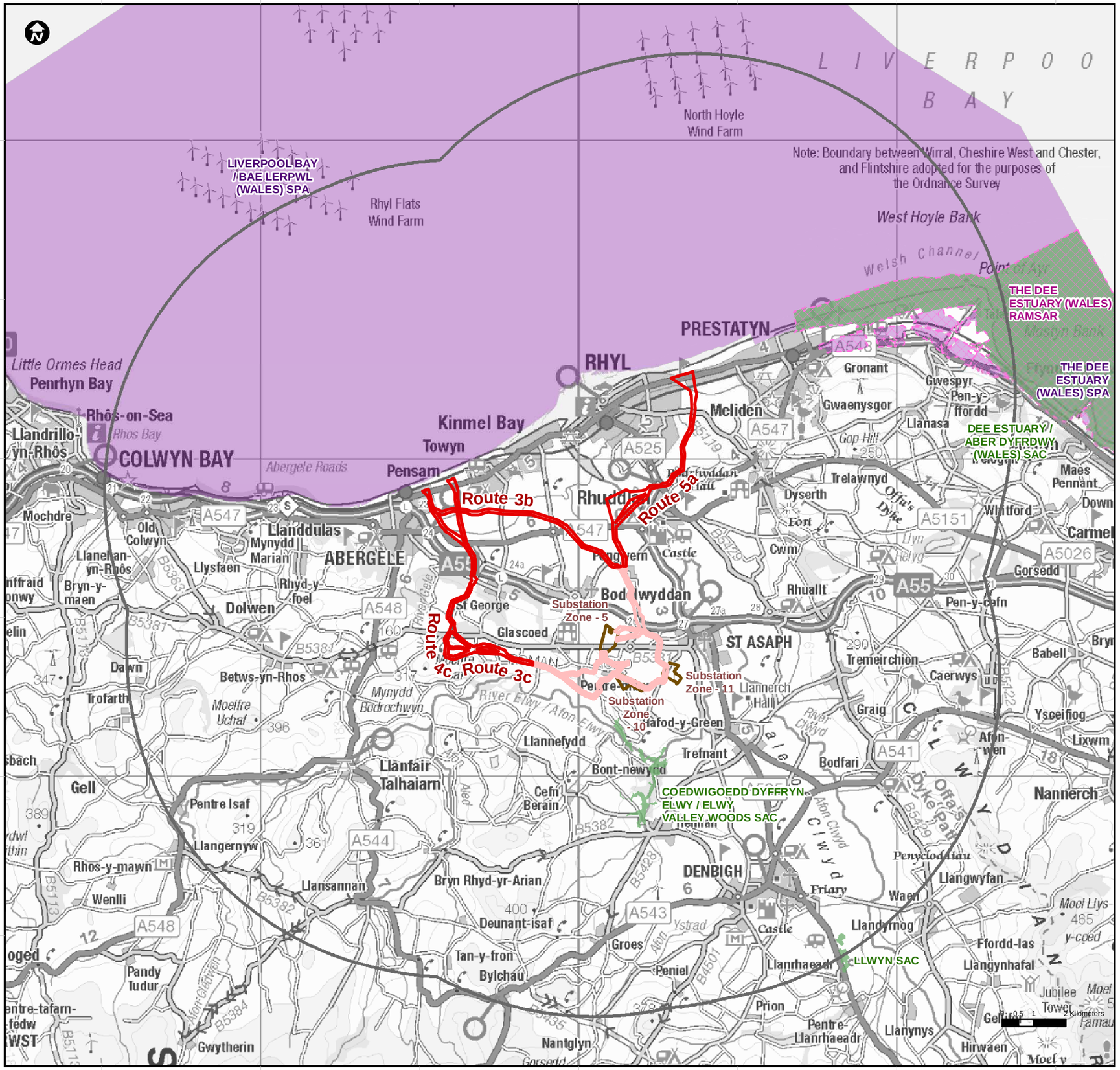
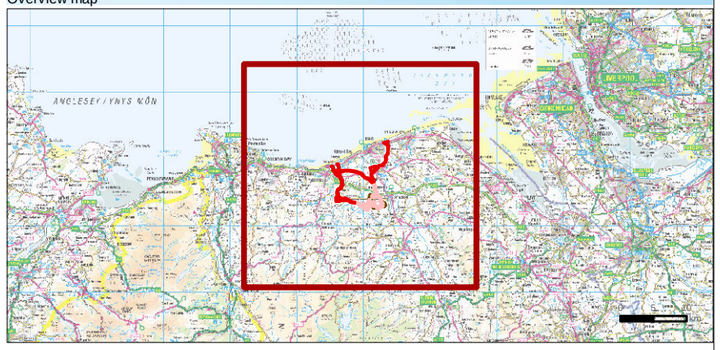
DRAWING 3

Designated Sites Plan



Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- 10km Buffer of Cable Corridor
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Ramsar

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Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary** **Ecological Appraisal**
TITLE	**Designated Sites Plan** **Page 1 of 7**

DRAWN	DATE	SCALE	SIZE
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295000 300000 305000

385000 380000 375000 370000

GRONANT DUNES AND TALACRE WARREN SSSI

GRONANT DUNES LNR

DEE ESTUARY / ABER AFON DYFRDWY SSSI

D011: Y FFRITH, PRESTATYN

PRESTATYN

PRESTATYN HILLSIDE SSSI

RHYL

Bae Cinmel / Kinmel Bay

KINMEL DUNES LNR

BRICKFIELDS POND LNR

GRAIG FAWR SSSI

D021: BRYN CWNIN WETLAND

MAES HIRADDUG SSSI

Angorfa Abergele / Abergele

97/65: NORTH WALES HOLIDAY CAMP

D001: CLWYD ESTUARY AND ADJACENT FIELDS

TRAETH PENSARN SSSI

97/69: PWLL TOWYN WAY

97/105: ABERGELE GRAZING MARSH

97/41: AFON GELE

LLANDDULAS LIMESTONE AND GWRYCH CASTLE WOOD SSSI

Route 5a

Route 3b

97/33: COED GORS

97/35: MORFA RHUDDLAN

ABERGELE

RHUDDLAN POND LNR

RHUDDLAN

MOEL HIRADDUG A BRYN GOP SSSI

COED Y GOPA SSSI

97/26: COED Y GEUFRON

97/77: COED NANT DDU

Substation Zone - 5

97/97: PWLL COED CAE MACH

LLANELWY / ST ASAPH

D003/1: PLAS NEWYDD/COED CARREG DAFYDD

D032: COED CORD / COED Y SAESON

97/92: MOELFRE ISAF HEATH FRAGMENTS

Route 3c

Route 4c

Substation Zone - 10

D033: COED FRON AND ERYL HALL WOOD

Substation Zone - 11

D034: TY'N-Y-COED ROUGH (2 AREAS)

D003: COED Y DDOL/COED Y FADIR

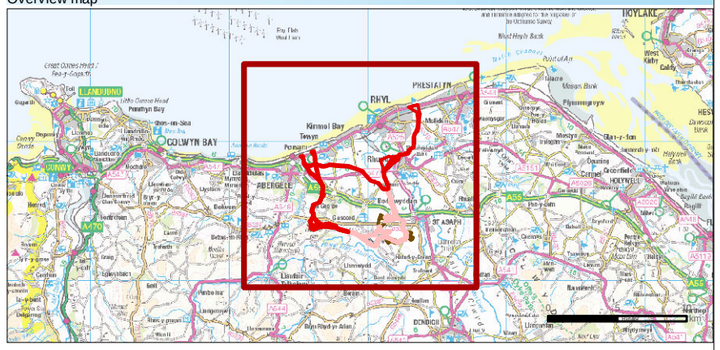
D035: BRYN MEIRIADOG

COEDYDD DERW ELWY SSSI

COEDYDD AC OGOFAU ELWY A MEIRCHION SSSI

0 0.5 1 2 Kilometers

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- 2km Buffer of Cable Corridor
- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Local Wildlife Site

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Cartographic information

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Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Designated Sites Plan** **Page 2 of 7**

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295000

380000

Bae Cinmel / Kinmel Bay

LIVERPOOL BAY / BAE LERPWL (WALES) SPA

KINMEL DUNES LNR

D001: CLWYD ESTUARY AND ADJACENT FIELDS

Angorfa Abergele / Abergele Roads

97/65: NORTH WALES HOLIDAY CAMP

97/69: PWLL TOWYN WAY

97/41: AFON GELE

TRAETH PENSARN SSSI

97/105: ABERGELE GRAZING MARSH

97/33: COED GORS

97/35: MORFA RHUDDLAN

Route 3b

Route 4c

Route 3c

LLANDDULAS LIMESTONE AND GWRYCH CASTLE WOOD SSSI

COED Y GOPA SSSI

97/77: COED NANT DDU

97/26: COED Y GEUFRON

ABERGELE

Towyn

Abergele and Pensarn

Belgrano

Llanddulas

Rhuddlan

Kinmel Bay

Terfyn

Llansan Sior / St George

Kinmel Park

Kinmel Park Wood

Coed Abergele

Tower Hill

Forynd Road

Towyn Road

Market Street

Rhuddlan Road

St Asaph Road

Abergele Road

Llanfair Road

St George Road

Sea Road

Castle Cove

Ty Crwn

Traeth Pensarn / Pensarn Beach

Llwyn Helyg

Porth Farm

Ty'n-y-llyn

Kinmel Home Farm

Glan-y-morfa

Golden Lodge

Smithy House

Tir-Byw

Terfyn House

White Lodge

Faenol Bach

Arawa

Hendre-Fawr

Tan-y-bryn House

Ty-Garddwr

Nant y Bella

Hafan

Tyddyn Uchaf

Mountain Lodge

Twll-Llwynog

Nantnewydd

Plas Uchaf

Pen-y-graig

Ivanhoe

Squirrel Cottage

Ty-Mawr-Ucha

Bwthyn Ysgeinallt

Pen-yr-allt

Ffordd-Las Fawr

Ffordd-Las Bach

The Warren

Tan-y-Fron Road

Afon Gele / River Gele

Bodoryn Cottages

Gofer

Pen-y-floed Cottages

Coroydd

Llwyn Ifan Farm

Toll Cottage

Nant y Corn

Bodtegan Terrace

Bodfaen Avenue

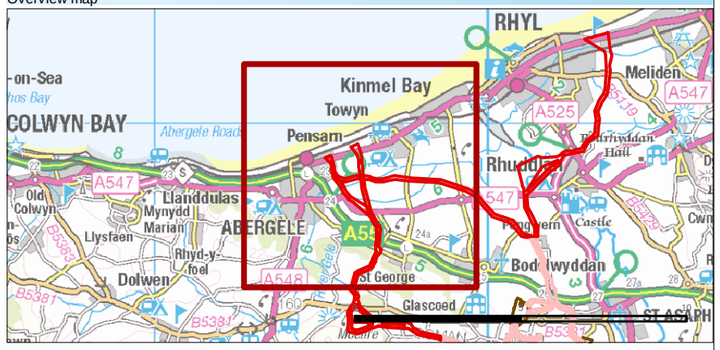
Prospect Hill

Primrose Hill

Coed y Drive

0 0.5 1 2 Kilometers

Overview map



Legend

- Potential Onshore Cable Corridor
- 2km Buffer of Cable Corridor
- Special Protection Area (SPA)
- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Local Wildlife Site

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Cartographic information

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Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Designated Sites Plan** **Page 3 of 7**

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300000 305000

385000

380000

LIVERPOOL BAY / BAE LERPWL (WALES) SPA

D011: Y FFRITH, PRESTATYN

Traeth Ffrith / Ffrith Beach

PRESTATYN

Victoria Road West

Rhyl Coast Road

A548

RHYL

Marine Drive

Rhyl

Marsh Road

Grange Road

Rhuddlan Road

A525

BRICKFIELDS POND LNR

Pen y Bryn Farmhouse

Morfa-Cwybr

D021: BRYN CWNIN WETLAND

Bryn-y-Wal

Bryn Cwnin Farm

D001: CLWYD ESTUARY AND ADJACENT FIELDS

Afon Clwyd

Ynys

Cwybr Villas

Route 5a

Lane End Farm

Pentre Farm

Pont Faen

Bwythyn Rhycwen / Rhycwen Farm Mews

Rhycorddwy Fawr

Pydew

B5119

Rhycorddwy-Gôch

Four Winds

Rhyd Farm

Ffordd-Dyserth

Dyserth Road

Covert Cottage

Aberkinsey

Lleweirlyd

Afon-Ffydd'on

Lleweirlyd Mill

North Lodge

Old Park

New Park

Bodrhyddan Gardens

Ffordd-Talargoch

GRAIG FAWR SSSI

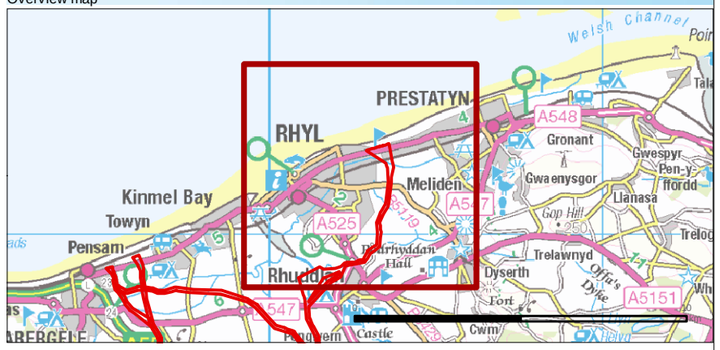
MAES HIRADDUG SSSI

MOEL HIRADDUG A BRYN GOP SSSI

Ffordd-Ffrai

0 0.5 1 2 Kilometers

Overview map



Legend

- Potential Onshore Cable Corridor
- 2km Buffer of Cable Corridor
- Special Protection Area (SPA)
- Sites of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)
- Local Wildlife Site

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Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

SLR

PROJECT	Offshore Windpark **Awel y Mor Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Designated Sites Plan** **Page 4 of 7**
DRAWN	jsalter
DATE	02/02/2021
SCALE	1:25,000
SIZE	@DIN A3
DRAWING No.	**Drawing 3**
REV	01

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295000 300000

375000

COED Y GRAIG SSSI

97/77: COED NANT DDU

97/26: COED Y GEUFRON

97/97: PWLL COED CAE MACH

97/92: MOELFRE ISAF HEATH FRAGMENTS

D003/1: PLAS NEWYDD/COED CARREG DAFYDD

D003: COED Y DDOL/COED Y FADIR

Route 4c

Route 3c

Terfyn

Llansan Sior / St George

Moelfre

Pentre Isaf

Llannefydd

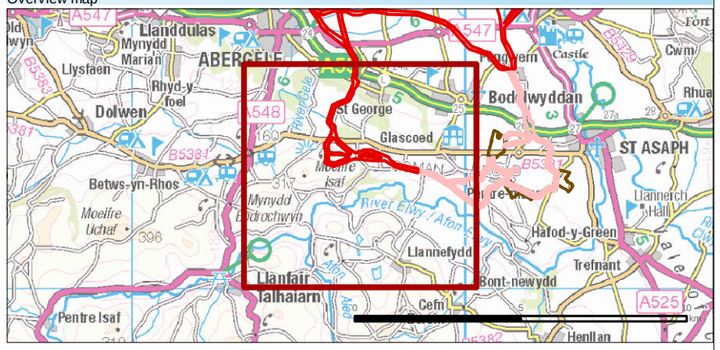
Glascoed

Afon Elwy / River Elwy

0 0.5 1 2 Kilometers

295000 300000

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- 2km Buffer of Cable Corridor
- Sites of Special Scientific Interest (SSSI)
- Local Wildlife Site

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300000 305000

380000

375000

D021: BRYN CWNIN WETLAND

D001: CLWYD ESTUARY AND ADJACENT FIELDS

97/35: MORFA RHUDDLAN

RHUDDLAN POND LNR

RHUDDLAN

LLANELWY / ST ASAPH

Route 5a

Route 3b

Route 3c

Substation Zone - 5

Substation Zone - 11

D032: COED CORD / COED Y SAESON

Afon Clwyd / River Clwyd

Afon Elwy / River Elwy

Ffordd Abergele

Abergele Road

Glascoed Road

St Asaph Road

Chester Street

High Street

The Roe

Princes Road

Dyserth Road

Ffordd Derwen

Ffordd-Ffrd

Pen y Bryn Farmhouse

Morfa-Cwybr

Glan yr Afon

Afon Clwyd / River Clwyd

Ynys

Cwybr Villas

Bryn Cwnin Farm

Bryn-y-Wal

Llewerllyd

Llewerllyd Mill

North Lodge

Pentre Farm

Old Park

Pont Faen

Bodrhyddan Home Farm

Bodrhyddan Gardens

New Park

Bryn Ffynnon Bach

Lane End Farm

Llwyn Helyg

Hirfod-Llwyn

Coed Park

Ty-Gwyn

Porth Farm

Ty'n-y-llyn

Min-y-Morfa Farm

Pengwern Lodge

Ffordd-y-Criccin

Criccin Bach Bungalow

Tydcyn Like

Erw Wen

Islan Cottage

Tir-Hwch

Rhydyddauddwr

Dowylig Uchaf

Bryn-Carrog Farm

Ty Isa Farm

Meadow Brook Farm

Bryn Gwyn Farm

Elwy Crossing

Glan-y-morfa

Faenol Fawr Hotel

Sarn Lodge

Ger y Faenol

Little Pengwern

Pengwern Farm

Pentre Uchaf Farm

Ddwylig Isaf

Cyffredin

Plas Coch Farm

Tir-Dyw

Terfyn House

Faenol Bach

White Lodge

Arawa

Canolblas

Glyn Derw Farm

Dol Afon

Rc Sion Philip

Bodelwyddan House

St Margaret's Row

Tyddyn Isaf

Felin y Gors Mill

Gwernigron Farmhouse

Wern Bach

Glan Clwyd

Cyrchynen

Pen-y-Palmant

Felin-Wynt

Rhyllon

Vale View

Bryn Clwyd

Pen y Garreg

Coed Kinmel

Bodelwyddan Castle Hotel

Pen Isa'r Glascoed

Kinmel Lodge

Bodelwyddan Park

Alder House

Green Gates Farm

Faenol-Broper

Bryn Coed

Derwendeg

Caer Delyn

Bryn-y-Pin

Bryn-Celyn

Bryn Celyn Lodge

Waen Meredydd

Plas yr Esgo

Cornel Bach

Pen-rhewl

Ysgubor-y-coed

Aberkinsey

Afon Ffyddion

Rhuallt

Tremeirchion

Caerwys

Graig

Melidan

Kinmel Bay

Towyn

Pensarn

ABERGELE

ST ASAPH

Rhuddlan

Bodrhyddan Hall

Rhuddlan Castle

Dyserth

Trelawnyd

Cwm

St George

Glascoed

Mynydd Bodrochwyn

Llanasa

Gwaenysgor

Overview map

Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- 2km Buffer of Cable Corridor
- Local Nature Reserve (LNR)
- Local Wildlife Site

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TITLE	**Designated Sites Plan** **Page 6 of 7**

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300000 305000

375000

Route 3b

Route 5a

Route 4c

D001: CLWYD ESTUARY AND ADJACENT FIELDS

D003/1: PLAS NEWYDD/COED CARREG DAFYDD

D003: COED Y DDOL/COED Y FADIR

D032: COED CORD / COED Y SAESON

D033: COED FRON AND ERYL HALL WOOD

D034: TY'N-Y-COED ROUGH (2 AREAS)

D035: BRYN MEIRIADOG

Substation Zone - 5

Substation Zone - 10

Substation Zone - 11

COEDYDD AC OGOFAU ELWY A MEIRCHION SSSI

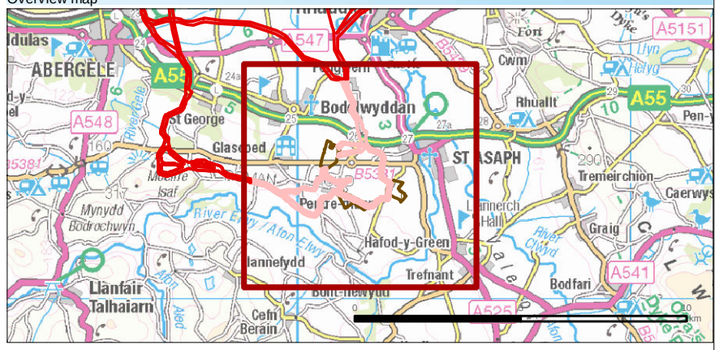
COEDWIGOEDD DYFFRYN ELWY / ELWY VALLEY WOODS SAC

LLANELWY / ST ASAPH

0 0.5 1 2 Kilometers

300000 305000

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Onshore Substation Cable Corridor
- Potential Substation Zone
- 2km Buffer of Cable Corridor
- Special Area of Conservation (SAC)
- Sites of Special Scientific Interest (SSSI)
- Local Wildlife Site

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TITLE	**Designated Sites Plan** **Page 7 of 7**

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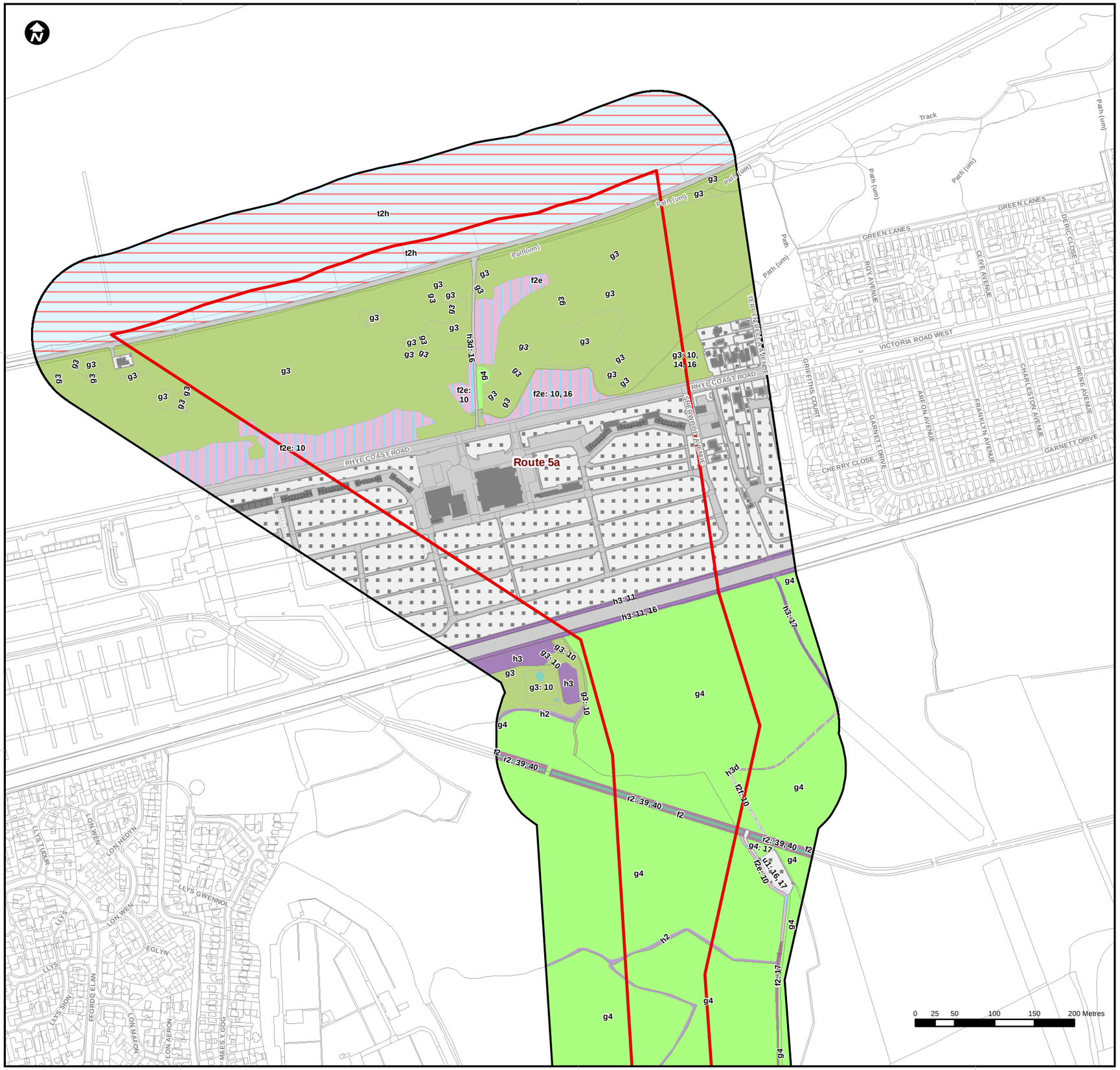
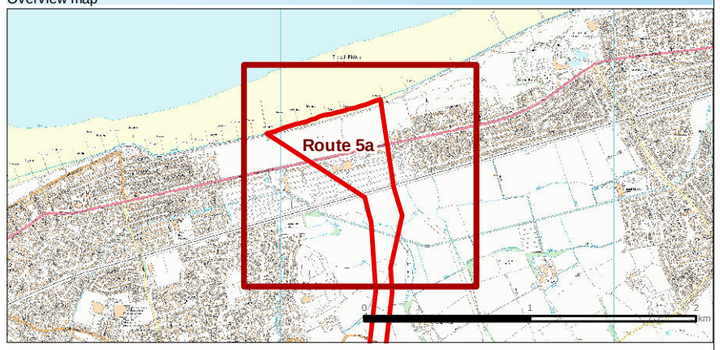
DRAWING 4

Habitat Plan



Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Grassland - Neutral Grassland
- g3 - Neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub
- h3d - Bramble scrub

Marine Inlets and Transitional Waters - Littoral Sediment
- t2h - Beach

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp
- f2e - Reedbeds
- f2f - Other swamps

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 1 of 25**

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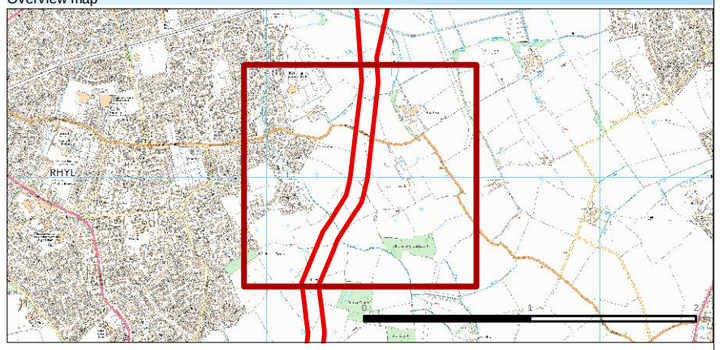
Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland
- c1c - Cereal crops

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1b - Developed land; sealed surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f7 - Other Lowland mixed deciduous woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 2 of 25**

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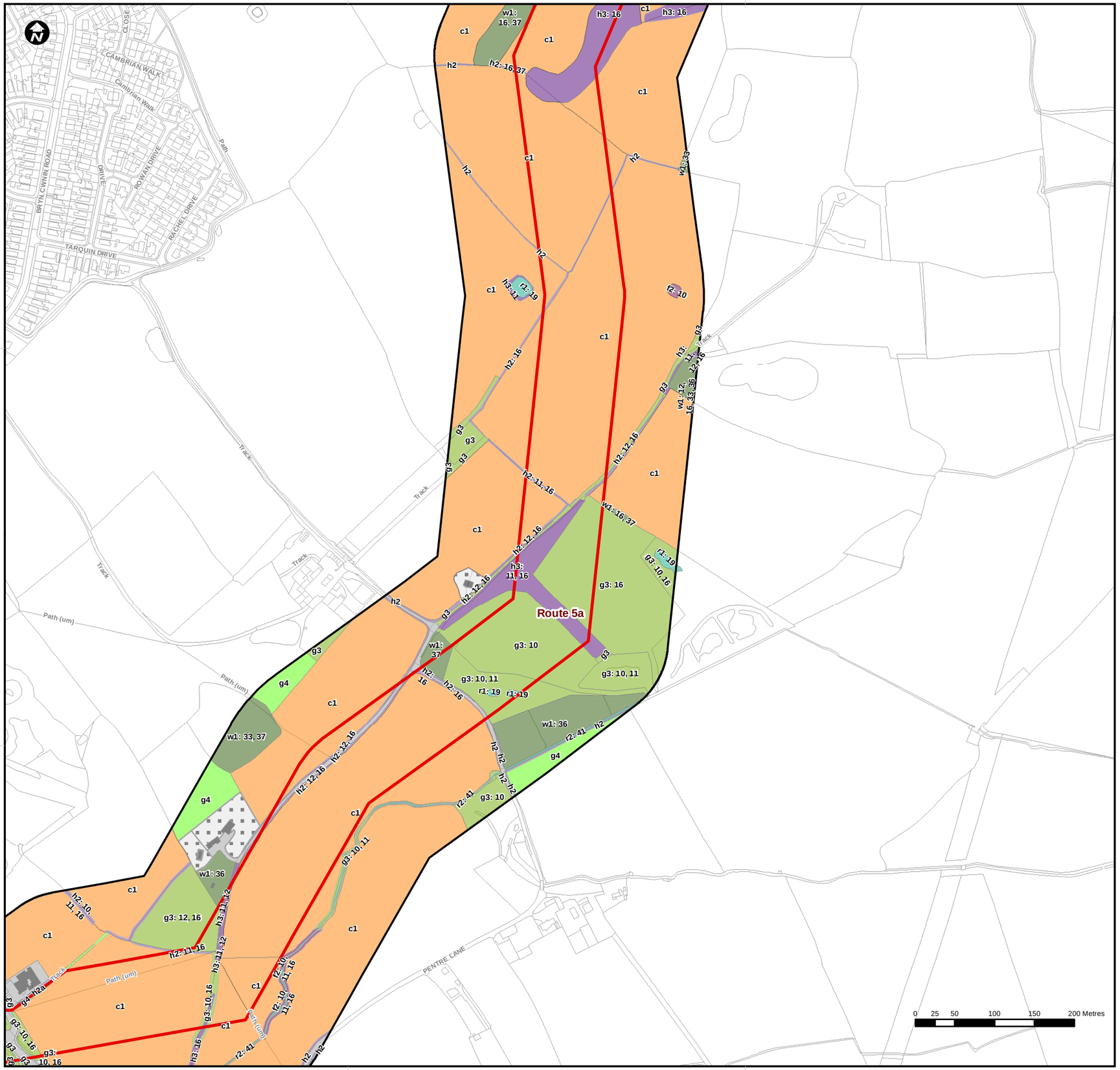

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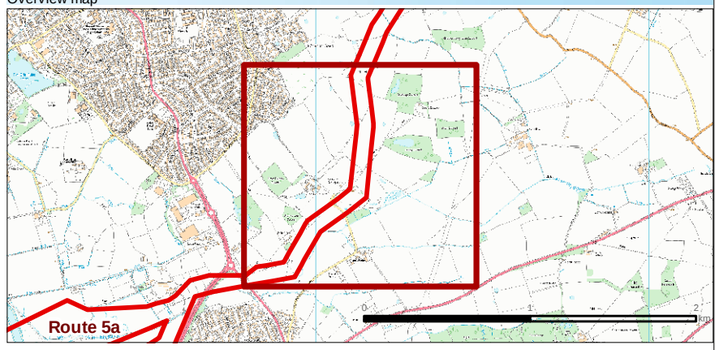

Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals

r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams

r2 - Rivers and streams

Wetland - Fen Marsh and Swamp

f2 - Fen marsh and swamp

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

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TITLE	**Habitat Plan** **Page 3 of 25**

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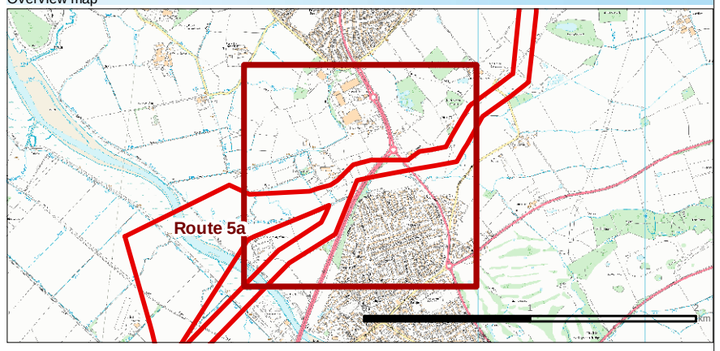
378500

Route 5a

Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c5 - Other neutral grassland - Arrhenatherum neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams
- r2a - Rivers (priority habitat)

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1d - Suburban/ mosaic of developed/ natural surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1g7 - Other broadleaved woodland types

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
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TITLE	**Habitat Plan** **Page 4 of 25**

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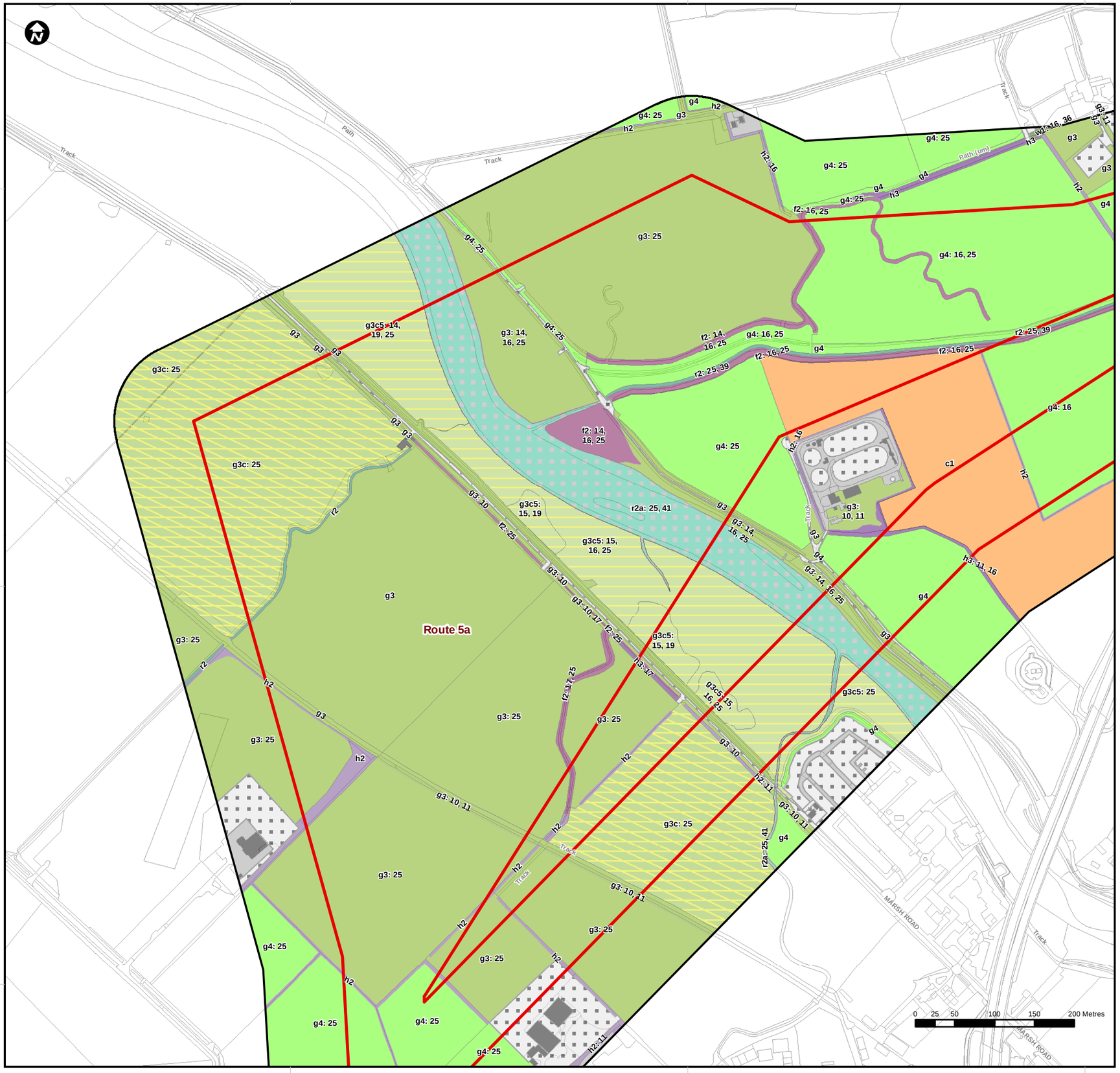

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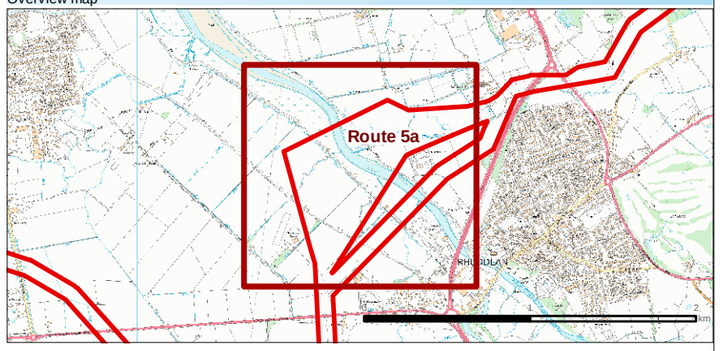

Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland
- g3c5 - Other neutral grassland - Arrhenatherum neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams
- r2a - Rivers (priority habitat)

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
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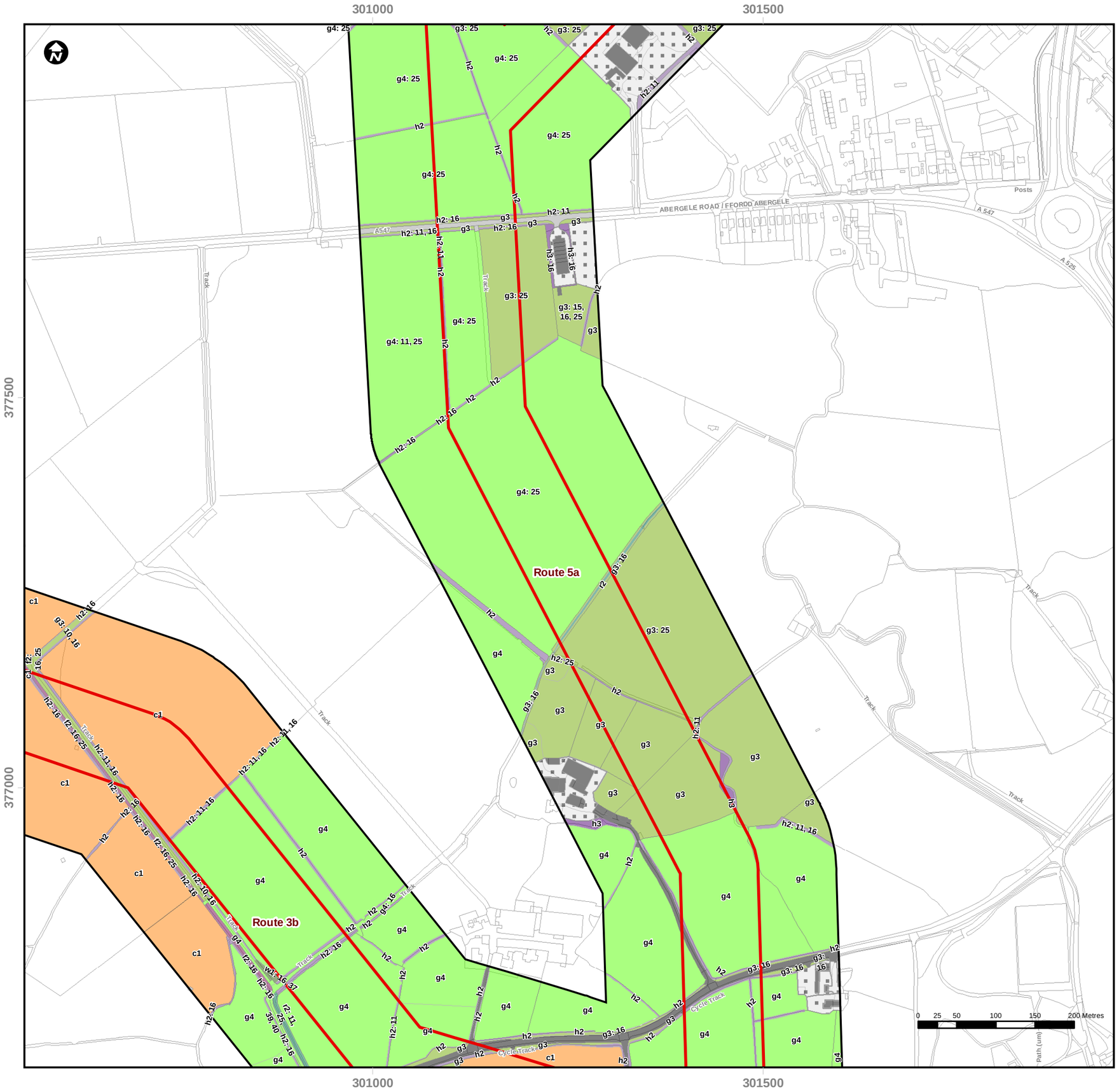
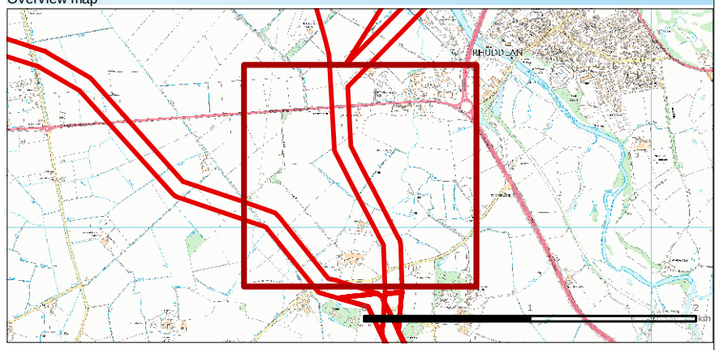


Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Rivers and Lakes - Rivers and Streams

r2 - Rivers and streams

Wetland - Fen Marsh and Swamp

f2 - Fen marsh and swamp

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid

Map Datum: ODN (Ordnance Datum Newlyn)

NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 6 of 25**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:5,000	@DIN A3

DRAWING No.	REV
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295000 295500 296000

379500

379000

378500

Route 3c

Route 3b

Route 4c

TOWYN ROAD

A 548

Path

Track

Posts

PENYCAE

FEDWEN

RHOS FAWR

TODDI

STRYD-Y-GELE

MAES OMRT GELE

SEAFIELD DRIVE

SUNRAY AVENUE

HOLLAND DRIVE

RHODFA

FFORDD

LON GLYD

TREM-Y-MYNYDD

LON-Y-WYLAN

LON-Y-DRYW

LON GLANMOR

LLYSYNREGS

LON-Y-LLYN

LON KINMEL

MORLAIS

CLEAN

GORS

ANNE DOVE

MAES

MAES TUDNO

t2

s3

t1

g3: 10

g3

g3c

g3c6 - Other neutral grassland - Lolium-Cynosurus neutral grassland

g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

g4

h2

h3

w1: 36

f2: 16

f2: 10, 25

f2e: 16, 25

f2e: 16

f2e: 14, 16

r1: 25, 39

g3c6: 17

g3c6: 15

g3c6: 16, 25

g3c6: 10, 16, 25

g3c8: 14, 25

g3c8: 14

g3c8: 15, 16, 25

h2: 16

h2: 11, 16

g3: 16, 25

g3: 10, 16

g3: 10, 16, 25

g3: 10, 25

g4: 25

g4: 16, 25

g4: 10, 25

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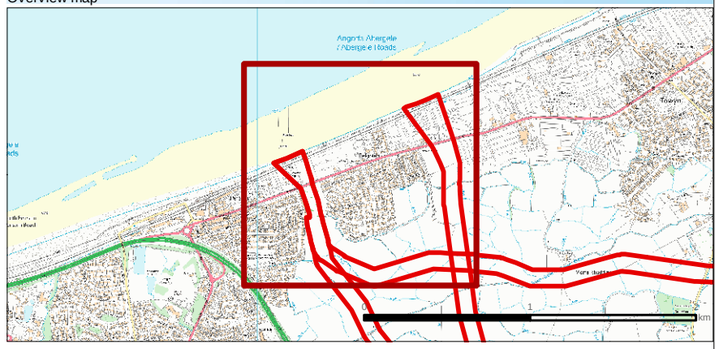
Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Grassland - Neutral Grassland

g3 - Neutral grassland

g3c - Other neutral grassland

g3c6 - Other neutral grassland - Lolium-Cynosurus neutral grassland

g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Marine Inlets and Transitional Waters - Littoral Rock

t1 - Littoral rock

Marine Inlets and Transitional Waters - Littoral Sediment

t2 - Littoral Sediment

Rivers and Lakes - Standing Open Water and Canals

r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams

r2 - Rivers and streams

r2b - Other rivers and streams

Sparsely Vegetated Land

s3 - Supralittoral Sediment

Wetland - Fen Marsh and Swamp

f2 - Fen marsh and swamp

f2e - Reedbeds

f2f - Other swamps

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

u1c - Artificial unvegetated, unsealed surface

u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
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17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
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Cartographic information

Coordinate System: British National Grid
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Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan Page 7 of 25**

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DRAWING No.	REV
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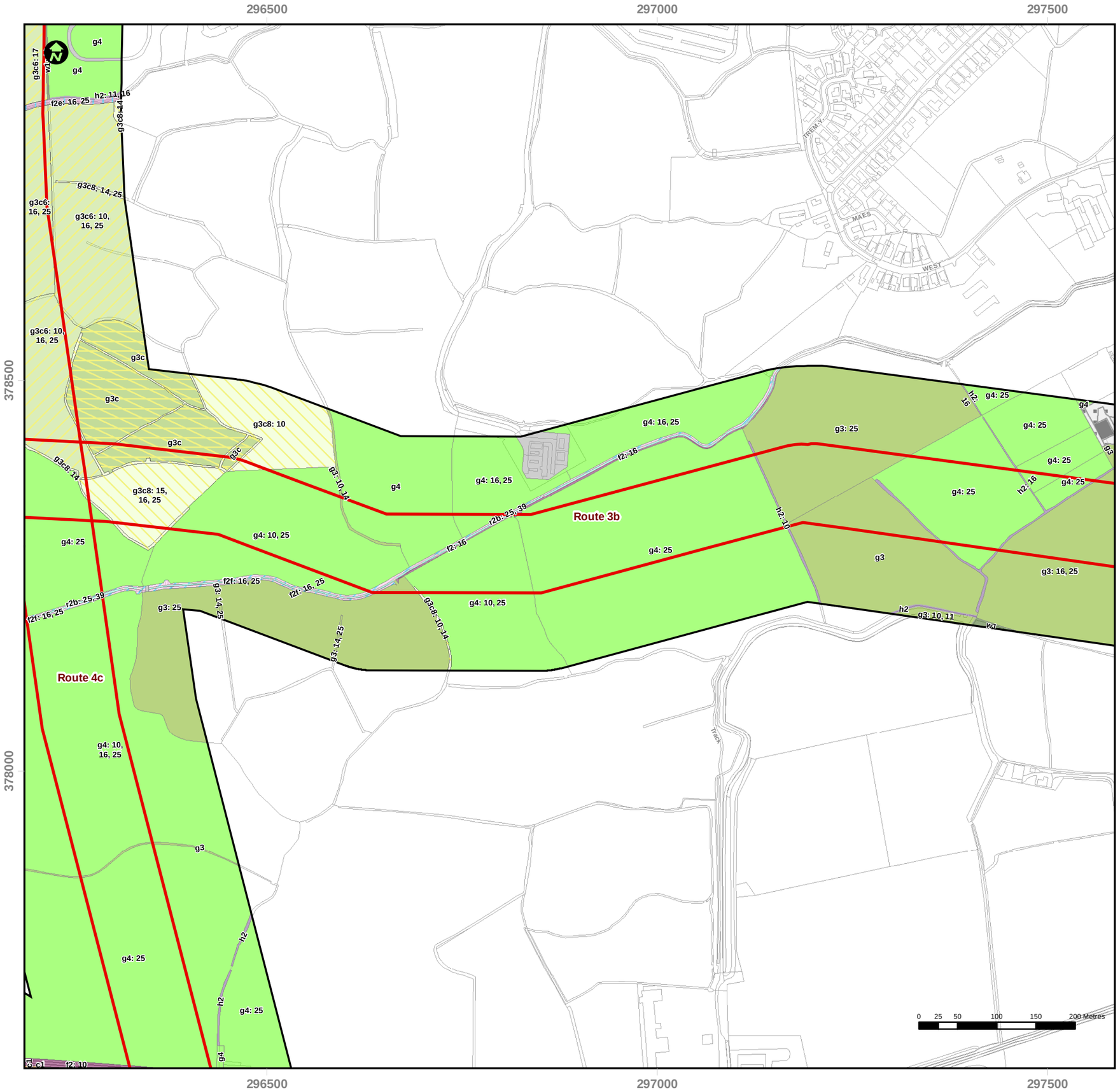
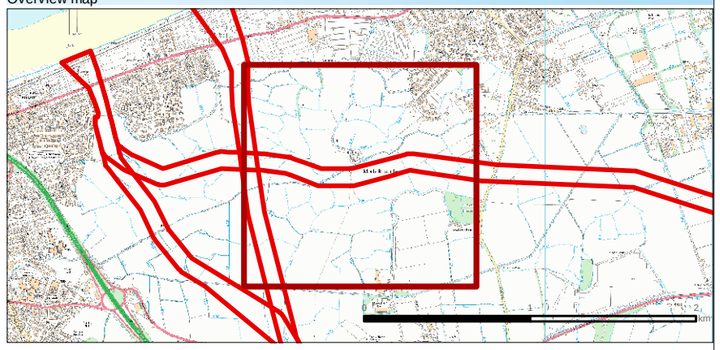


Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
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Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland
- g3c6 - Other neutral grassland - Lolium-Cynosurus neutral grassland
- g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows

Rivers and Lakes - Rivers and Streams
- r2b - Other rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp
- f2e - Reedbeds
- f2f - Other swamps

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland

Secondary Codes

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TITLE	**Habitat Plan** **Page 8 of 25**

DRAWN	DATE	SCALE	SIZE
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298000 298500

378500

378000

FFORDD Y BERLLAN

LON ERIN

TOWYN WAY EAST

Cycle Track

RHODFA NANT / BROOK AVE

Track

Track

GORS ROAD

QUARRY LINE PATH (TRACK)

Route 3b

g4 g4: 25 g4: 25 g4: 25 g3 w1 g3 h2: 16 h2 h2: 16 h2: 16 h2 g3: 25 h2: 16 g3: 25 h2 g3: 25 r2 g3: 25 r2 g3: 25 r2 g3: 16, 25 w1: 16, 37 g3 h2: 16 h3: 16 g3: 25 g4: 25 g3 g3 g3 g3: 25 h2: 16 r2 g4 h2 h2 h2 c1 h2: 11, 16 g4: 25 h2: 11, 16 h2 r2: 25, 39 h2: 16 g4: 16, 25 g4: 25 h2: 16 w1: 16, 37 g4: 25 g4: 25

GORS ROAD

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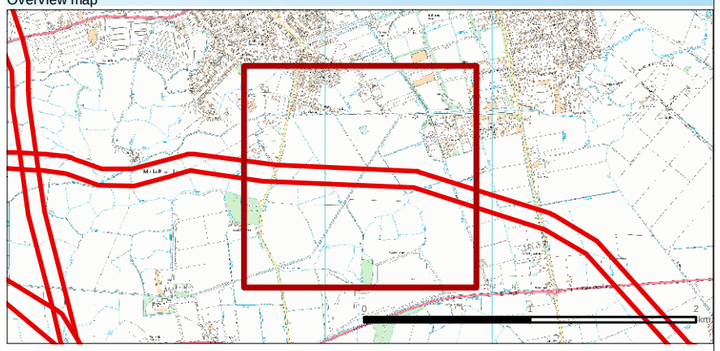
Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

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h2 - Hedgerows

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h3 - Dense scrub

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r2 - Rivers and streams

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u1b5 - Developed land; sealed surface - Buildings

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Cartographic information

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Map information

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AWEL Y MÔR
Offshore Wind Farm

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TITLE	**Habitat Plan** **Page 9 of 25**

DRAWN	DATE	SCALE	SIZE
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299000 299500 300000

378500

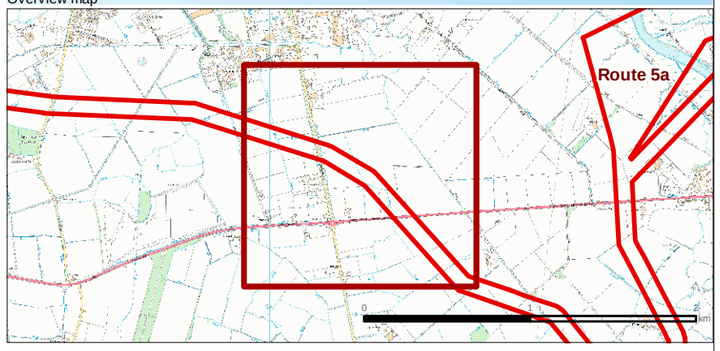
378000

377500

g4: 25
Track
h2
g4: 25
h2: 16
h2a
h2
g4: 25
h2: 16
g4: 25
h2a
g3: 25
h2: 11: 16
g4: 25
w1: 16, 37
h2: 11
h2: 11
h2: 11
h2: 11
h2: 11
g3: 25
g3: 25
h2: 16
g3: 16
g3: 16
g3: 16
g3: 16
g3: 25
g3: 25
g3: 16, 25
g3c: 16, 25
h2: 10, 16, 25
h2: 10
g3: 16
r2
h2a
h2
g3c: 16
h2
h2a: 16
g3c: 25
g3c
h2a
h2
h2
g3: 16, 25
h2
g3: 16, 25
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2
h2: 16
h2: 16
h2: 16
h2: 16
h2: 16
h2: 16
h2a: 16
A547
ABERGELE ROAD
RHUDDLAN ROAD
A547
Track
STASAPH AVENUE
Track
Route 3b
g4
g4
g4
g4
g4
g4
g3

0 25 50 100 150 200 Metres

Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

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h2 - Hedgerows

h2a - Hedgerow (priority habitat)

Rivers and Lakes - Rivers and Streams

r2 - Rivers and streams

Wetland - Fen Marsh and Swamp

f2 - Fen marsh and swamp

Urban

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Woodland and Forest - Broadleaved Mixed and Yew Woodland

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Map information

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AWEL Y MÔR
Offshore Wind Farm

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TITLE	**Habitat Plan** **Page 10 of 25**

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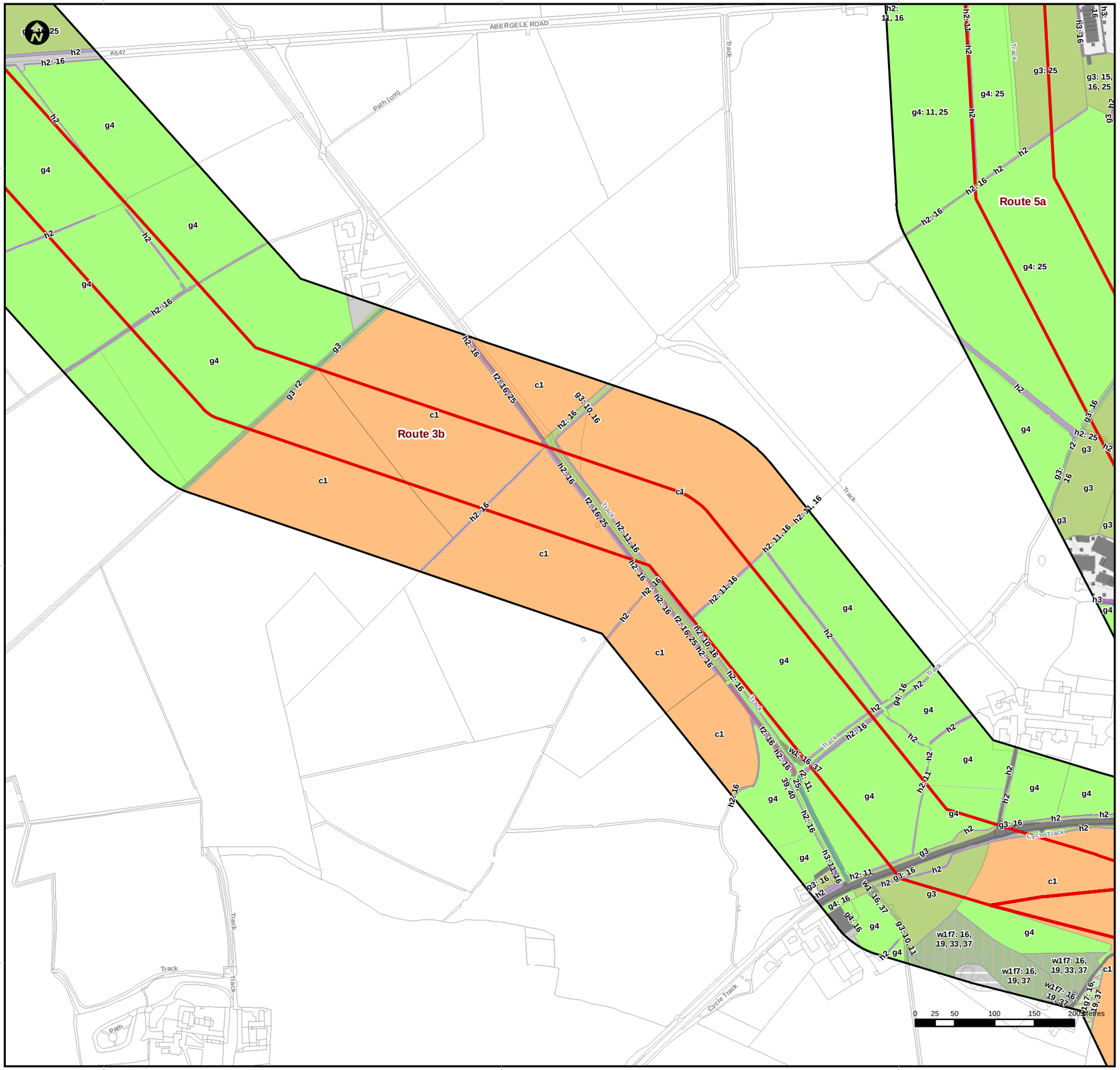
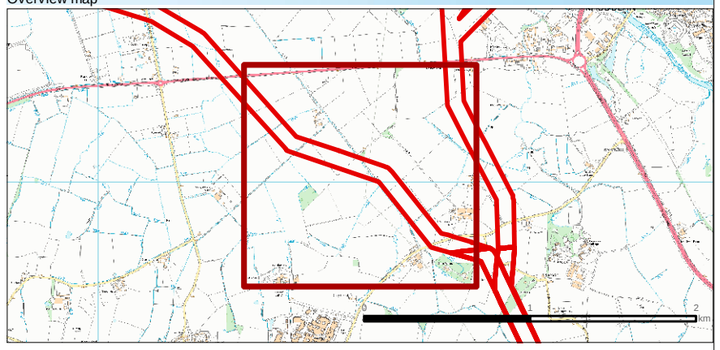


Overview map



Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1c - Artificial unvegetated, unsealed surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g7 - Other broadleaved woodland types

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
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Cartographic information

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AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 11 of 25**

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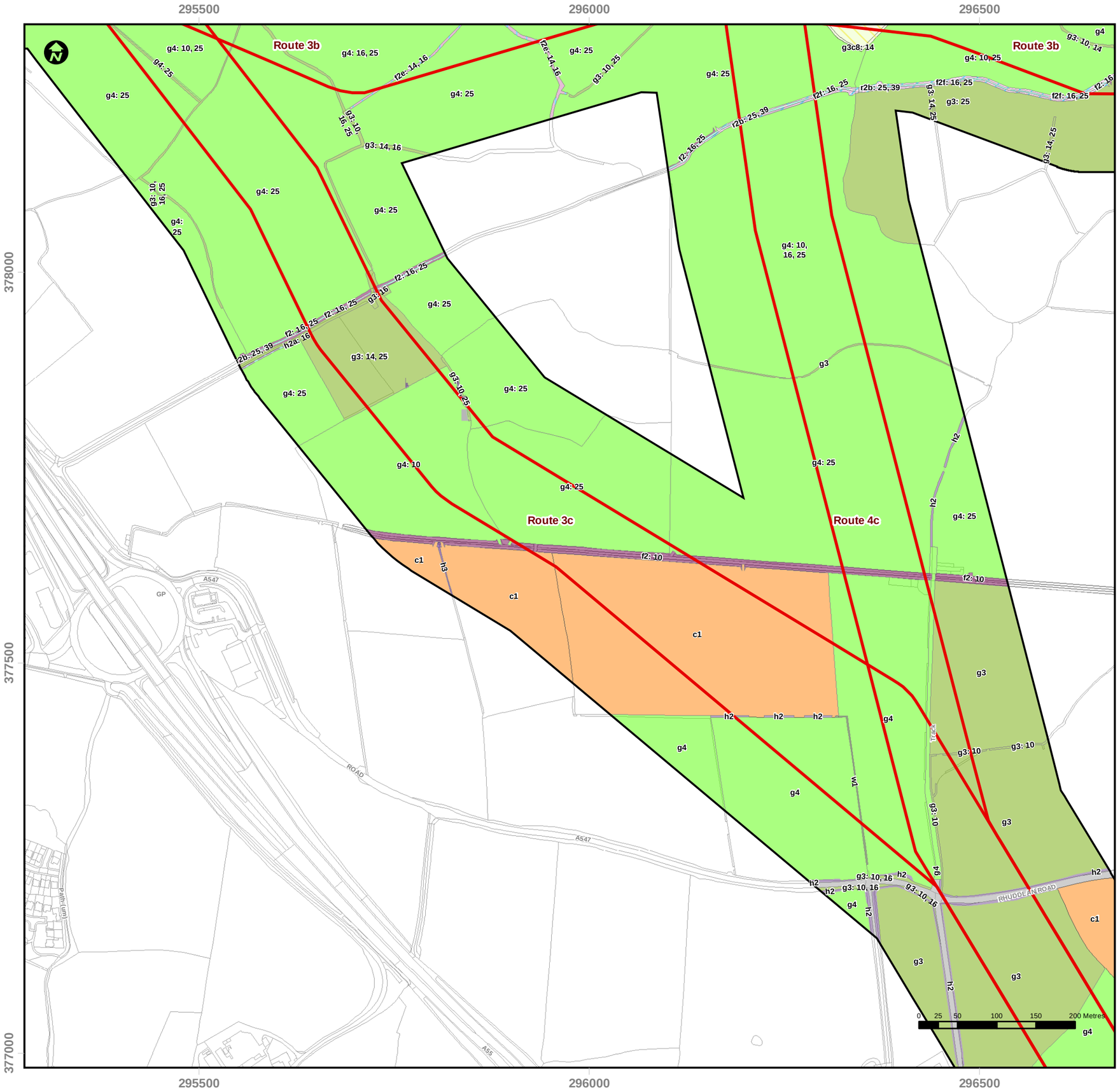
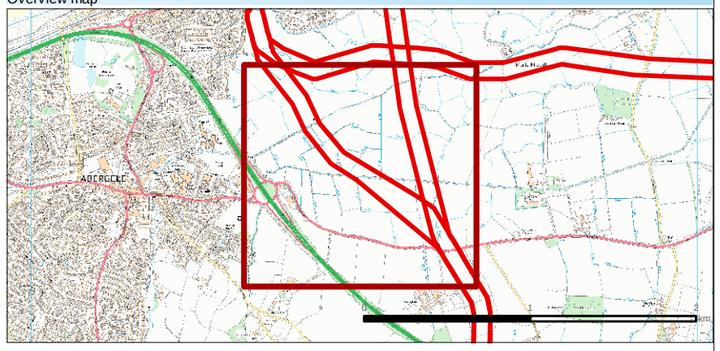


Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Rivers and Lakes - Rivers and Streams

r2b - Other rivers and streams

Wetland - Fen Marsh and Swamp

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Urban

u1b - Developed land; sealed surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

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TITLE	**Habitat Plan** **Page 12 of 25**

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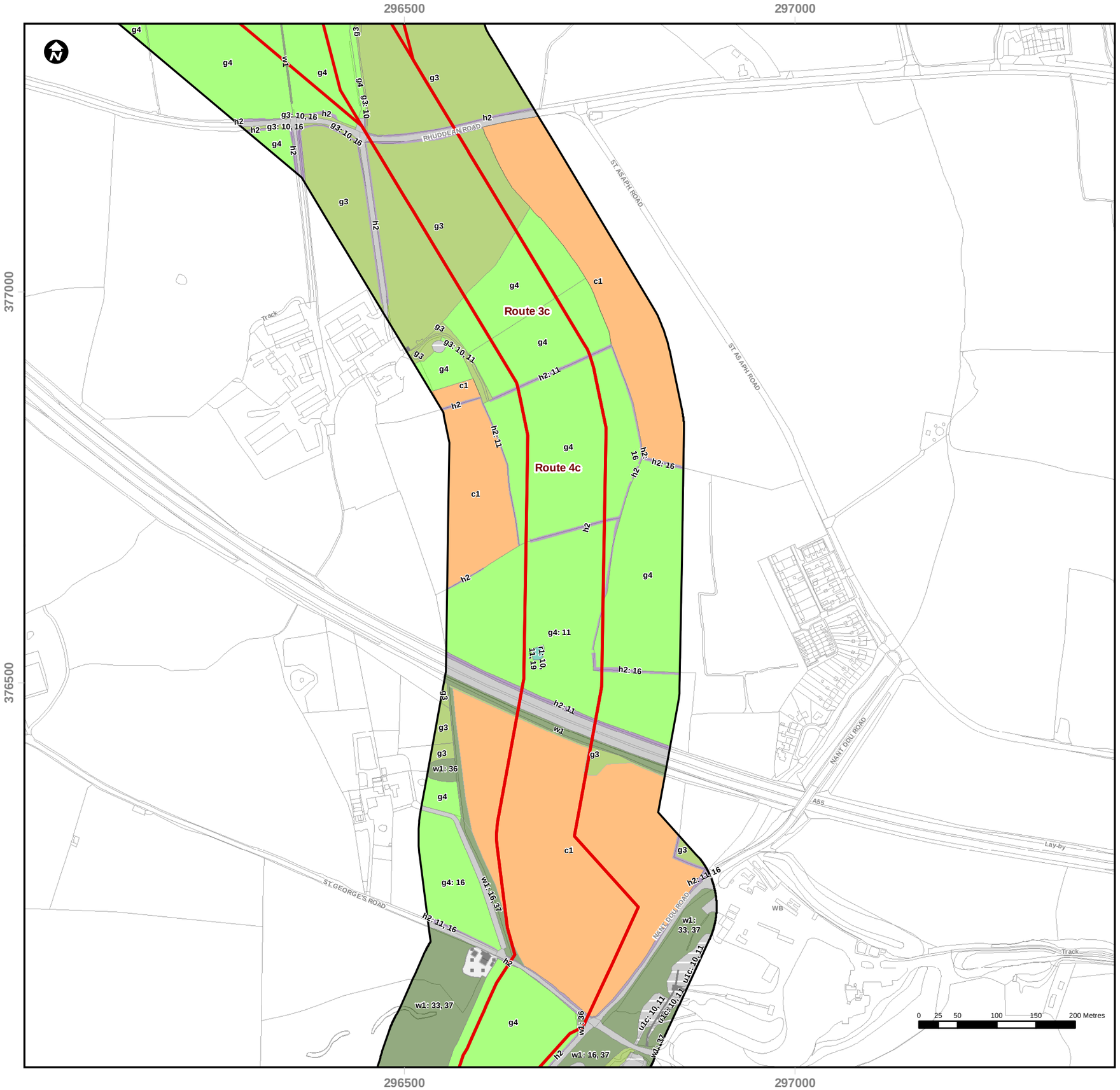
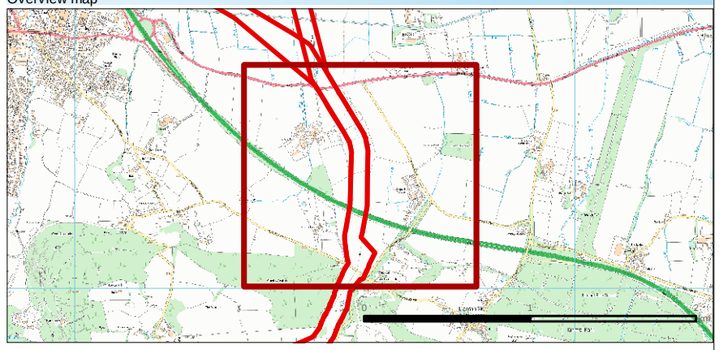


Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

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Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

Rivers and Lakes - Standing Open Water and Canals

r1 - Standing open water and canals

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

u1c - Artificial unvegetated, unsealed surface

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Drawing 4	01

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295500 296000 296500

376000

375500

375000

Route 3c

Route 4c

c1

g4

g3

h2

h3

w1

w1: 33, 37

w1: 16, 37

w1: 38

w1: 36

g4: 10, 11

g4: 10, 16

g3: 10

g3: 17

g4: 11

h3: 11

h2: 11

h2: 12

h2: 16

w1: 37

u1c: 10, 11

Path (um)

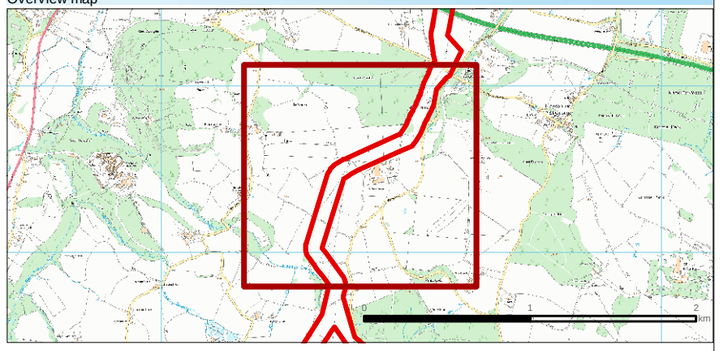
Track

TAN Y FRON ROAD

FAR DE FHILL

0 25 50 100 150 200 Metres

Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

u1c - Artificial unvegetated, unsealed surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 14 of 25**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:5,000	@DIN A3

DRAWING No.	REV
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296000 296500

374500

374000

Route 3c

Route 4c

Track

Guide Post

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Path (um)

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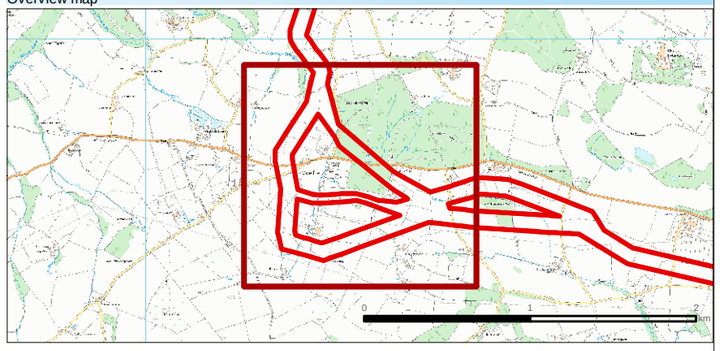
296000 296500

Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

h3e - Gorse scrub

h3h - Mixed scrub

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

w1g6 - Line of trees

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 15 of 25**

DRAWN	DATE	SCALE	SIZE
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DRAWING No.	REV
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374500

374000

373500

Route 3c

Route 4c

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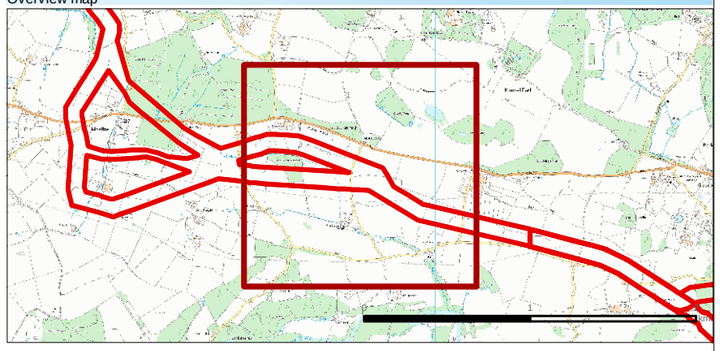
Overview map



Legend

Potential Onshore Cable Corridor

Habitat Survey Area

Cropland - Arable and Horticulture

c1 - Cropland

Grassland - Neutral Grassland

g3 - Neutral grassland

Grassland - Modified Grassland

g4 - Modified grassland

Heathland and Shrub - Hedgerows

h2 - Hedgerows

h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub

h3 - Dense scrub

Urban

u1 - Built-up areas and gardens

u1b - Developed land; sealed surface

u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 16 of 25**

DRAWN	DATE	SCALE	SIZE
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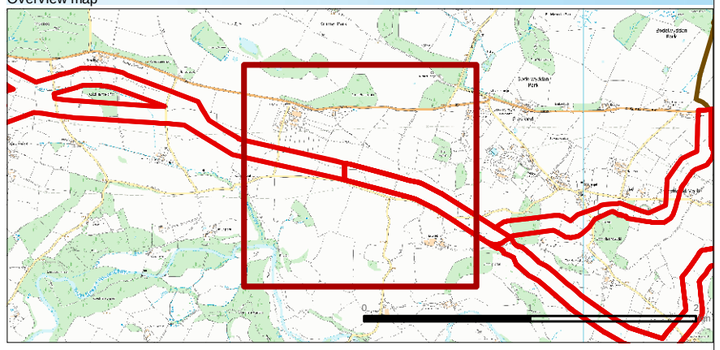
298000 298500 299000

374000 373500 373000

B 5381
Guide Post
Track
Path (um)
GP
Route 3c
Route 4c
c1
g4
g3
h2
h2a
h2: 11, 12
h2: 16
h2a: 11, 12
h2a: 16
h2: 12, 16
h2: 12
h2: 11
g4: 11
w1: 33
g3: 10, 11
u1b: 11
w1: 33, 37

0 25 50 100 150 200 Metres

Overview map



Legend

Potential Onshore Cable Corridor
Habitat Survey Area

Cropland - Arable and Horticulture
c1 - Cropland

Grassland - Neutral Grassland
g3 - Neutral grassland

Grassland - Modified Grassland
g4 - Modified grassland

Heathland and Shrub - Hedgerows
h2 - Hedgerows
h2a - Hedgerow (priority habitat)

Urban
u1 - Built-up areas and gardens
u1b - Developed land; sealed surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
w1 - Broadleaved mixed and yew woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 17 of 25**

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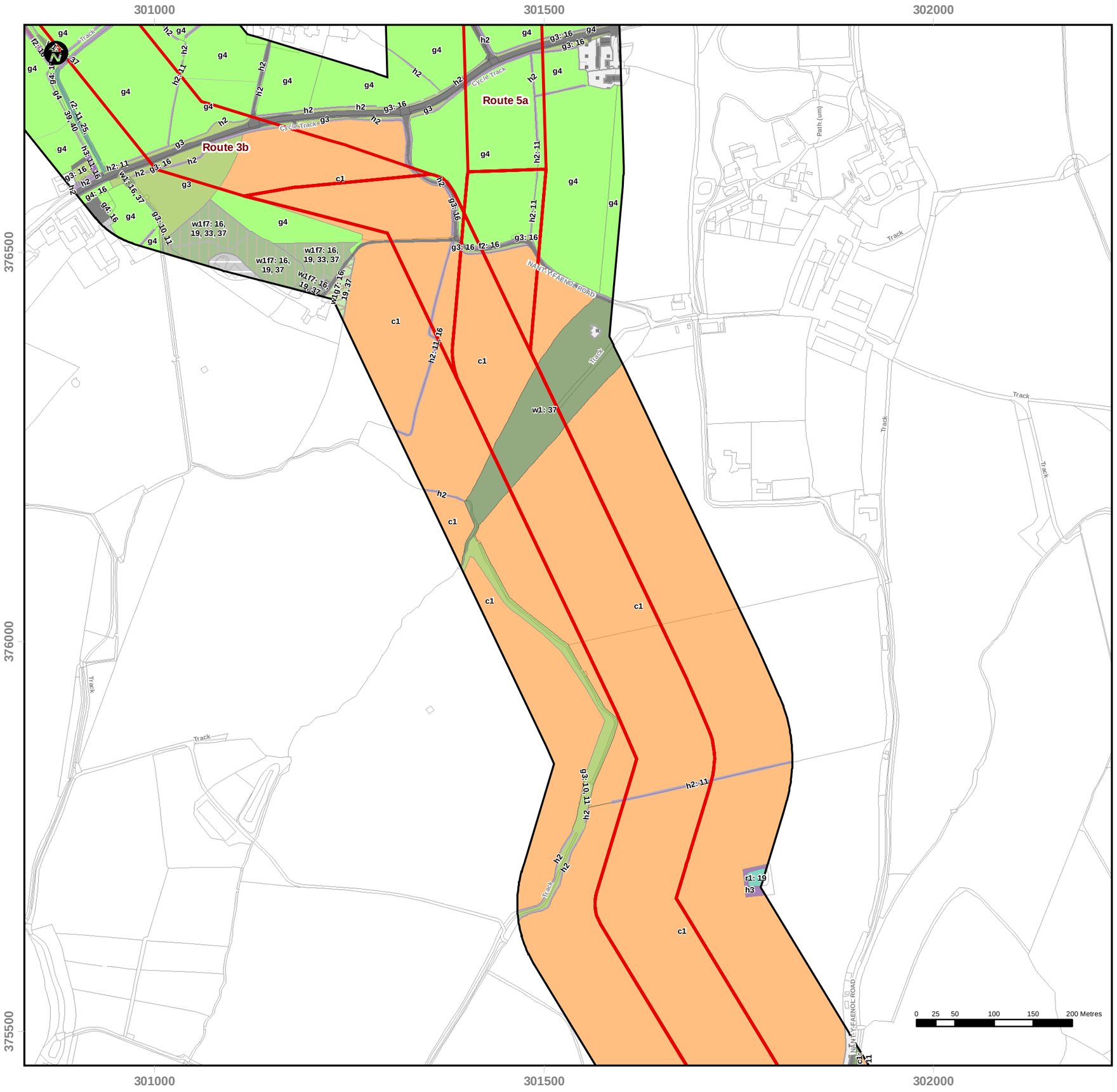

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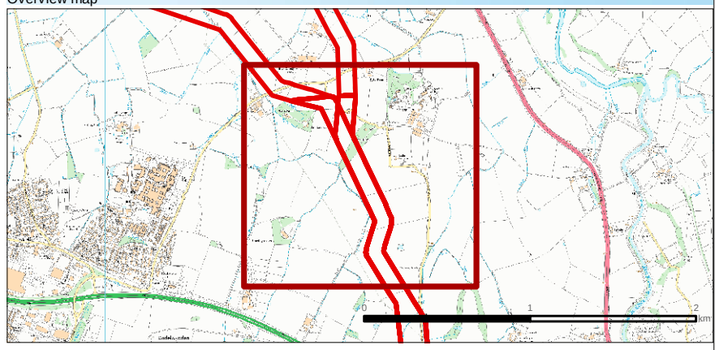

Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1c - Artificial unvegetated, unsealed surface
- u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g7 - Other broadleaved woodland types

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 18 of 25**

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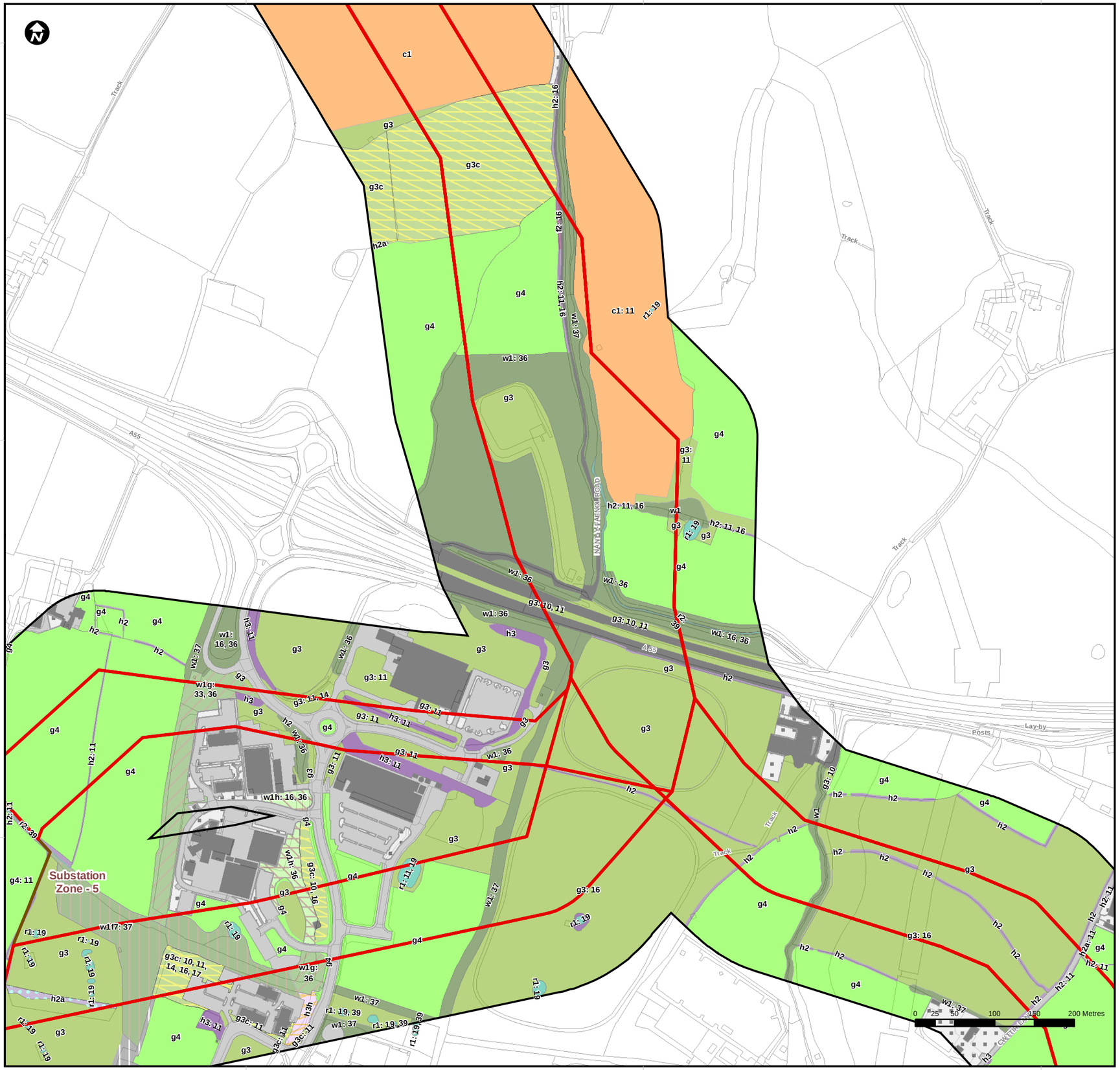
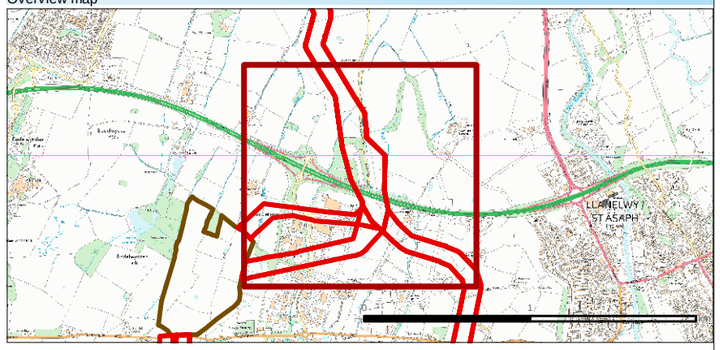


Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub
- h3h - Mixed scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Wetland - Fen Marsh and Swamp
- f2 - Fen marsh and swamp

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1d - Suburban/ mosaic of developed/ natural surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1h - Other woodland; mixed

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 19 of 25**

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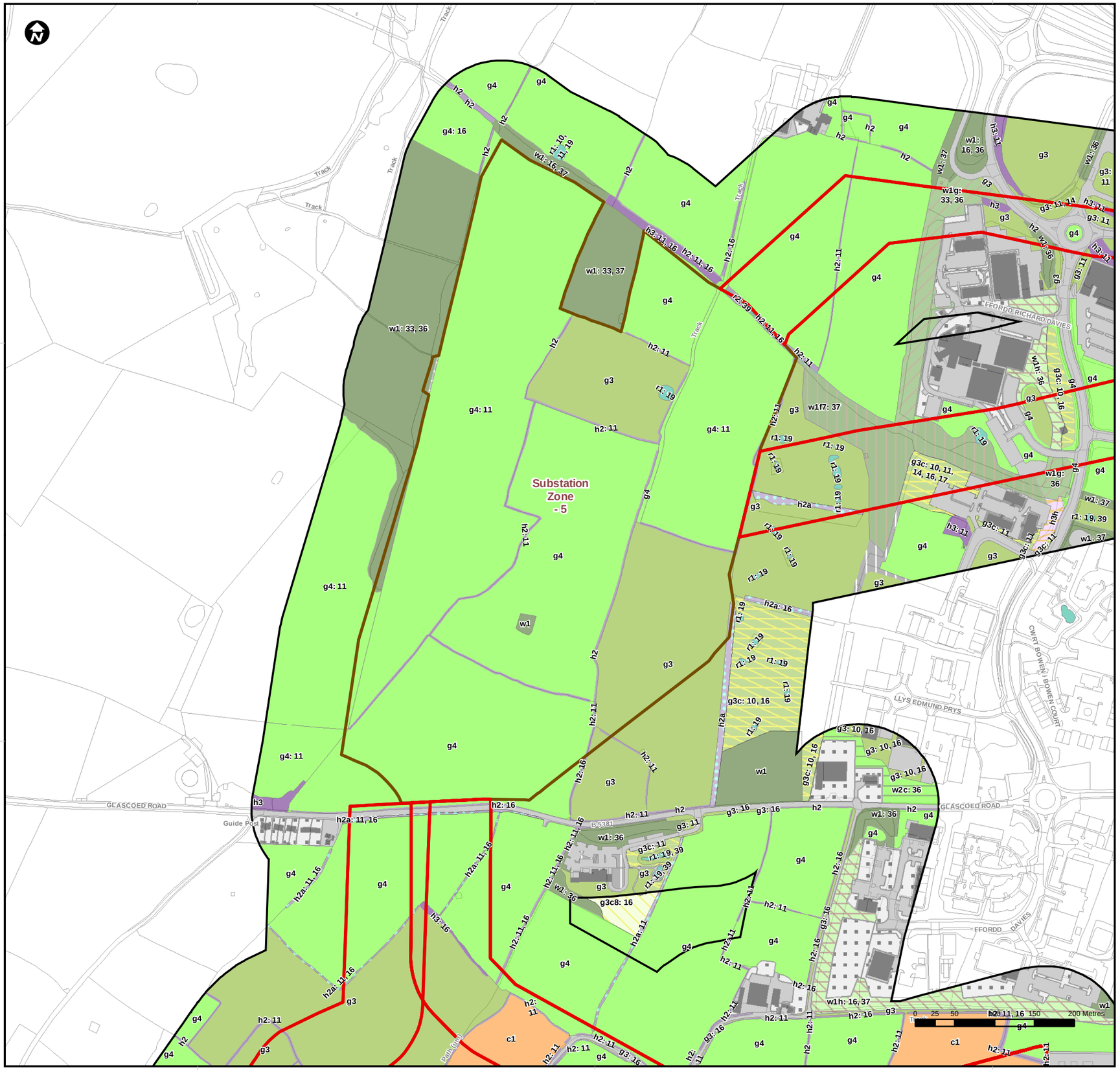

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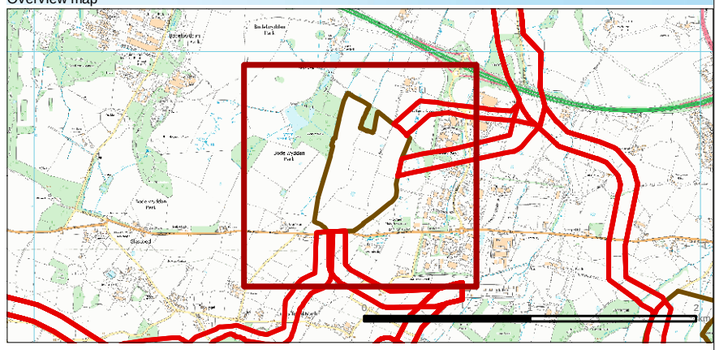

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland
- g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub
- h3h - Mixed scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1d - Suburban/ mosaic of developed/ natural surface
- u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1h - Other woodland; mixed

Woodland and Forest - Coniferous Woodland
- w2c - Other coniferous woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 20 of 25**

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jsalter	05/02/2021	1:5,000	@DIN A3

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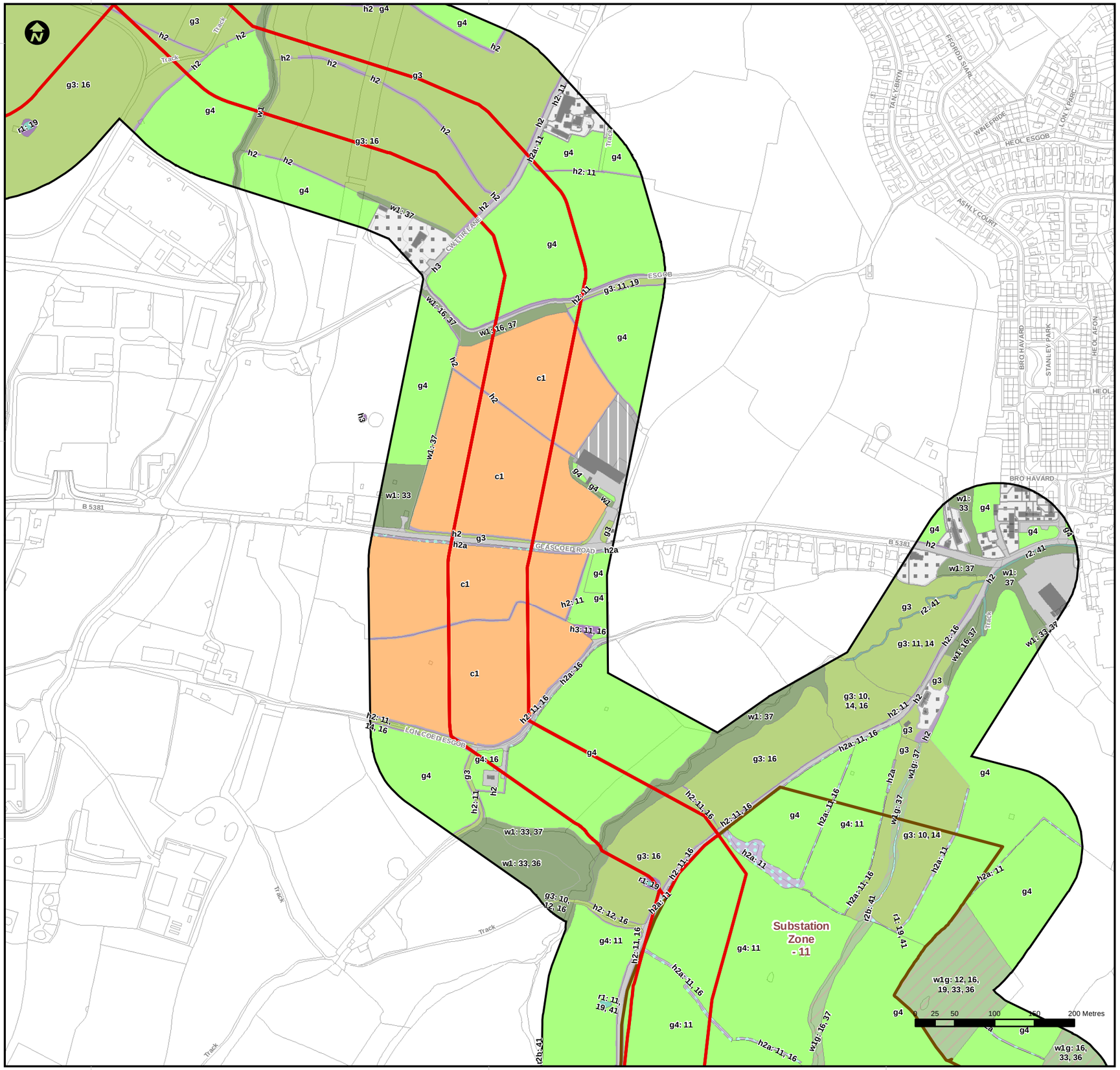

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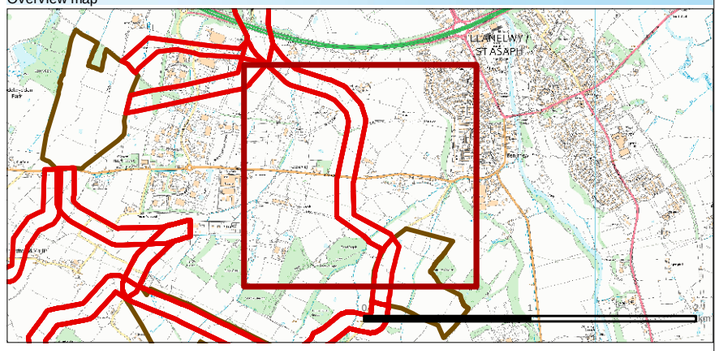

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams
- r2b - Other rivers and streams

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1d - Suburban/ mosaic of developed/ natural surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1g - Other woodland; broadleaved

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 21 of 25**

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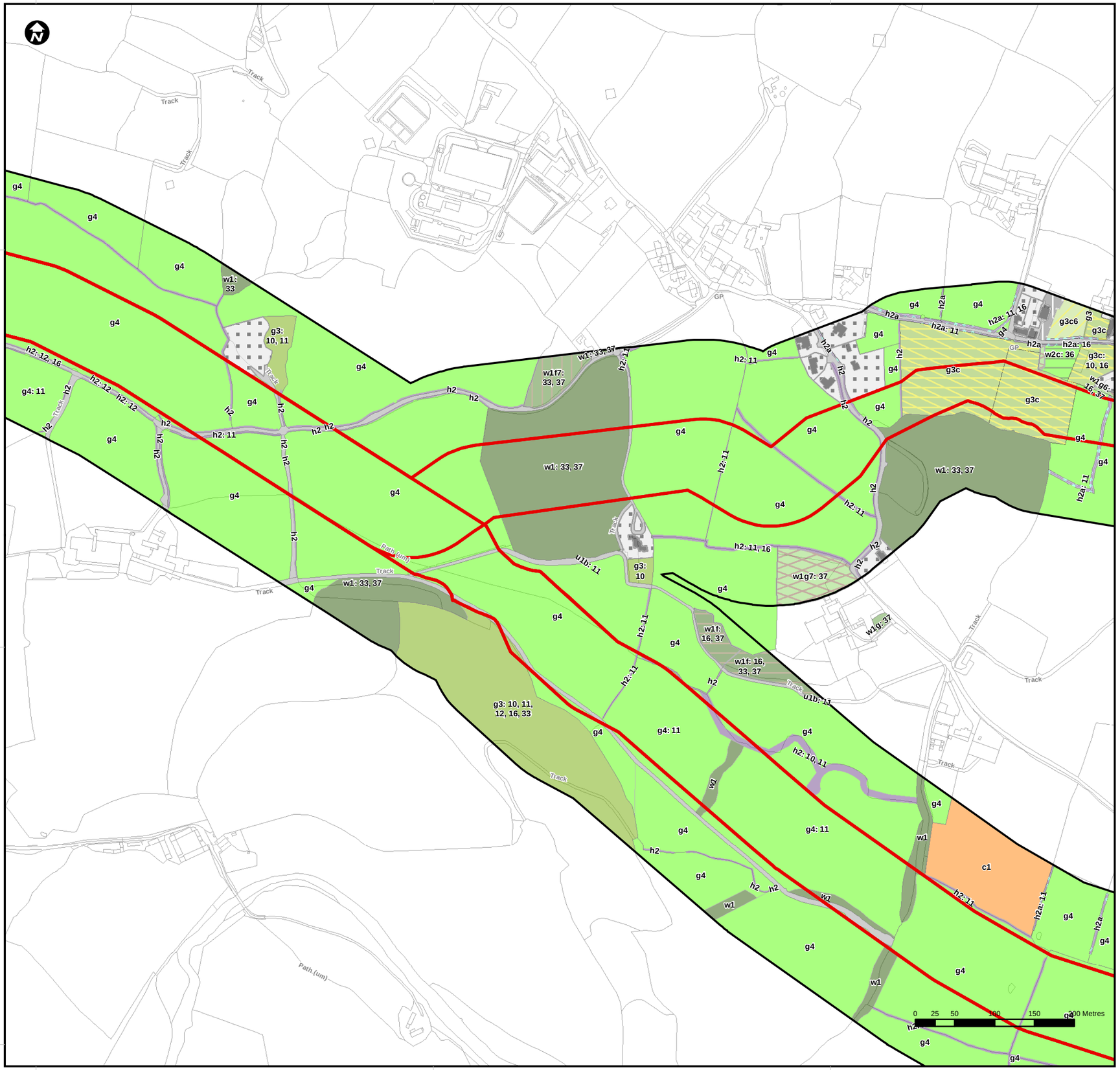

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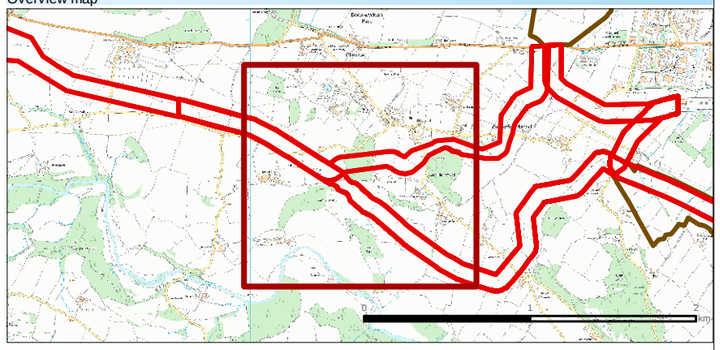

Legend

- Potential Onshore Cable Corridor
- Habitat Survey Area

Cropland - Arable and Horticulture

- c1 - Cropland

Grassland - Neutral Grassland

- g3 - Neutral grassland
- g3c - Other neutral grassland
- g3c6 - Other neutral grassland - Lolium-Cynosurus neutral grassland

Grassland - Modified Grassland

- g4 - Modified grassland

Heathland and Shrub - Hedgerows

- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Urban

- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1d - Suburban/ mosaic of developed/ natural surface
- u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland

- w1 - Broadleaved mixed and yew woodland
- w1f - Lowland mixed deciduous woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1g6 - Line of trees
- w1g7 - Other broadleaved woodland types

Woodland and Forest - Coniferous Woodland

- w2c - Other coniferous woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 22 of 25**
DRAWN	jsalter
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SCALE	1:5,000
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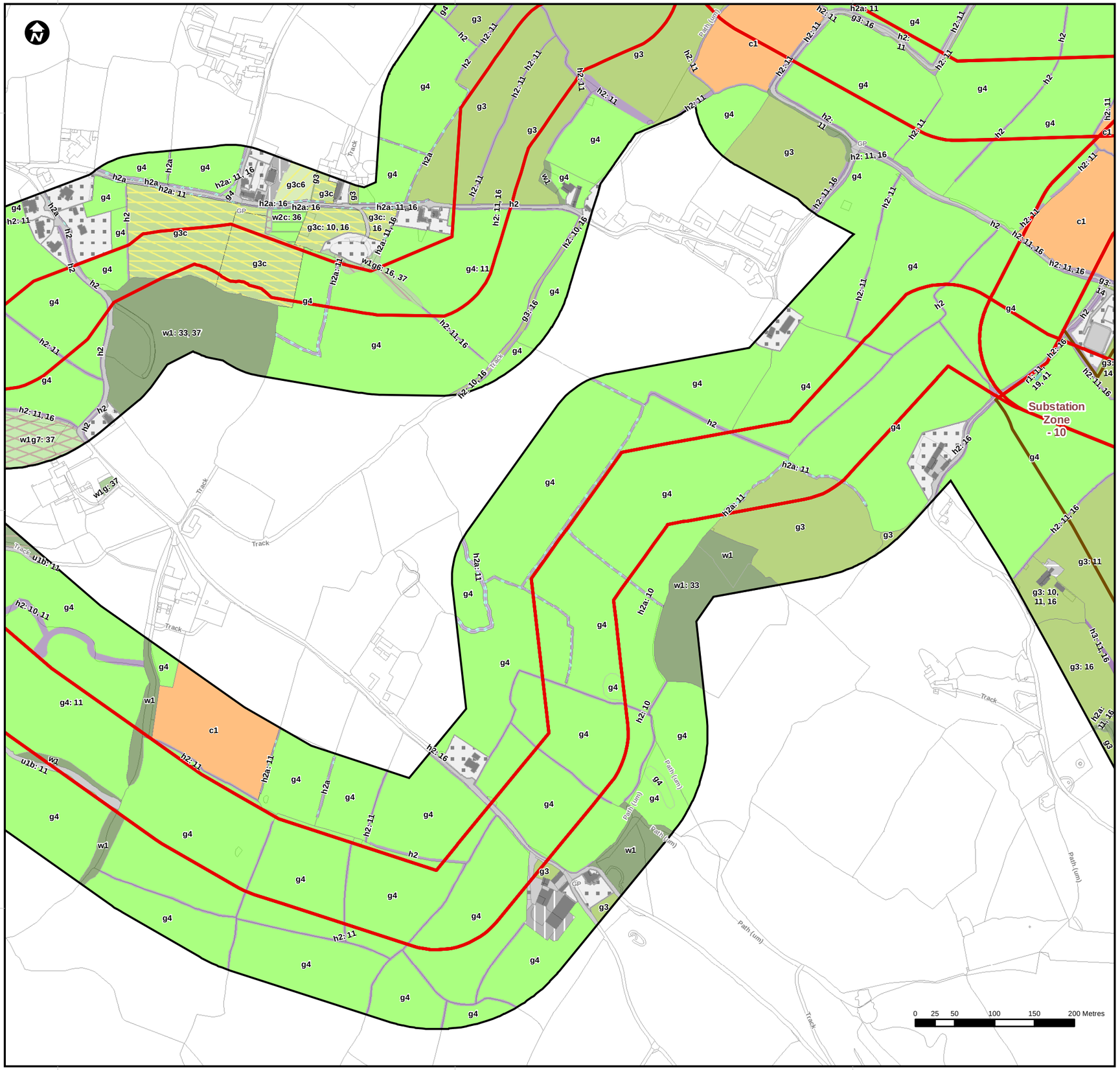

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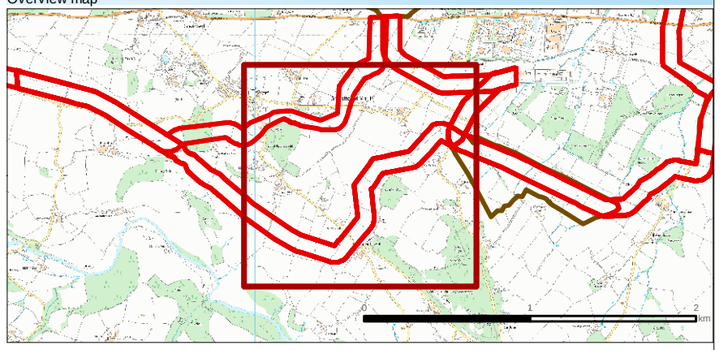

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c - Other neutral grassland
- g3c6 - Other neutral grassland - Lolium-Cynosurus neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
- u1c - Artificial unvegetated, unsealed surface
- u1d - Suburban/ mosaic of developed/ natural surface
- u1e - Built linear features

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f - Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1g6 - Line of trees
- w1g7 - Other broadleaved woodland types

Woodland and Forest - Coniferous Woodland
- w2c - Other coniferous woodland

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
16 - Tall herb
17 - Ruderal / ephemeral
19 - Ponds (Priority Habitat)
25 - Coastal and flood plain grazing marsh
33 - Ancient woodland site
36 - Plantation
37 - Semi-natural woodland
38 - Secondary woodland
39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 23 of 25**
DRAWN	jsalter
DATE	05/02/2021
SCALE	1:5,000
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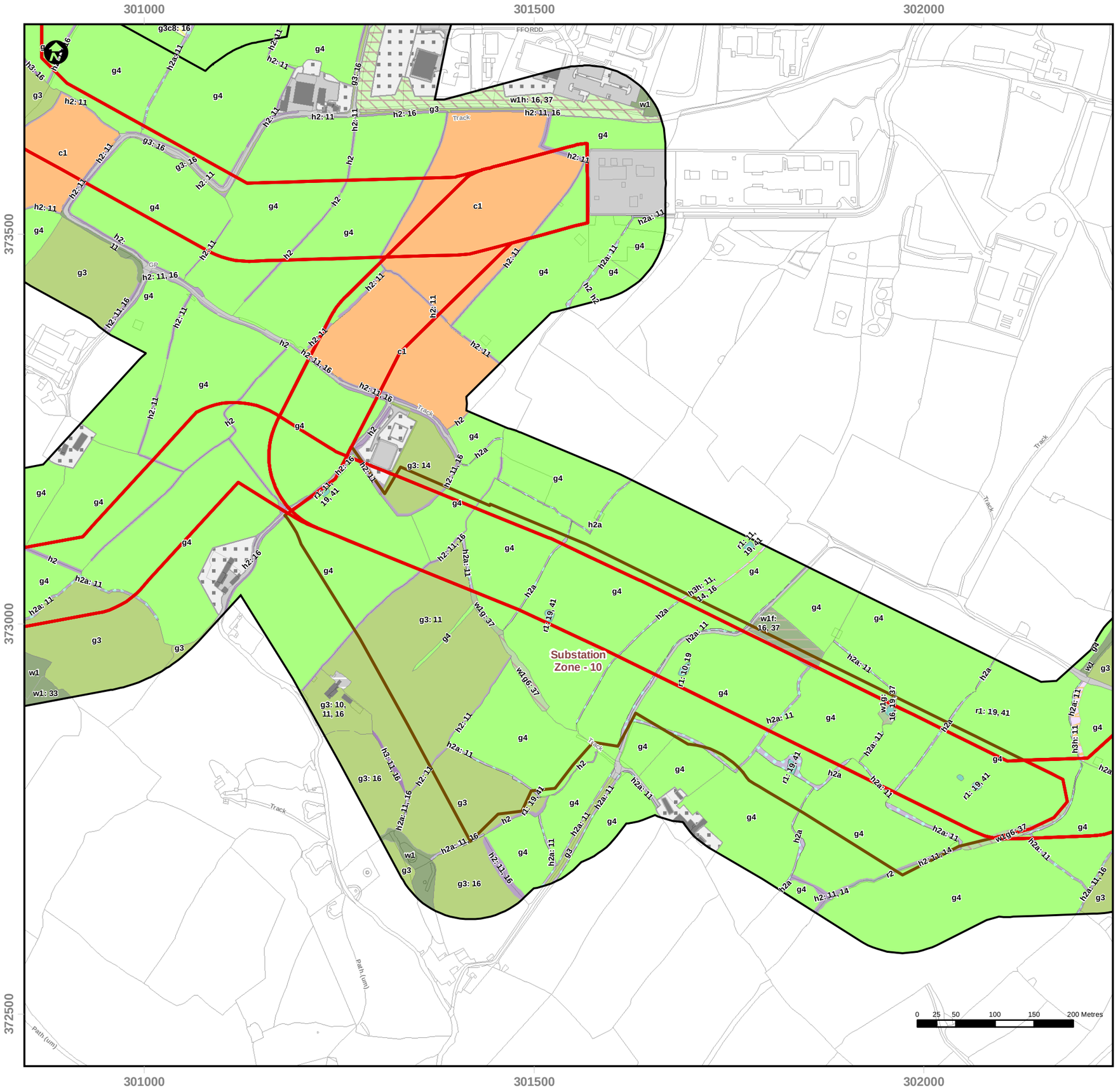
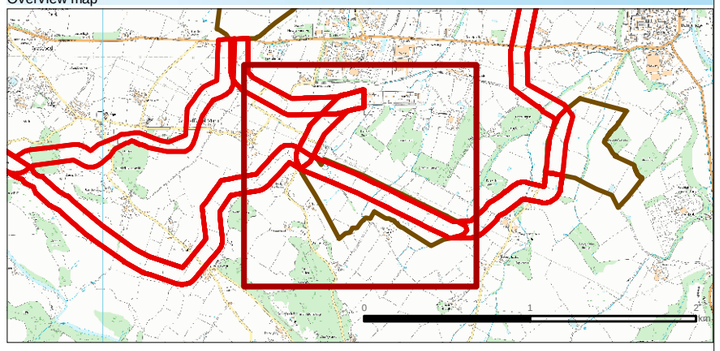


Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

Grassland - Neutral Grassland
- g3 - Neutral grassland
- g3c8 - Other neutral grassland - Holcus-Juncus neutral grassland

Grassland - Modified Grassland
- g4 - Modified grassland

Heathland and Shrub - Hedgerows
- h2 - Hedgerows
- h2a - Hedgerow (priority habitat)

Heathland and Shrub - Dense Scrub
- h3 - Dense scrub
- h3h - Mixed scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams

Urban
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Developed land; sealed surface - Buildings
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Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1 - Broadleaved mixed and yew woodland
- w1f - Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1g6 - Line of trees
- w1h - Other woodland; mixed

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
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40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 24 of 25**

DRAWN	DATE	SCALE	SIZE
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DRAWING No.	REV
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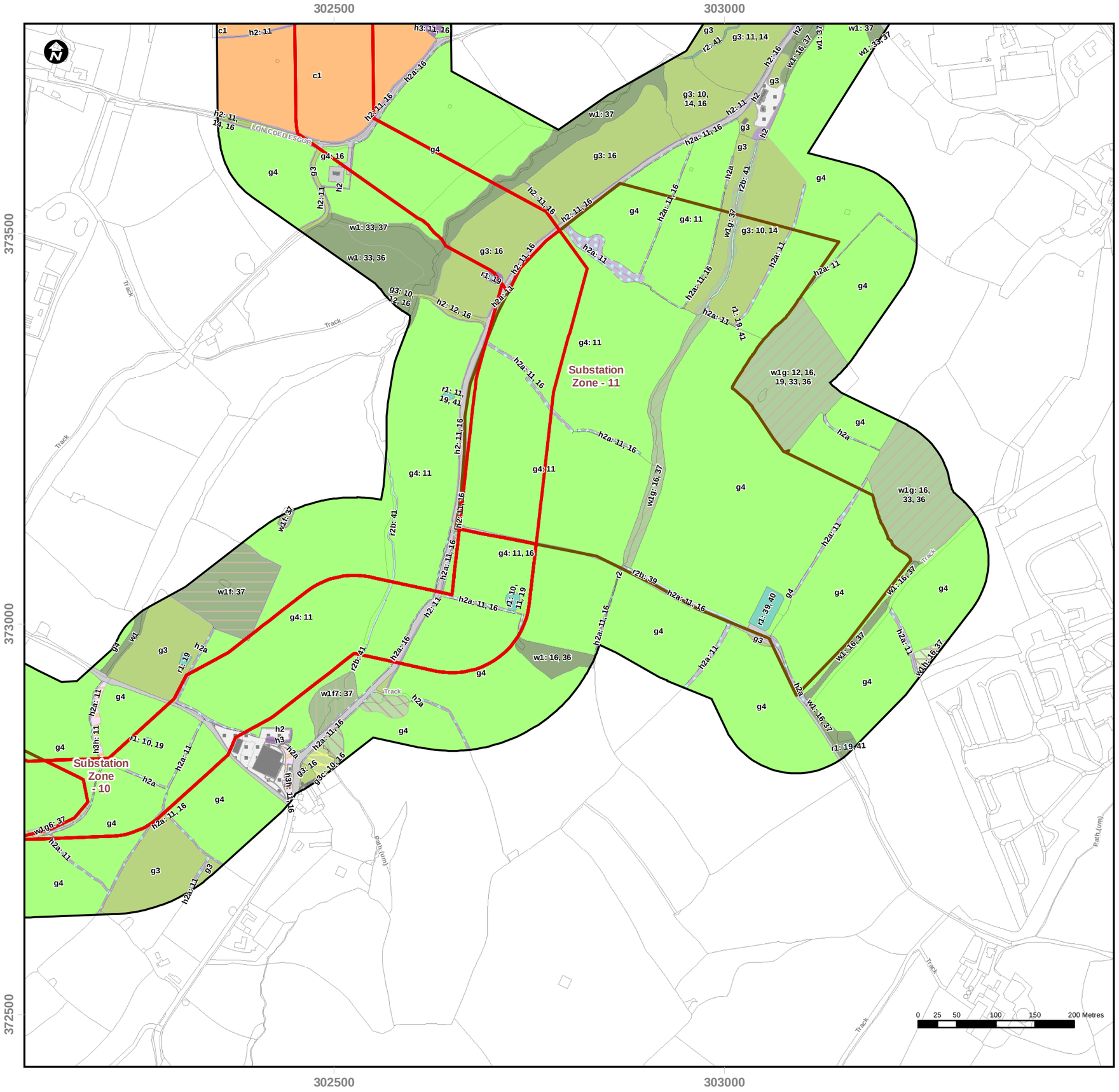
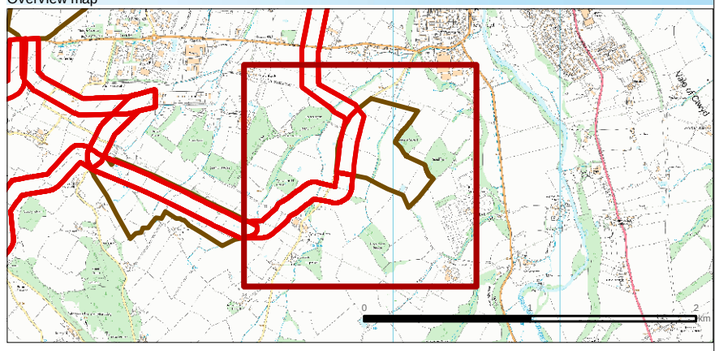


Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Habitat Survey Area

Cropland - Arable and Horticulture
- c1 - Cropland

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- g3 - Neutral grassland
- g3c - Other neutral grassland

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- r1 - Standing open water and canals

Rivers and Lakes - Rivers and Streams
- r2 - Rivers and streams
- r2b - Other rivers and streams

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- u1b5 - Developed land; sealed surface - Buildings

Woodland and Forest - Broadleaved Mixed and Yew Woodland
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- w1f - Lowland mixed deciduous woodland
- w1f7 - Other Lowland mixed deciduous woodland
- w1g - Other woodland; broadleaved
- w1g6 - Line of trees
- w1h - Other woodland; mixed

Secondary Codes

10 - Scattered scrub
11 - Scattered trees
12 - Scattered bracken
14 - Scattered rushes
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39 - Freshwater - man-made
40 - Freshwater - heavily modified
41 - Freshwater - natural

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Habitat Plan** **Page 25 of 25**

DRAWN	DATE	SCALE	SIZE
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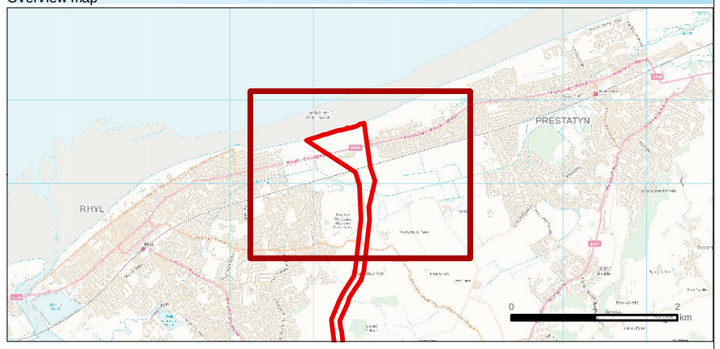
DRAWING 5

Ponds and Watercourses Plan

Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 1 of 17**

DRAWN	DATE	SCALE	SIZE
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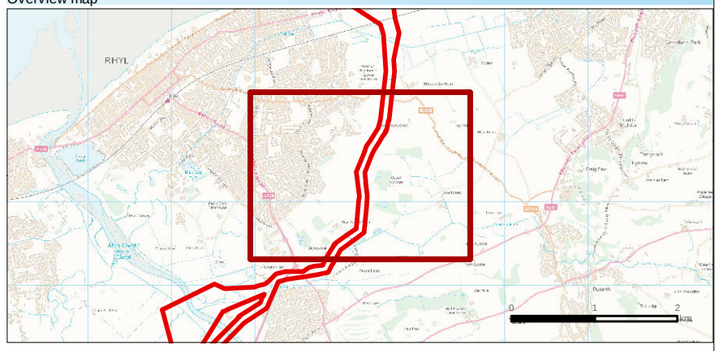
Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 2 of 17**

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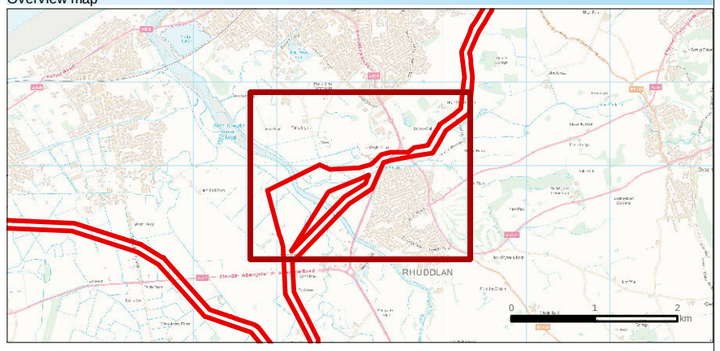
Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 3 of 17**

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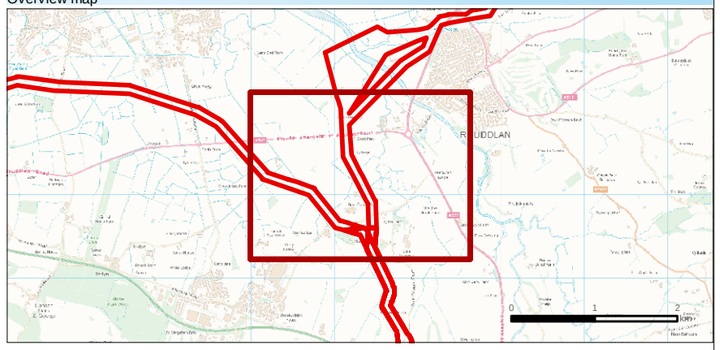

Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 4 of 17**

DRAWN	DATE	SCALE	SIZE
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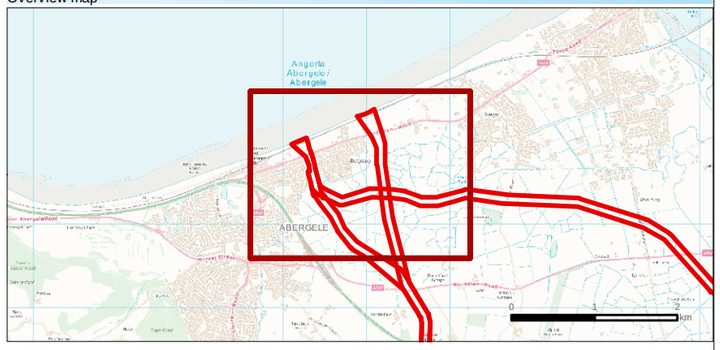
Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 5 of 17**

DRAWN	DATE	SCALE	SIZE
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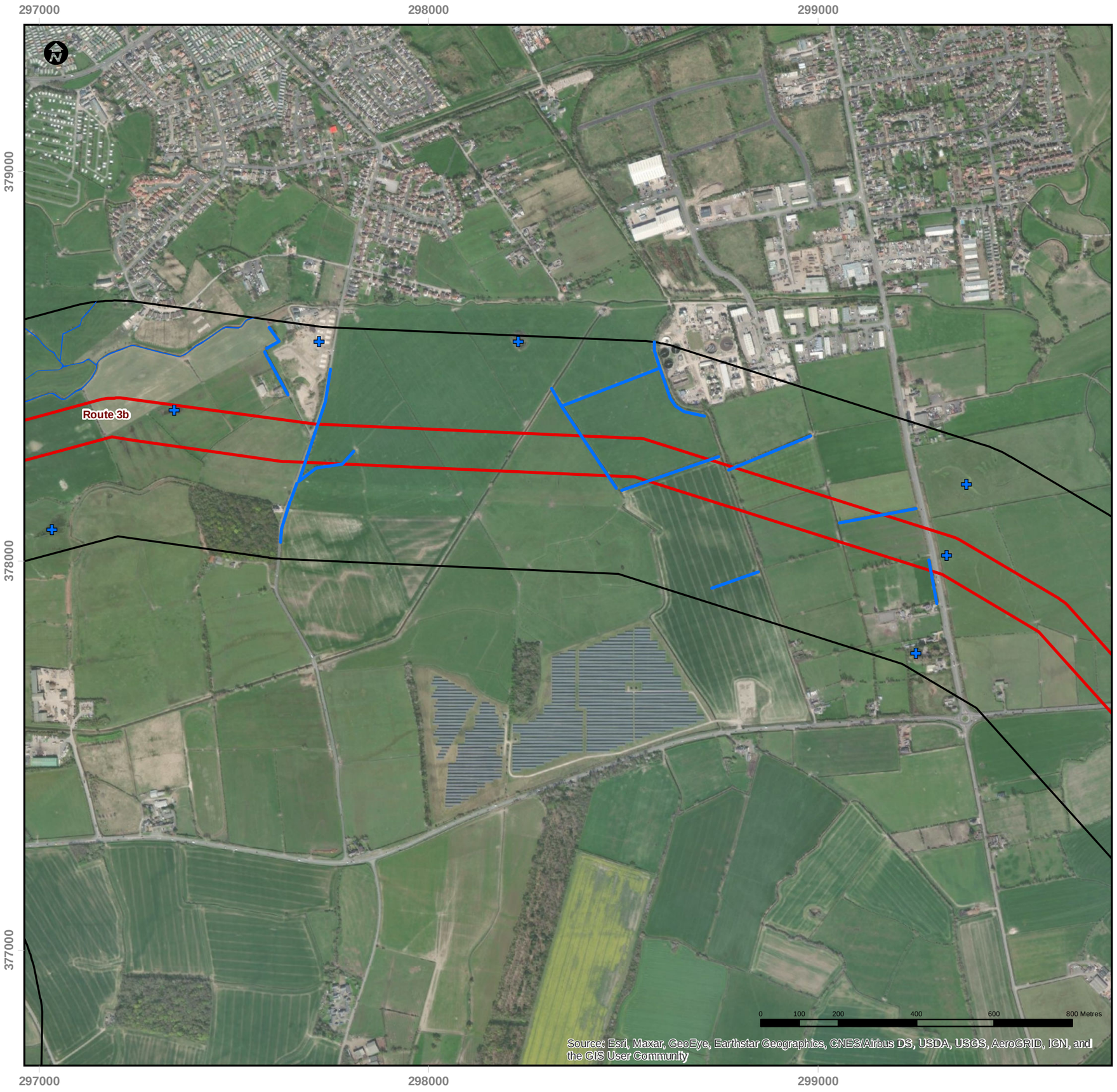

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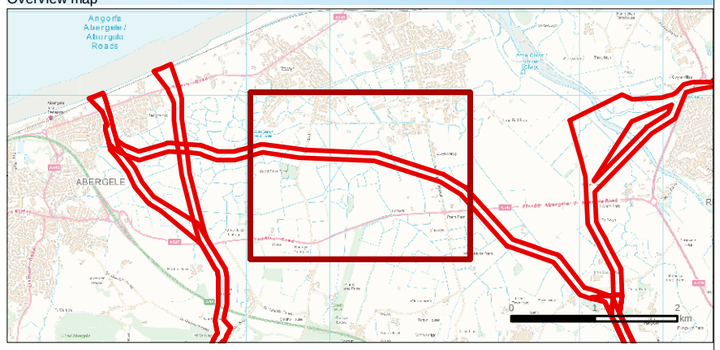

Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 6 of 17**

DRAWN	DATE	SCALE	SIZE
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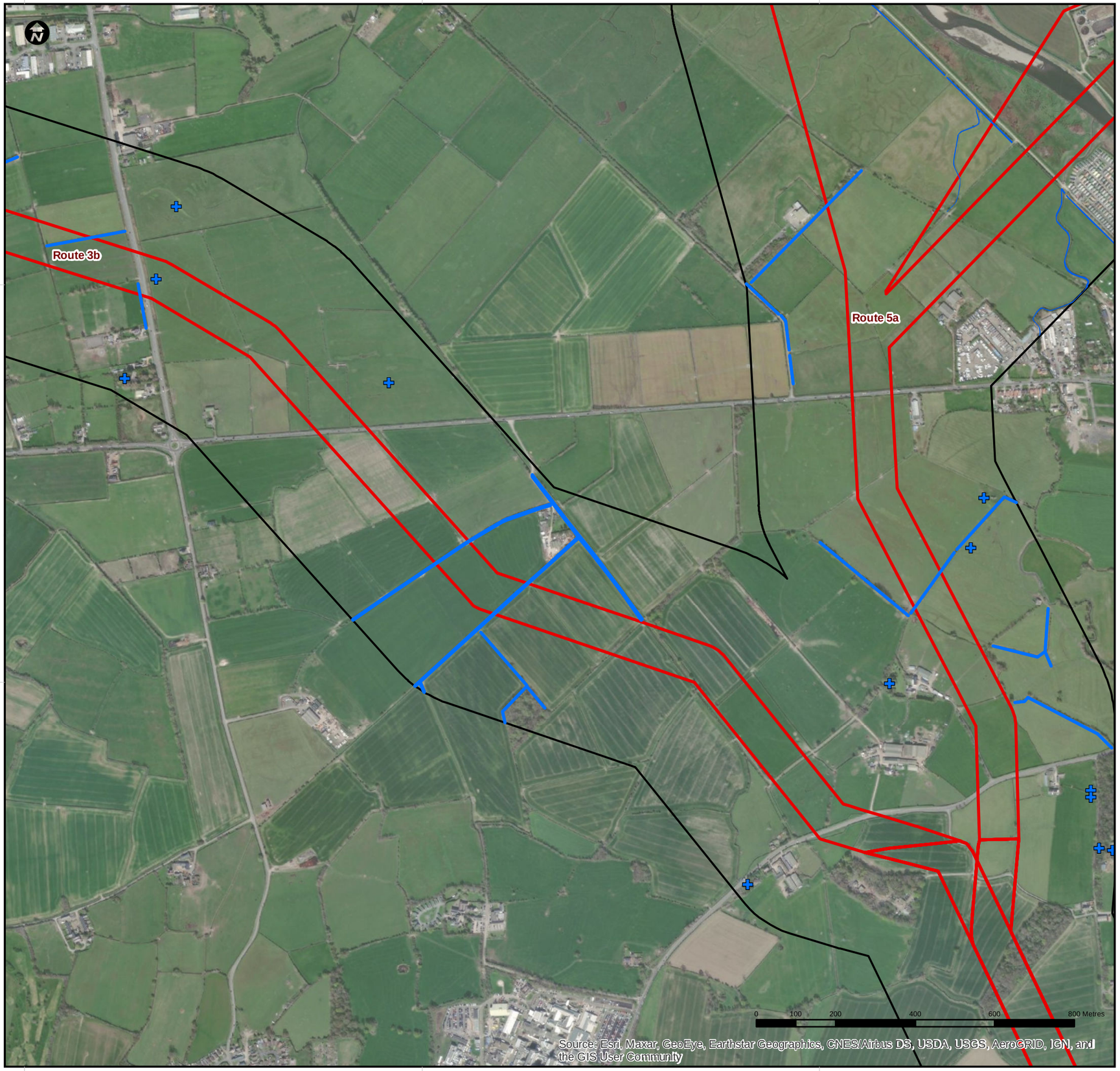

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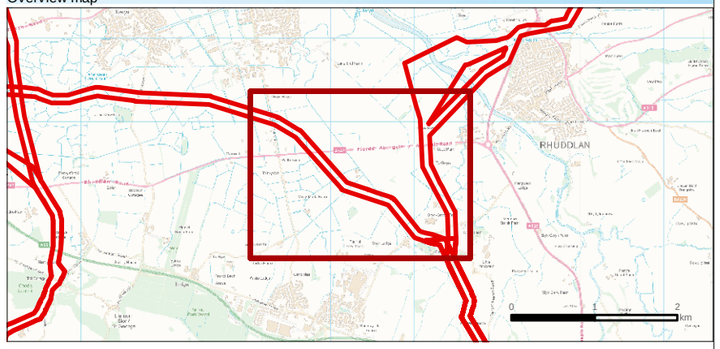
Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 7 of 17**

DRAWN	DATE	SCALE	SIZE
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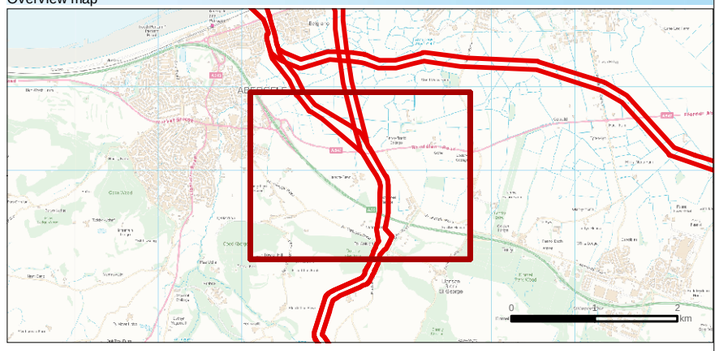
Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 8 of 17**

DRAWN	DATE	SCALE	SIZE
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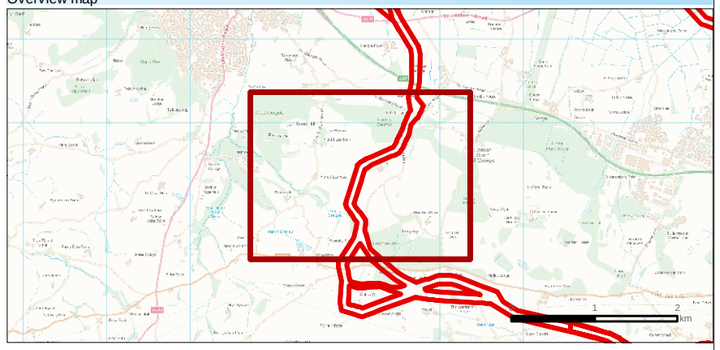
Overview map



Legend

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	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 9 of 17**

DRAWN	DATE	SCALE	SIZE
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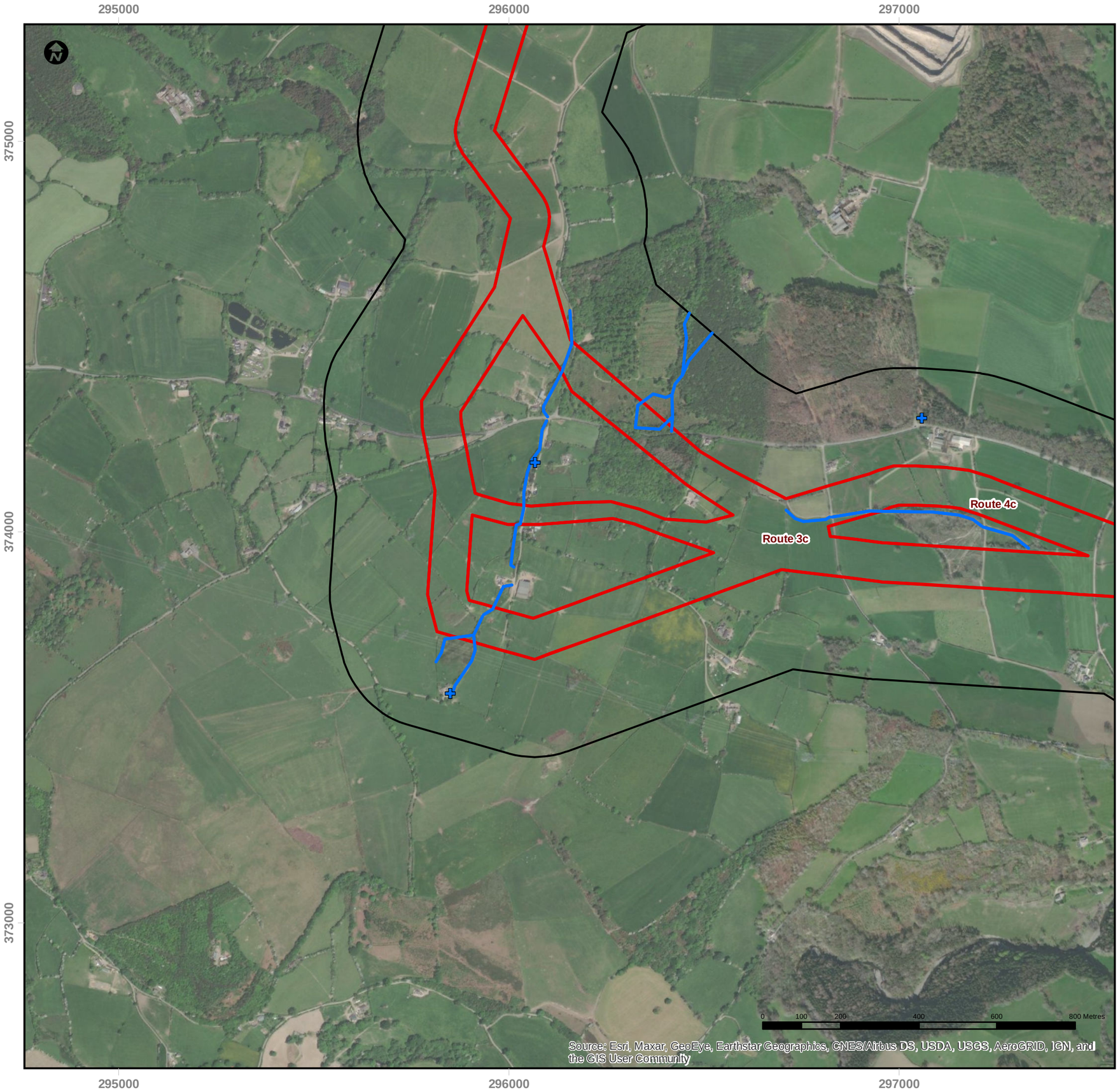
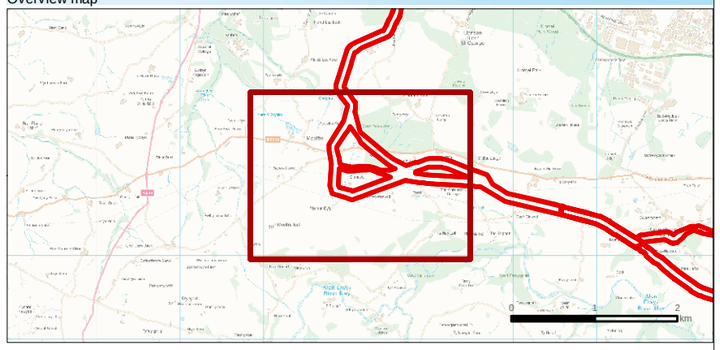


Overview map



Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 10 of 17**

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375000

374000

373000

Route 3c

Route 4c

0 100 200 400 600 800 Metres

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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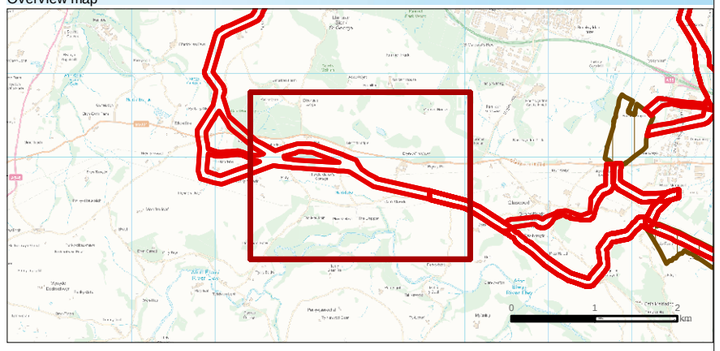
Overview map



Legend

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- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 11 of 17**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:10,000	@DIN A3

DRAWING No.	REV
Drawing 5	01

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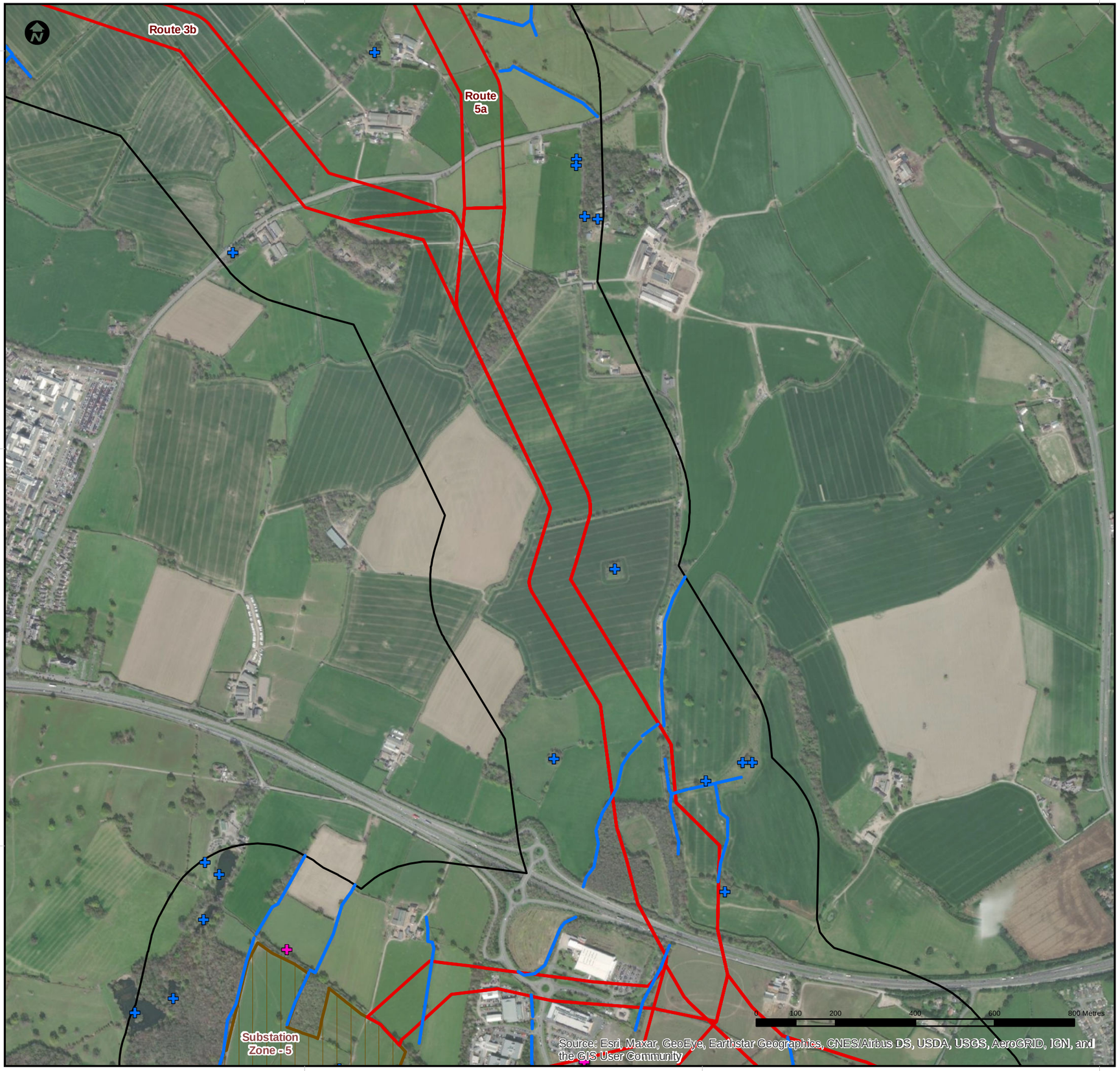

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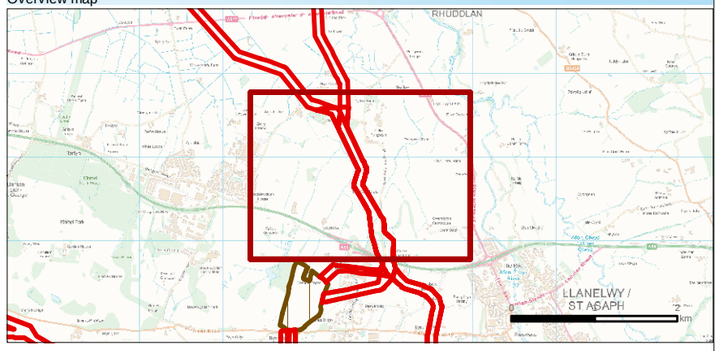

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 12 of 17**

DRAWN	DATE	SCALE	SIZE
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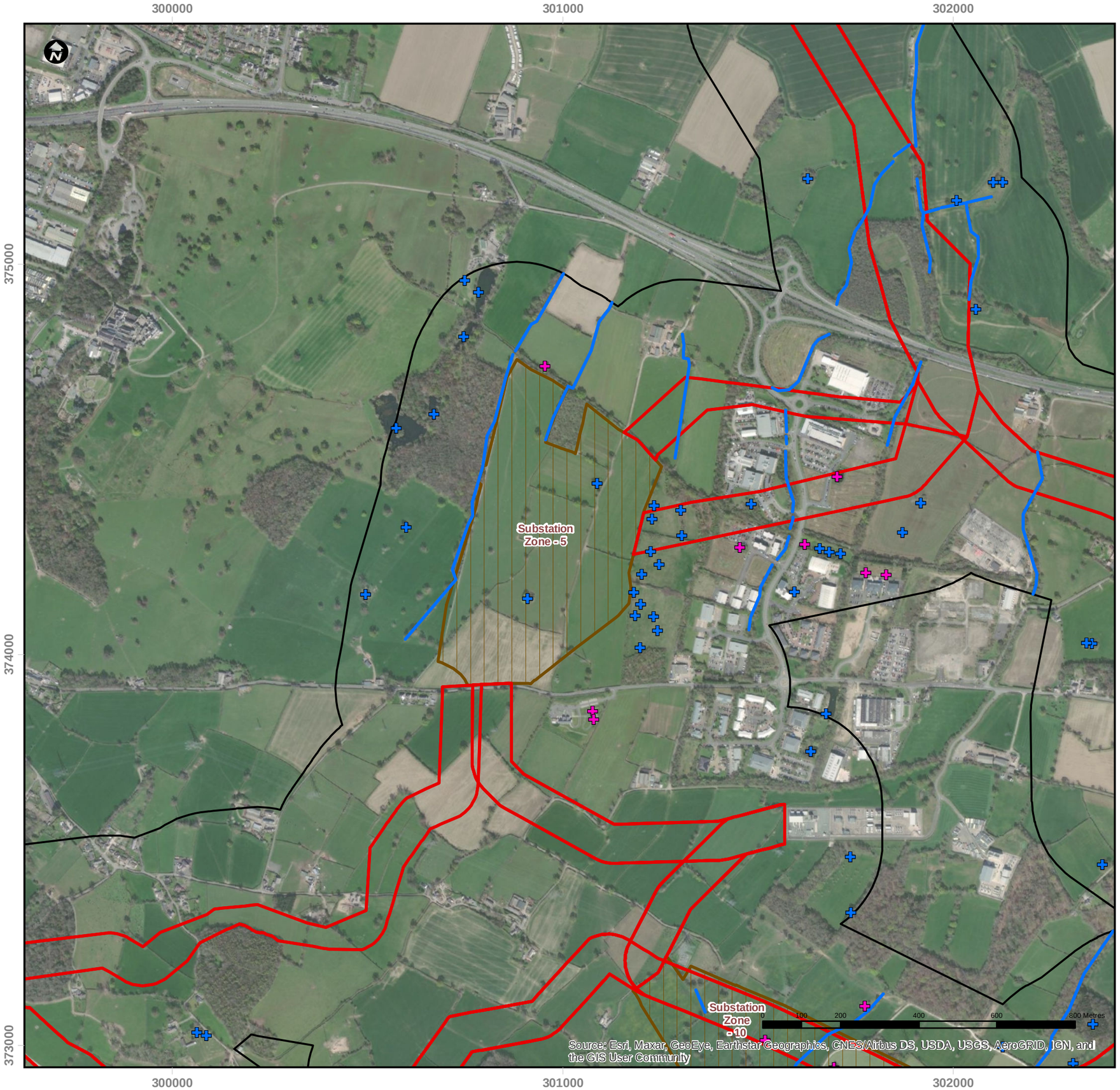

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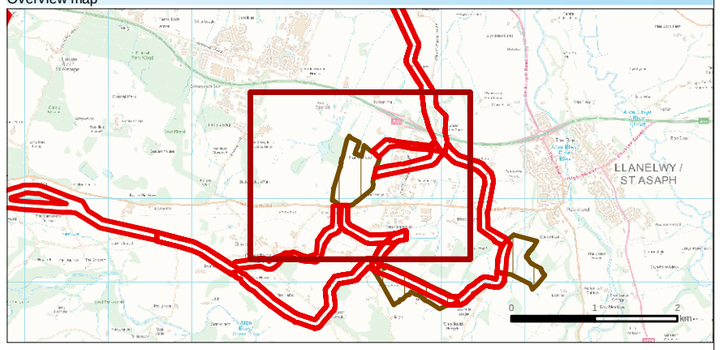

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 13 of 17**

DRAWN	DATE	SCALE	SIZE
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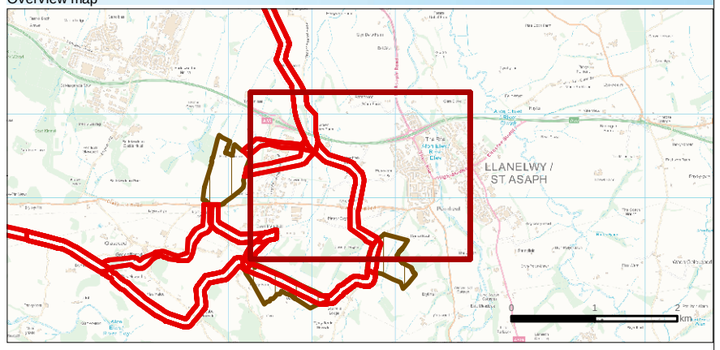
Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 14 of 17**

DRAWN	DATE	SCALE	SIZE
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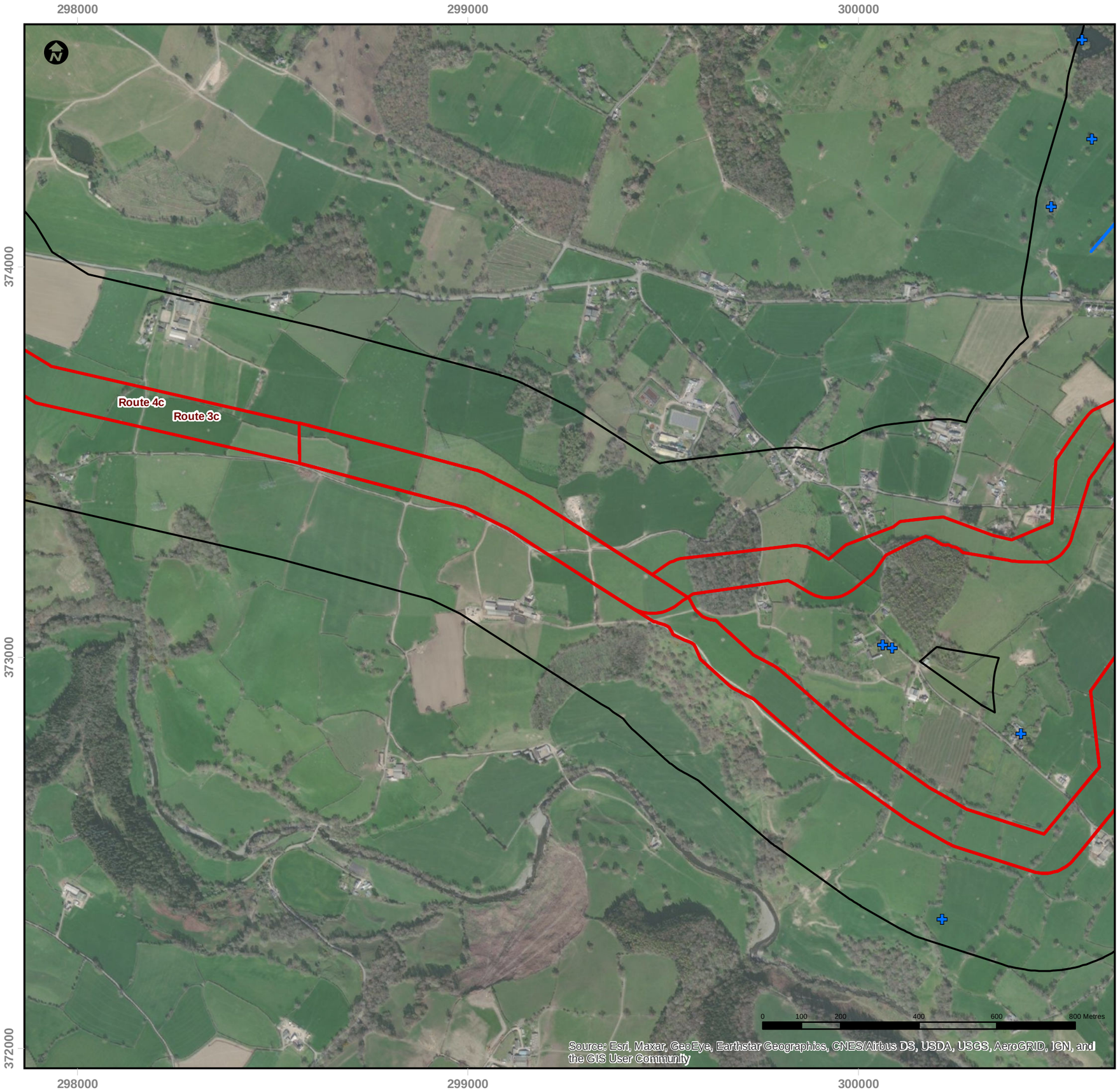

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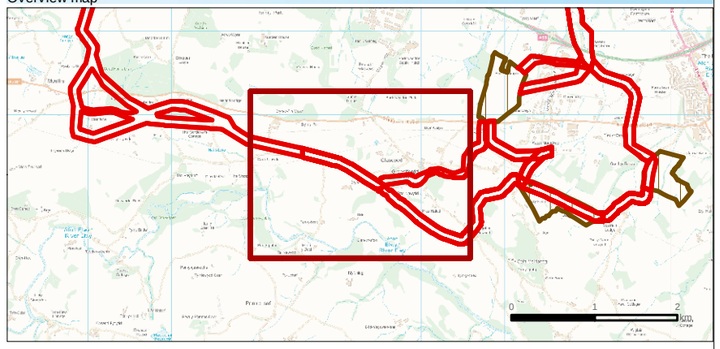

Legend

- Potential Onshore Cable Corridor
- Watercourse / Waterbody Survey Area
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 15 of 17**

DRAWN	DATE	SCALE	SIZE
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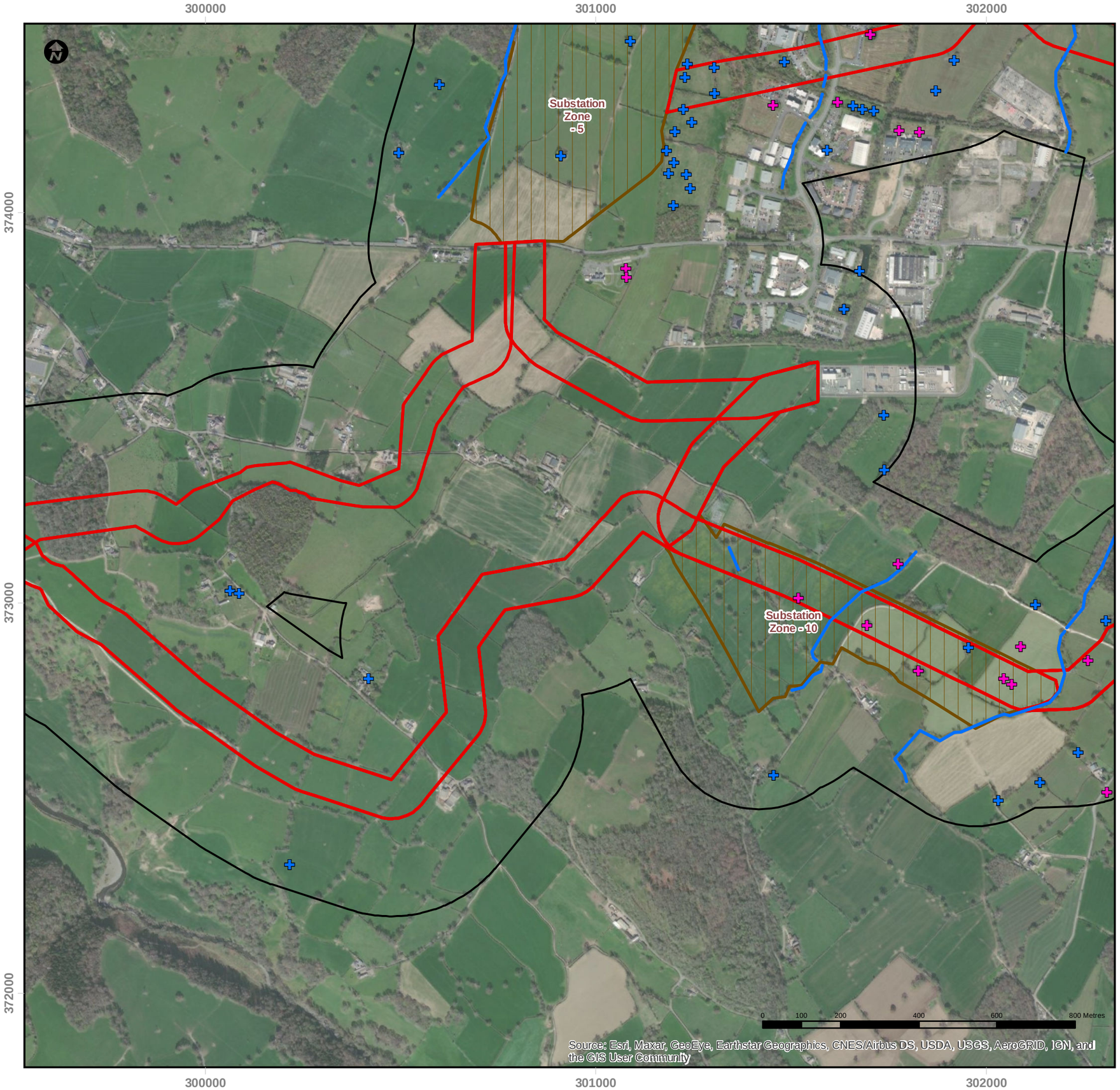
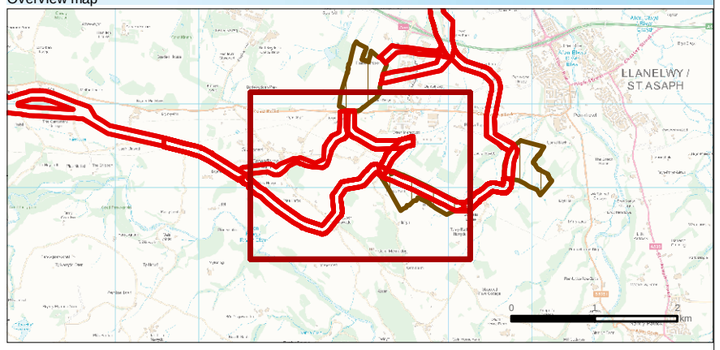


Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 16 of 17**

DRAWN	DATE	SCALE	SIZE
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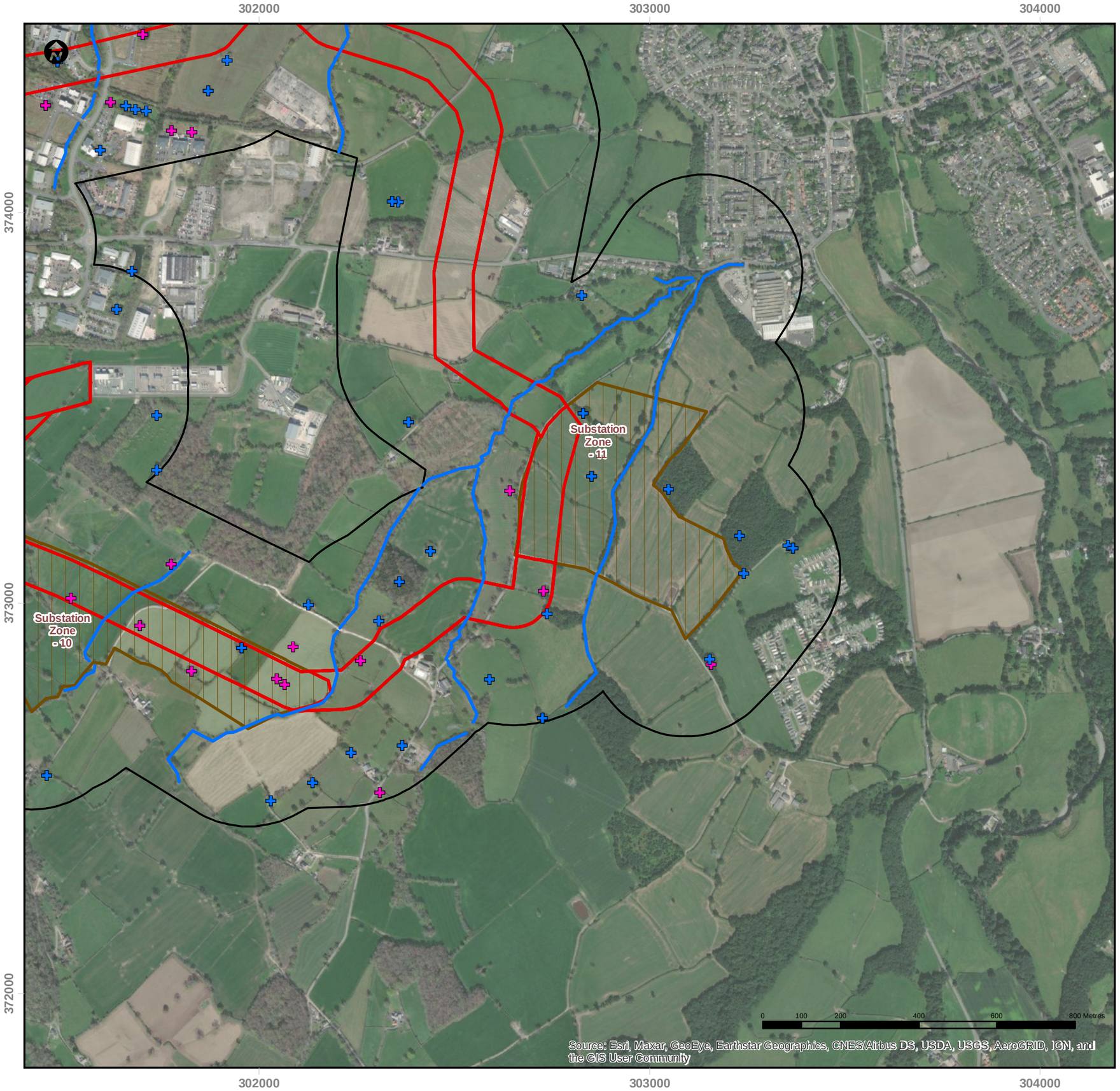

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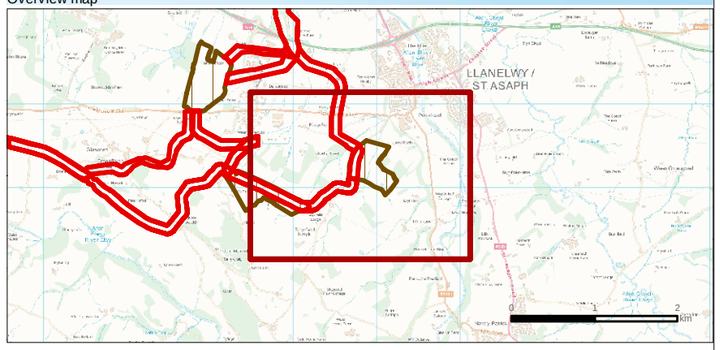

Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- Watercourse / Waterbody Survey Area
- HSI Survey Completed
- HSI Survey Not Undertaken
- Watercourse

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Ponds and Watercourses Plan** **Page 17 of 17**

DRAWN	DATE	SCALE	SIZE
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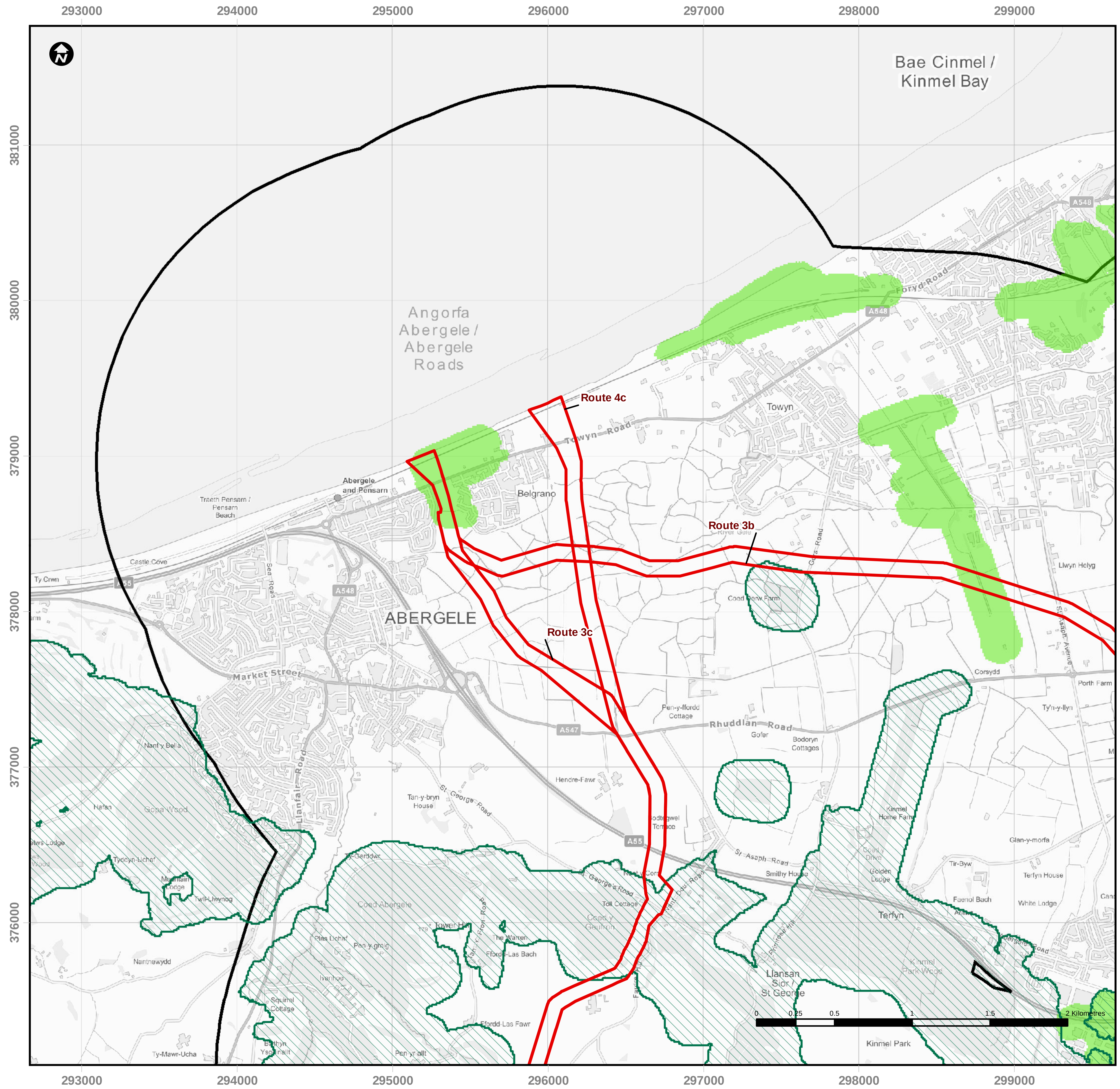
DRAWING 6

Welsh Habitat Network Areas



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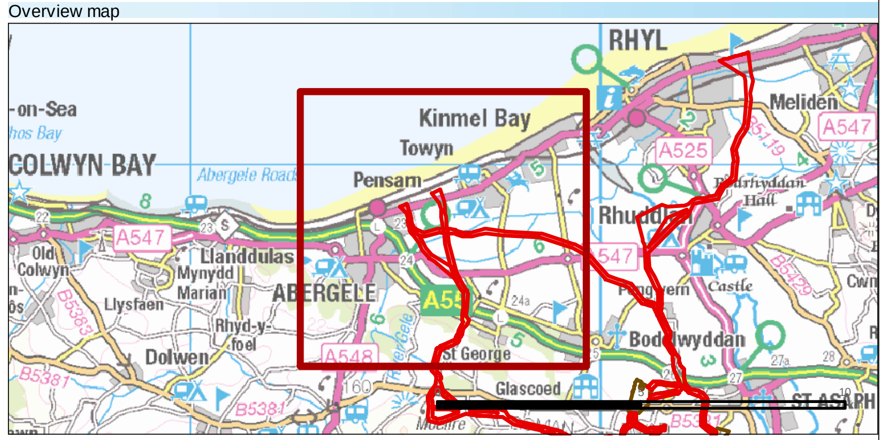

Legend

- Potential Onshore Cable Corridor
- 2km Buffer of Cable Corridor
- Grass Focal Network
- Wood Focal Network

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Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm** **Onshore Preliminary Ecological Appraisal**
TITLE	**Welsh Habitat Network Areas** **Page 1 of 5**
DRAWN: jsalter	DATE: 05/02/2021
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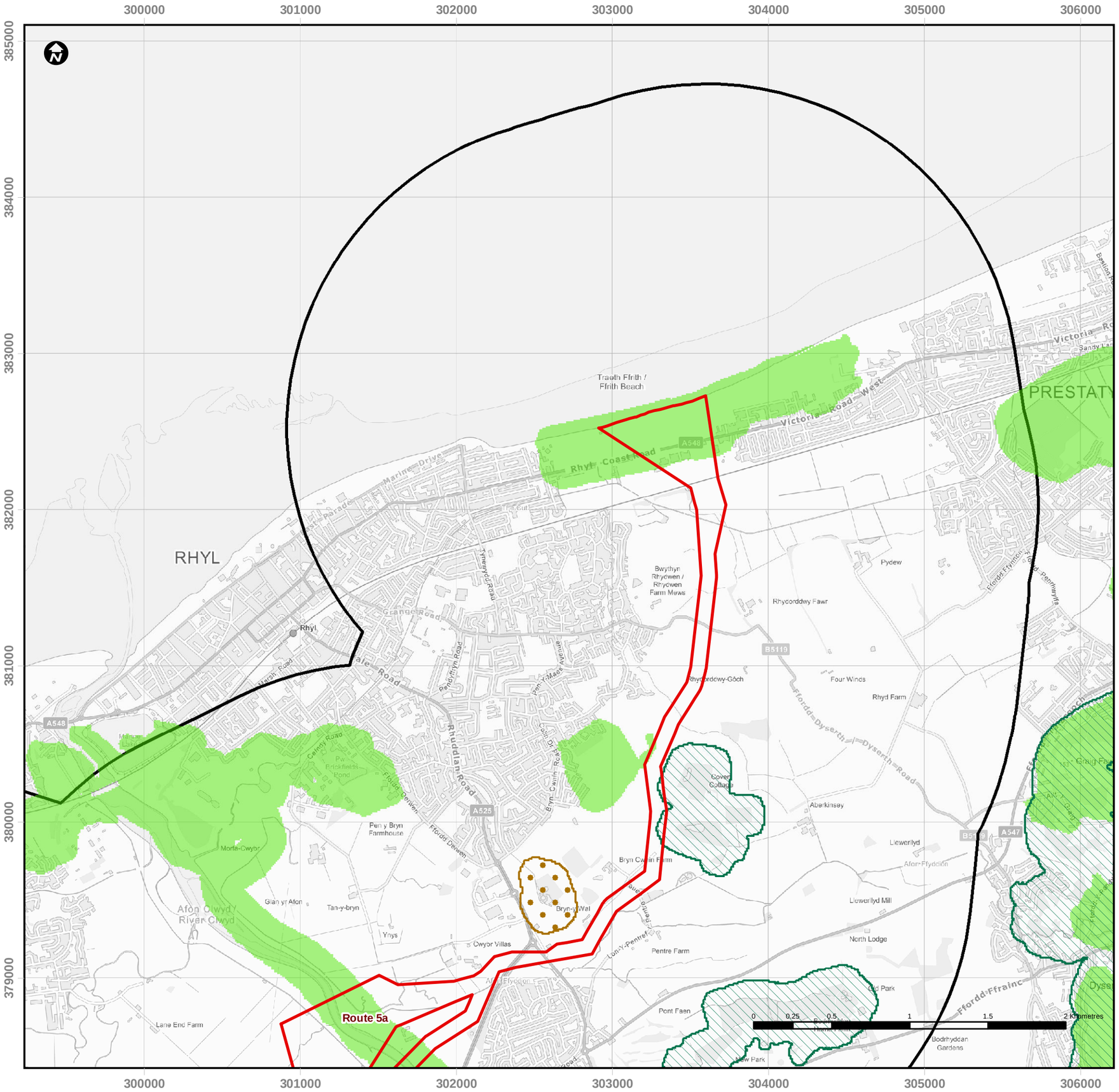

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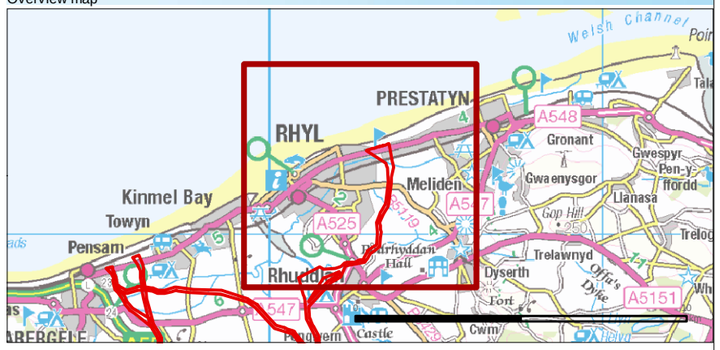

Legend

- Potential Onshore Cable Corridor
- 2km Buffer of Cable Corridor
- Fen Focal Network
- Grass Focal Network
- Wood Focal Network

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Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Welsh Habitat Network Areas Page 2 of 5**

DRAWN	DATE	SCALE	SIZE
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294000 295000 296000 297000 298000 299000 300000

376000 375000 374000 373000 372000 371000

Route 4c

Route 3c

Llansan Sior / St George

Terfyn

Kinmel Park

Moelfre

Moelfre Isaf

Afon Elwy / River Elwy

Pentre Isaf

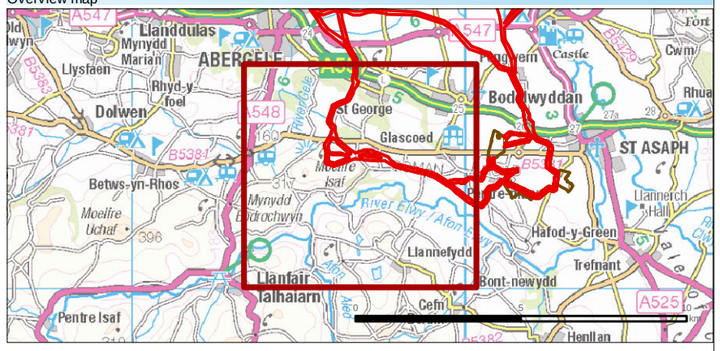
Llannefydd

Glascoed

Groesffordd Marli

0 0.25 0.5 1 1.5 2 Kilometres

Overview map



Legend

- Potential Onshore Cable Corridor
- 2km Buffer of Cable Corridor
- Grass Focal Network
- Heath Focal Network
- Wood Focal Network

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Cartographic information

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Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Welsh Habitat Network Areas Page 3 of 5**
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Route 5a

Route 3b

Route 3c

Route 4c

Substation Zone - 5

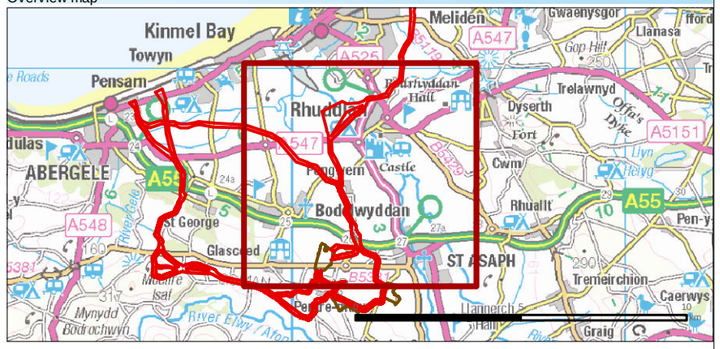
Substation Zone - 11

RHUDDLAN

LLANELWY / ST ASAPH

0 0.25 0.5 1 1.5 2 Kilometres

Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- 2km Buffer of Cable Corridor
- Fen Focal Network
- Grass Focal Network
- Wood Focal Network

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Cartographic information

Coordinate System: British National Grid
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Welsh Habitat Network Areas** **Page 4 of 5**
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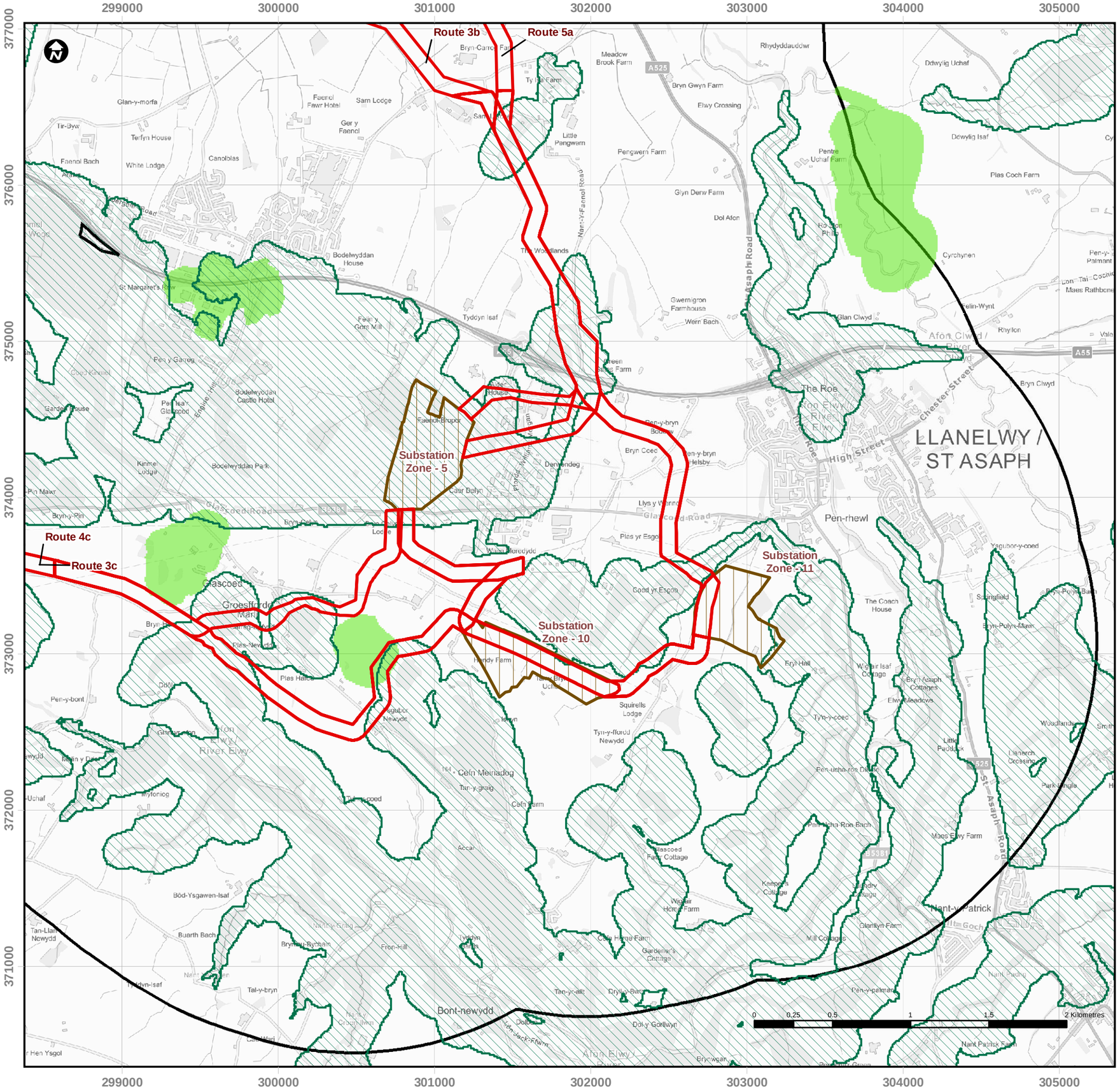
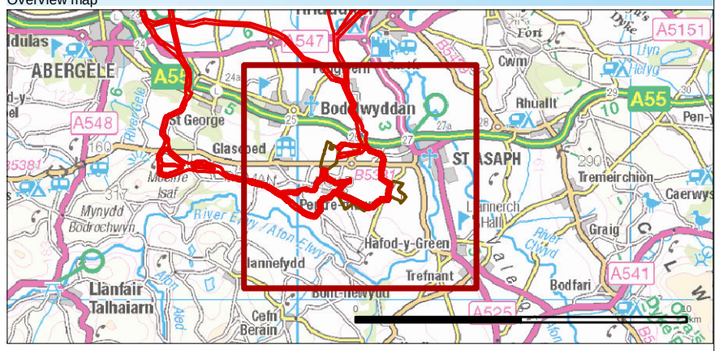


Overview map



Legend

- Potential Onshore Cable Corridor
- Potential Substation Zone
- 2km Buffer of Cable Corridor
- Grass Focal Network
- Wood Focal Network

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Map information

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AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Welsh Habitat Network Areas Page 5 of 5**

DRAWN	DATE	SCALE	SIZE
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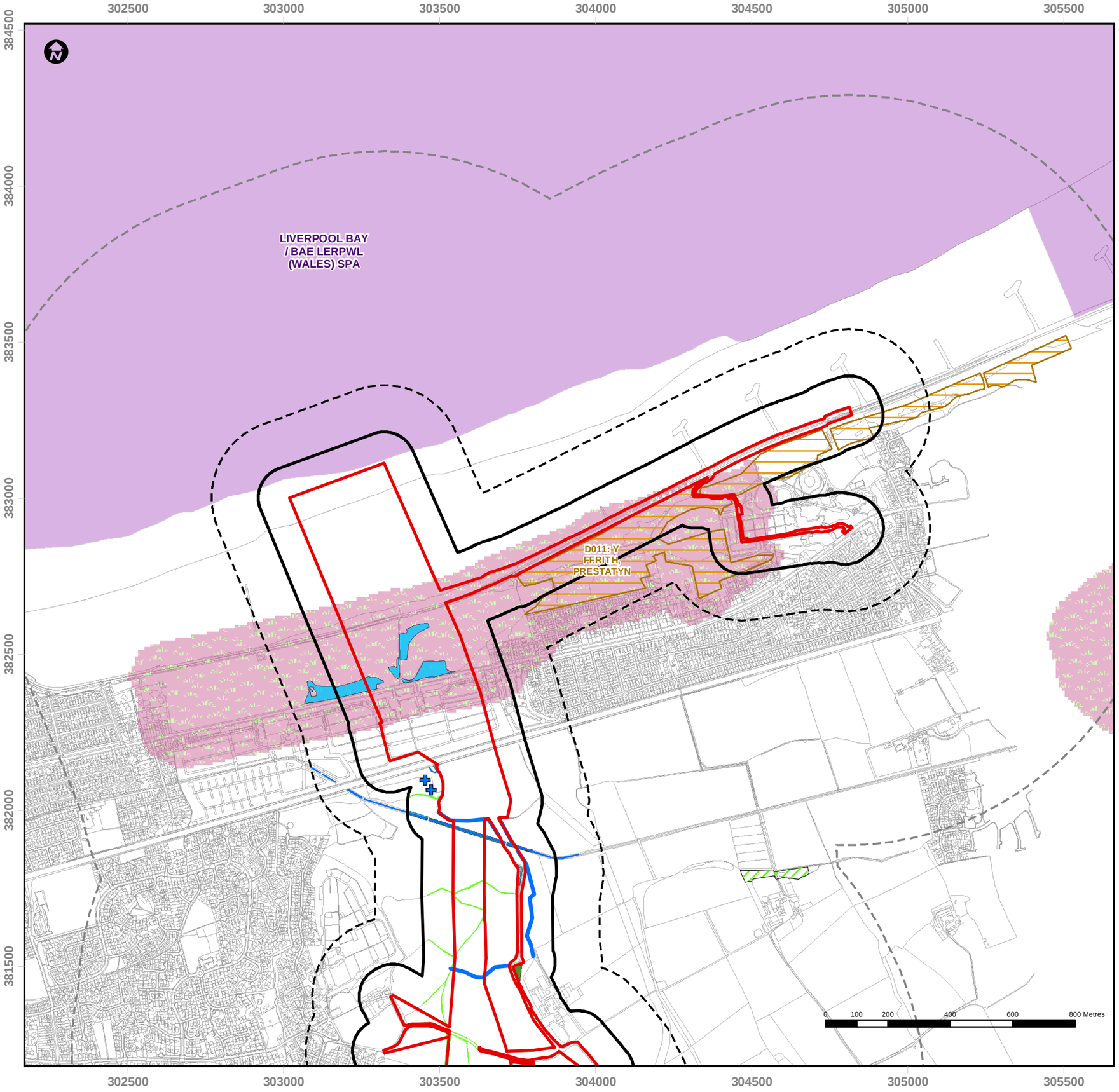
DRAWING 7

Preferred Cable Route, Landfall and Substation: Important Sites and Habitats



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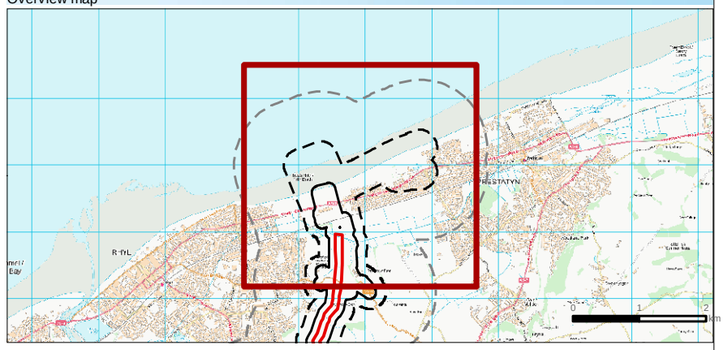

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Preferred Cable Corridor and Infrastructure 1km Buffer
- Watercourse
- Reedbed
- Hedgerow
- Woodland

Designated Sites

- Special Protection Area (SPA)
- Local Wildlife Site
- Ancient Woodland Site

Welsh Habitat Network Areas

- Grass Focal Network

Habitats of Importance (PEA Survey)

- Pond

Habitats of Importance Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Preferred Route, Landfall and Substation: Important Sites and Habitats Page 1 of 5**

DRAWN	DATE	SCALE	SIZE
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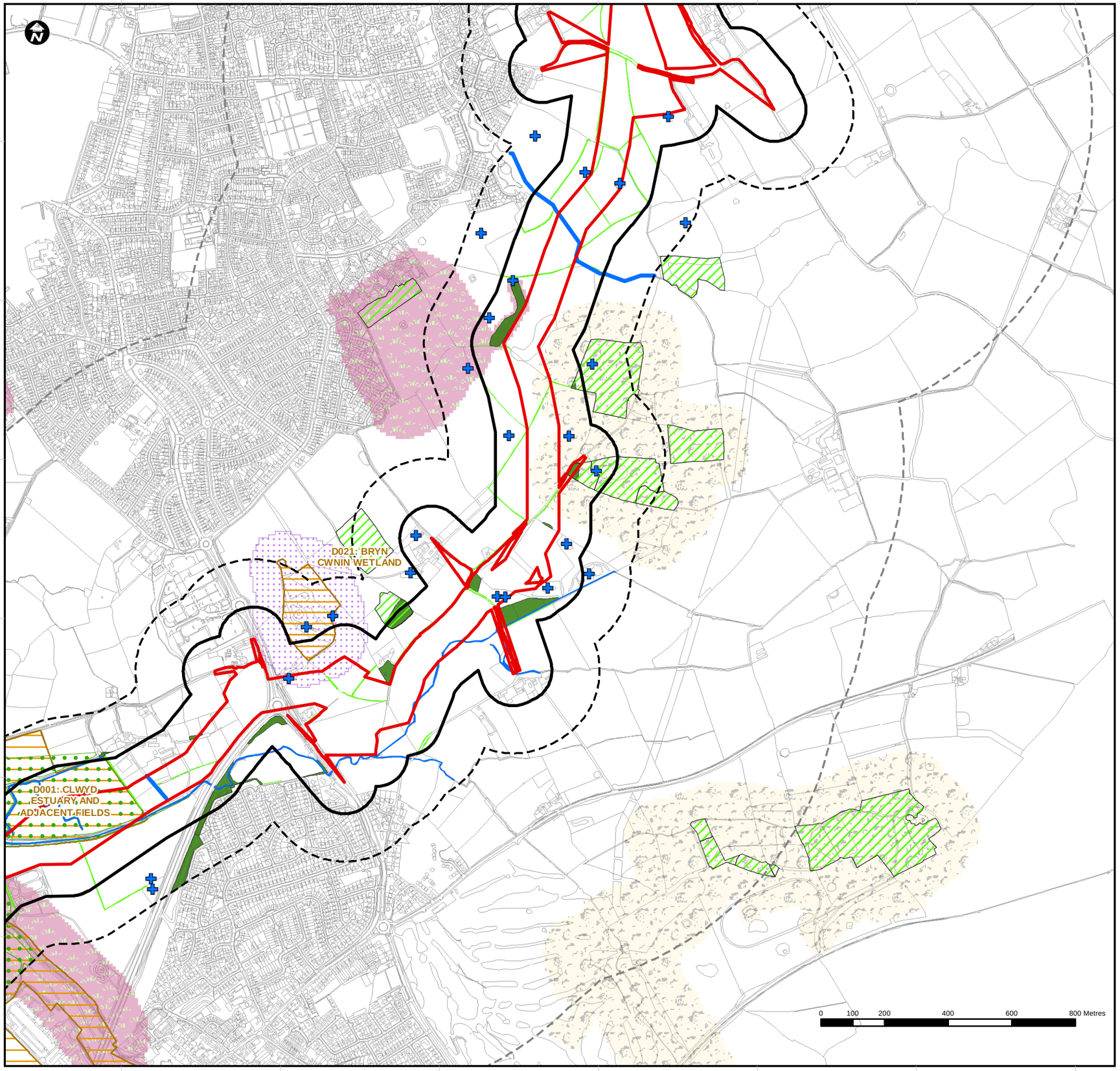
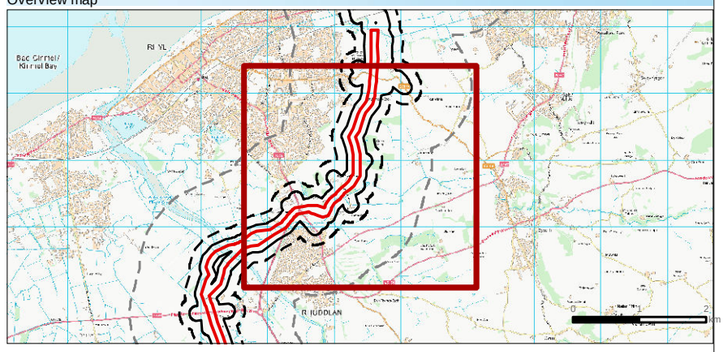


Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Preferred Cable Corridor and Infrastructure 1km Buffer
- Watercourse
- Coastal and Floodplain Grazing Marsh
- Reedbed
- Hedgerow
- Woodland

Designated Sites

- Local Wildlife Site
- Ancient Woodland Site

Welsh Habitat Network Areas

- Fen Focal Network
- Wood Focal Network
- Grass Focal Network

Habitats of Importance (PEA Survey)

- Pond

Habitats of Importance Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Preferred Route, Landfall and Substation: Important Sites and Habitats Page 2 of 5**

DRAWN	DATE	SCALE	SIZE
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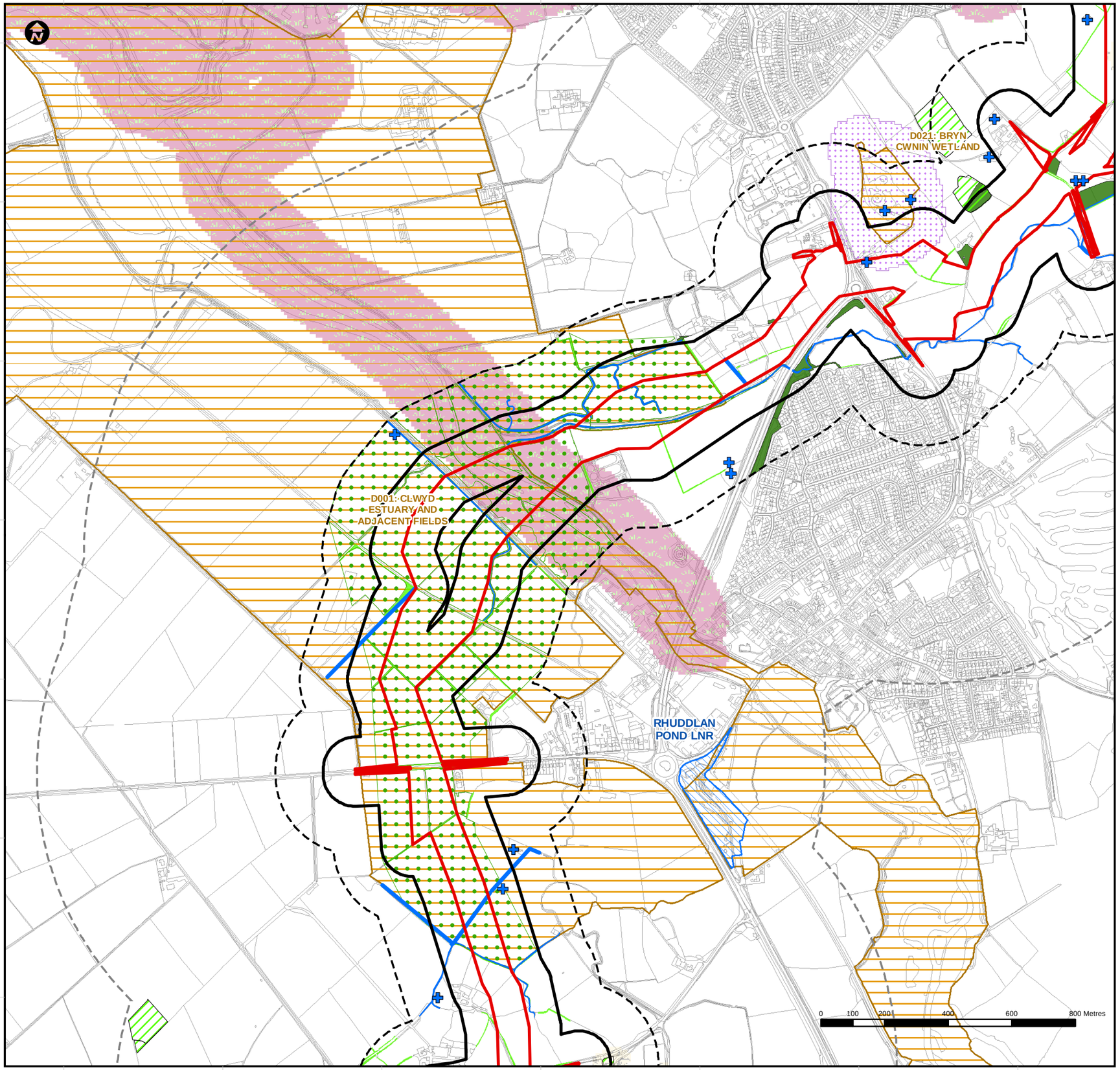
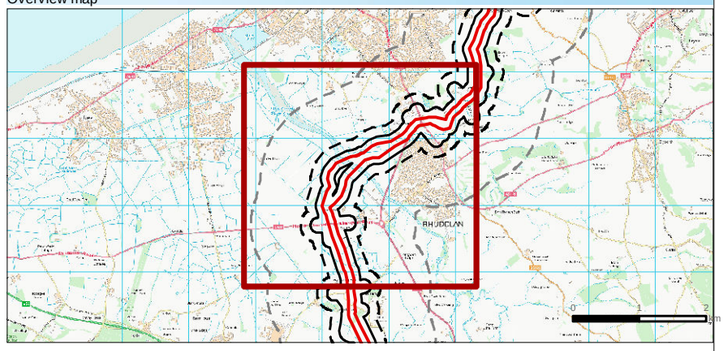


Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Preferred Cable Corridor and Infrastructure 1km Buffer
- Pond
- Watercourse
- Coastal and Floodplain Grazing Marsh
- Hedgerow
- Woodland

Designated Sites

- Local Nature Reserve (LNR)
- Local Wildlife Site
- Ancient Woodland Site

Welsh Habitat Network Areas

- Fen Focal Network
- Wood Focal Network
- Grass Focal Network

Habitats of Importance (PEA Survey)

Habitats of Importance Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

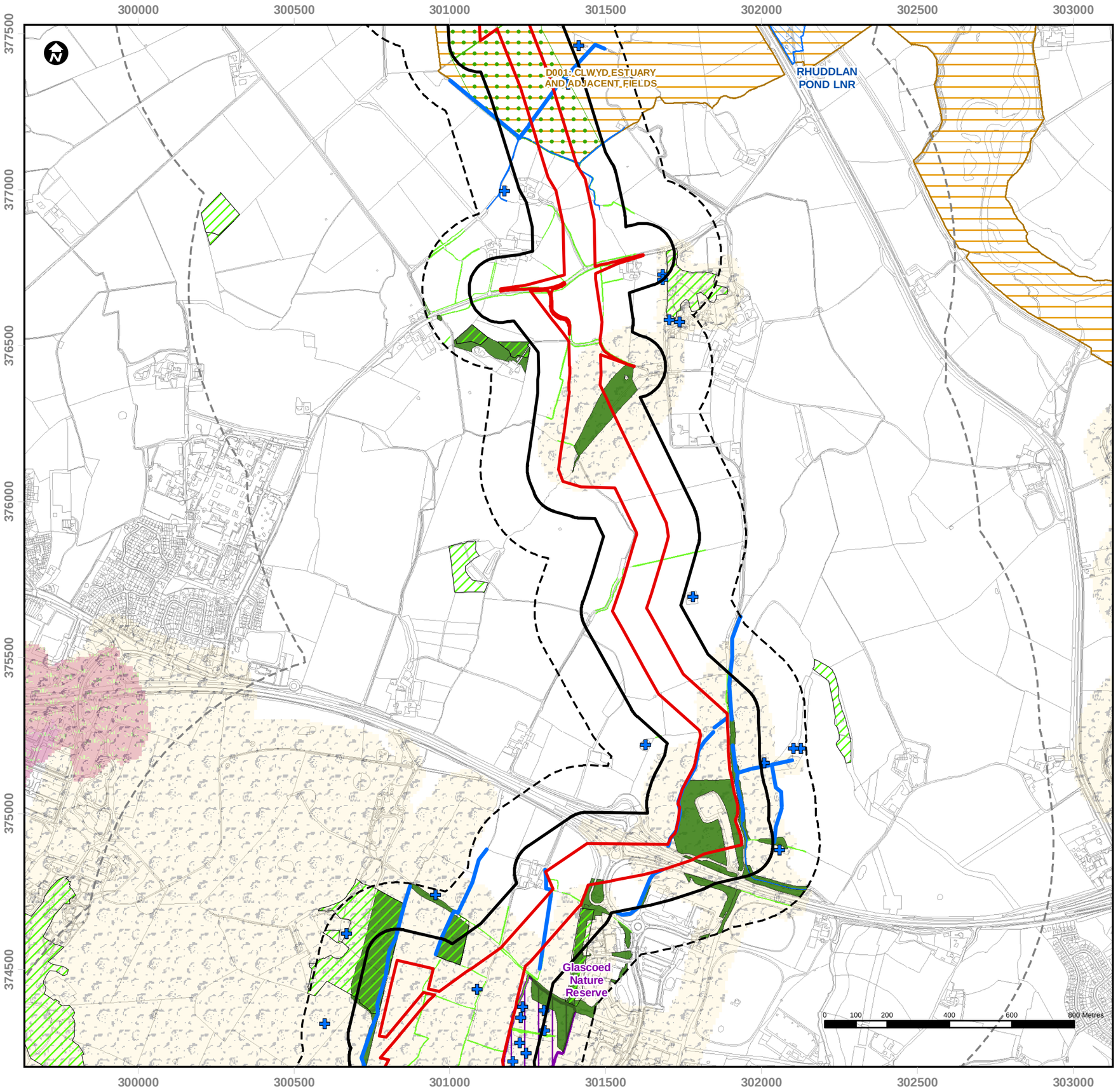
Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Preferred Route, Landfall and Substation: Important Sites and Habitats** **Page 3 of 5**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:12,500	@DIN A3

DRAWING No.	REV
Drawing 7	01

Path: \\gisfs\Projects\05356 - GoBe Consultants Ltd\00009 Awel y Mor\Tech\GIS\Dwgs\Wking\202101 PEA\05356.00009.0076.1 Preferred Option Important Ecological Features.mxd



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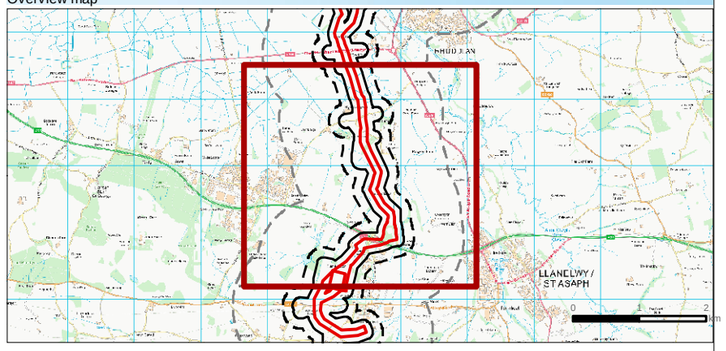

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Preferred Cable Corridor and Infrastructure 1km Buffer
- Pond
- Watercourse
- Coastal and Floodplain Grazing Marsh
- Hedgerow
- Woodland

Designated Sites

- Local Nature Reserve (LNR)
- Local Wildlife Site
- Ancient Woodland Site
- Other Nature Reserve

Welsh Habitat Network Areas

- Wood Focal Network
- Grass Focal Network

Habitats of Importance (PEA Survey)

Habitats of Importance Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Preferred Route, Landfall and Substation: Important Sites and Habitats Page 4 of 5**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:12,500	@DIN A3

DRAWING No.	REV
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299500 300000 300500 301000 301500 302000 302500

375000 374500 374000 373500 373000 372500 372000

Glascoed Nature Reserve

D003/1: PLAS NEWYDD/COED CARREG DAFYDD

D032: COED CORD / COED Y SAESON

D003: COED Y DDOL/COED Y FADIR

D034: TY'N-Y-COED ROUGH (2 AREAS)

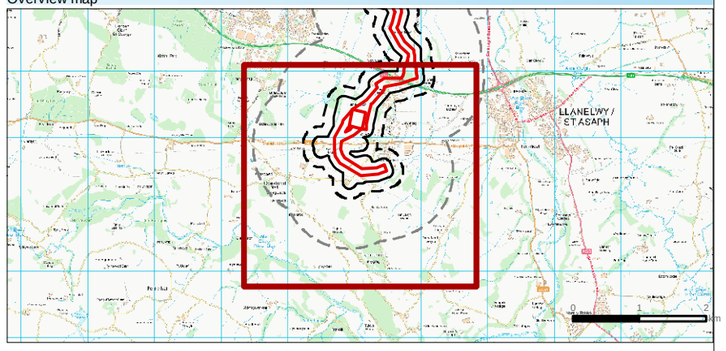
D035: BRYN MEIRIADOG

COEDYDD AC OGOFAU ELWY A MEIRCHION SSSI

COEDWIGOEDD DYFFRYN ELWY / ELWY VALLEY WOODS SAC

0 100 200 400 600 800 Metres

Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Preferred Cable Corridor and Infrastructure 1km Buffer

Designated Sites

- Special Area of Conservation (SAC)
- Sites of Special Scientific Interest (SSSI)
- Local Wildlife Site
- Ancient Woodland Site
- Other Nature Reserve

Welsh Habitat Network Areas

- Wood Focal Network
- Grass Focal Network

Habitats of Importance (PEA Survey)

- Pond
- Watercourse
- Coastal and Floodplain Grazing Marsh
- Hedgerow
- Woodland

Habitats of Importance Note:

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Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Preferred Route, Landfall and Substation: Important Sites and Habitats Page 5 of 5**

DRAWN	DATE	SCALE	SIZE
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DRAWING No.	REV
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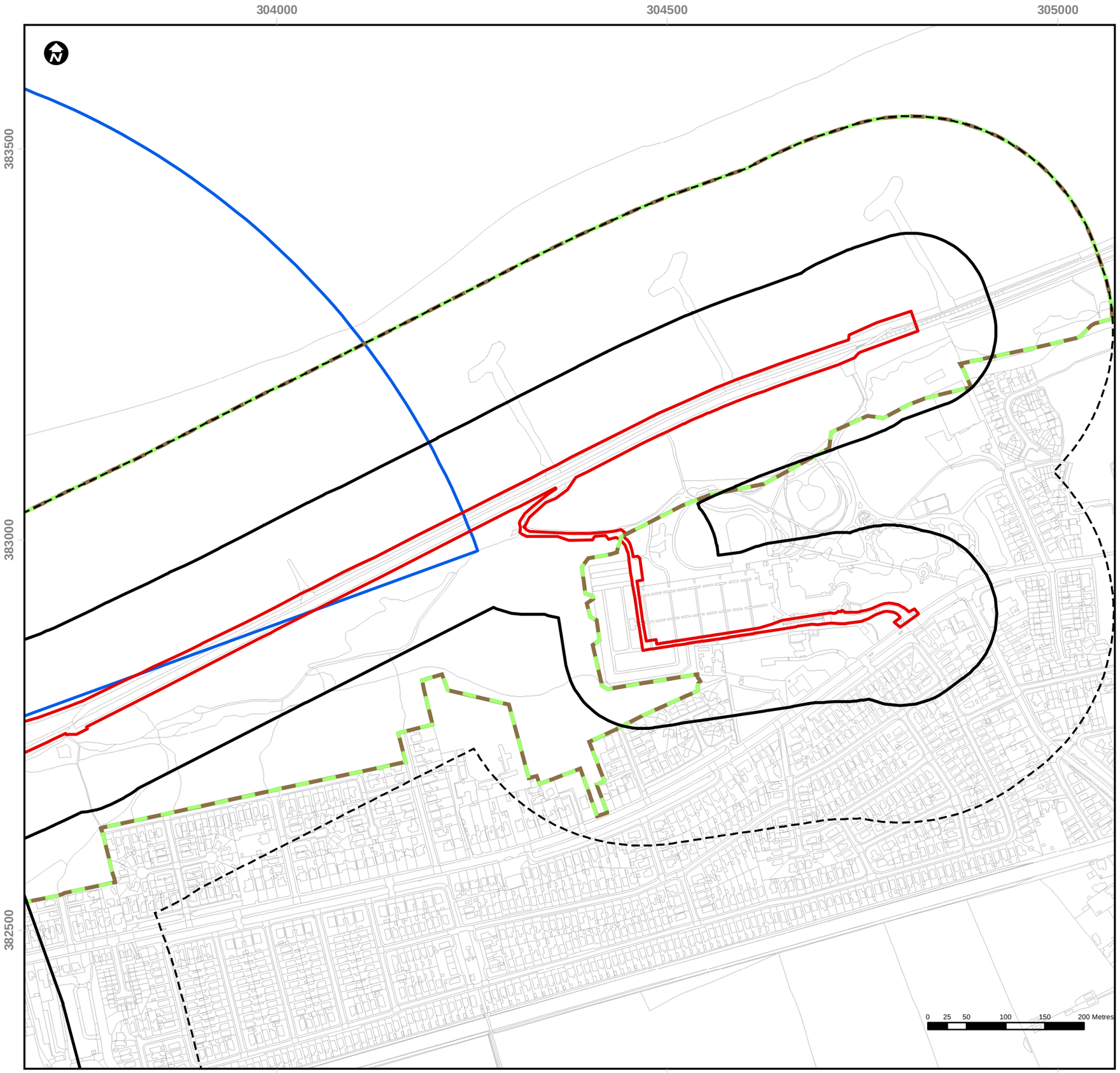
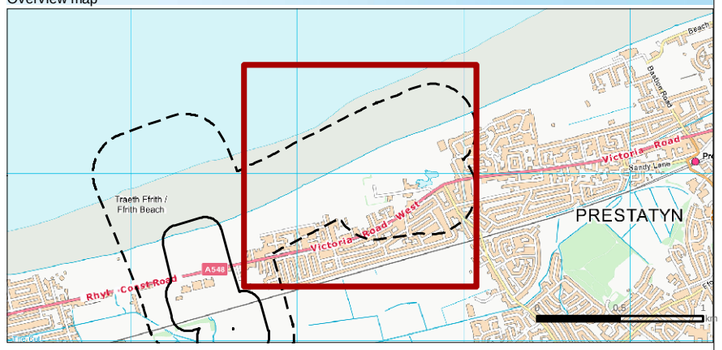
DRAWING 8

Suitable Habitat for Important Fauna: Proposed Survey Areas



Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Breeding Bird Survey Area
- Winter Bird Survey - Landfall Intertidal Survey 1km Viewshed

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas Page 1 of 13**

DRAWN	DATE	SCALE	SIZE
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DRAWING No.	REV
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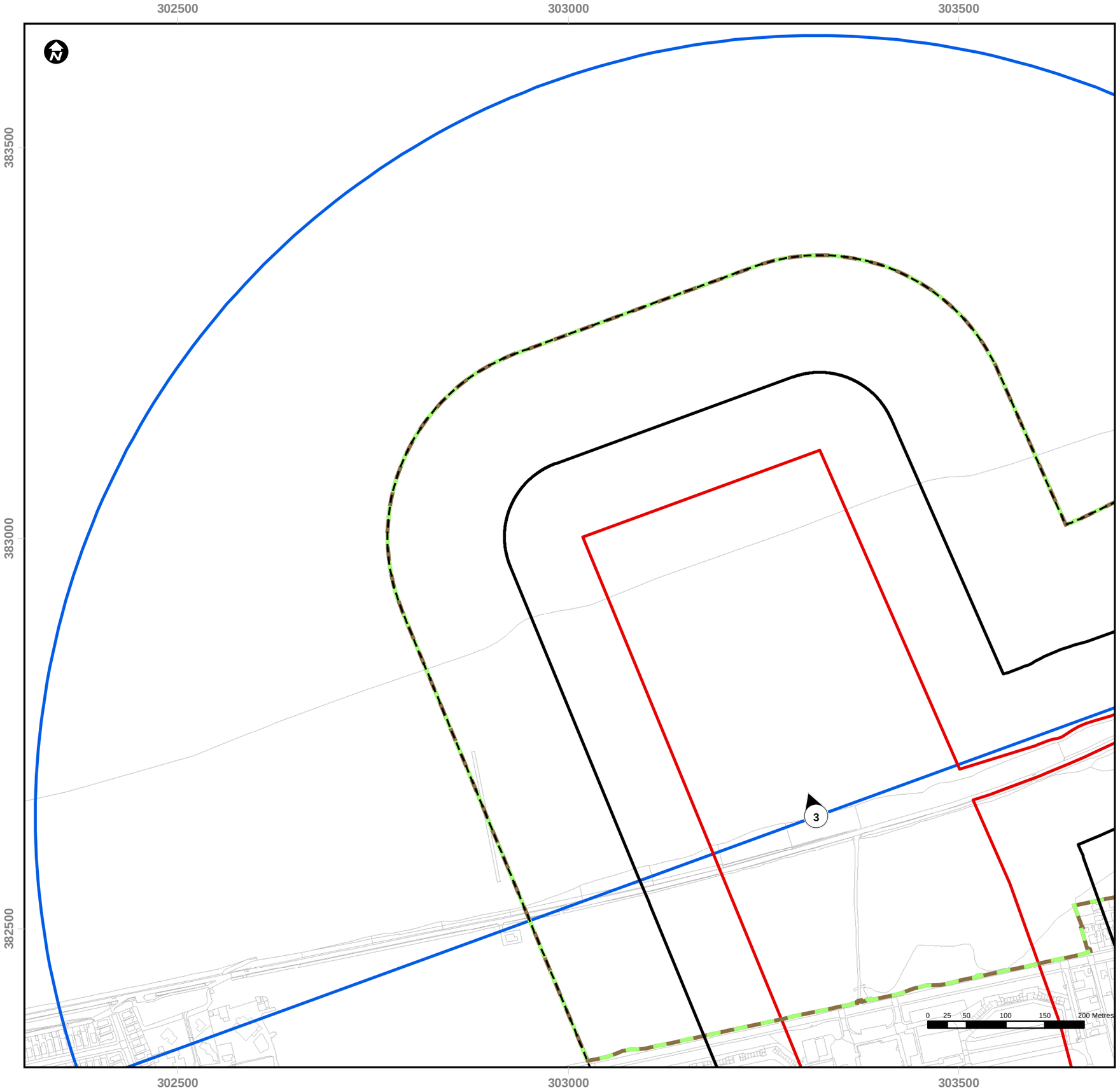

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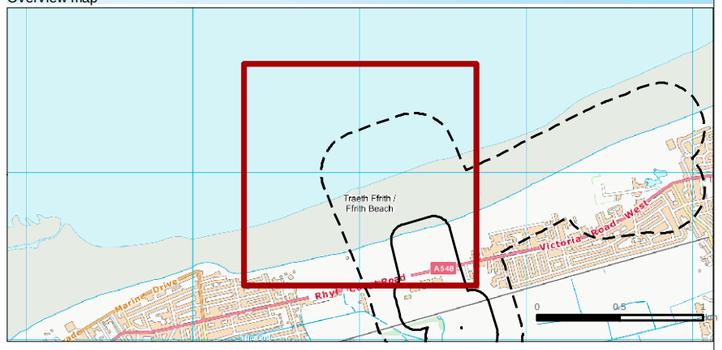

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Breeding Bird Survey Area
- Winter Bird Survey - Landfall Intertidal Survey Location
- Winter Bird Survey - Landfall Intertidal Survey 1km Viewshed

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 2 of 13**

DRAWN	DATE	SCALE	SIZE
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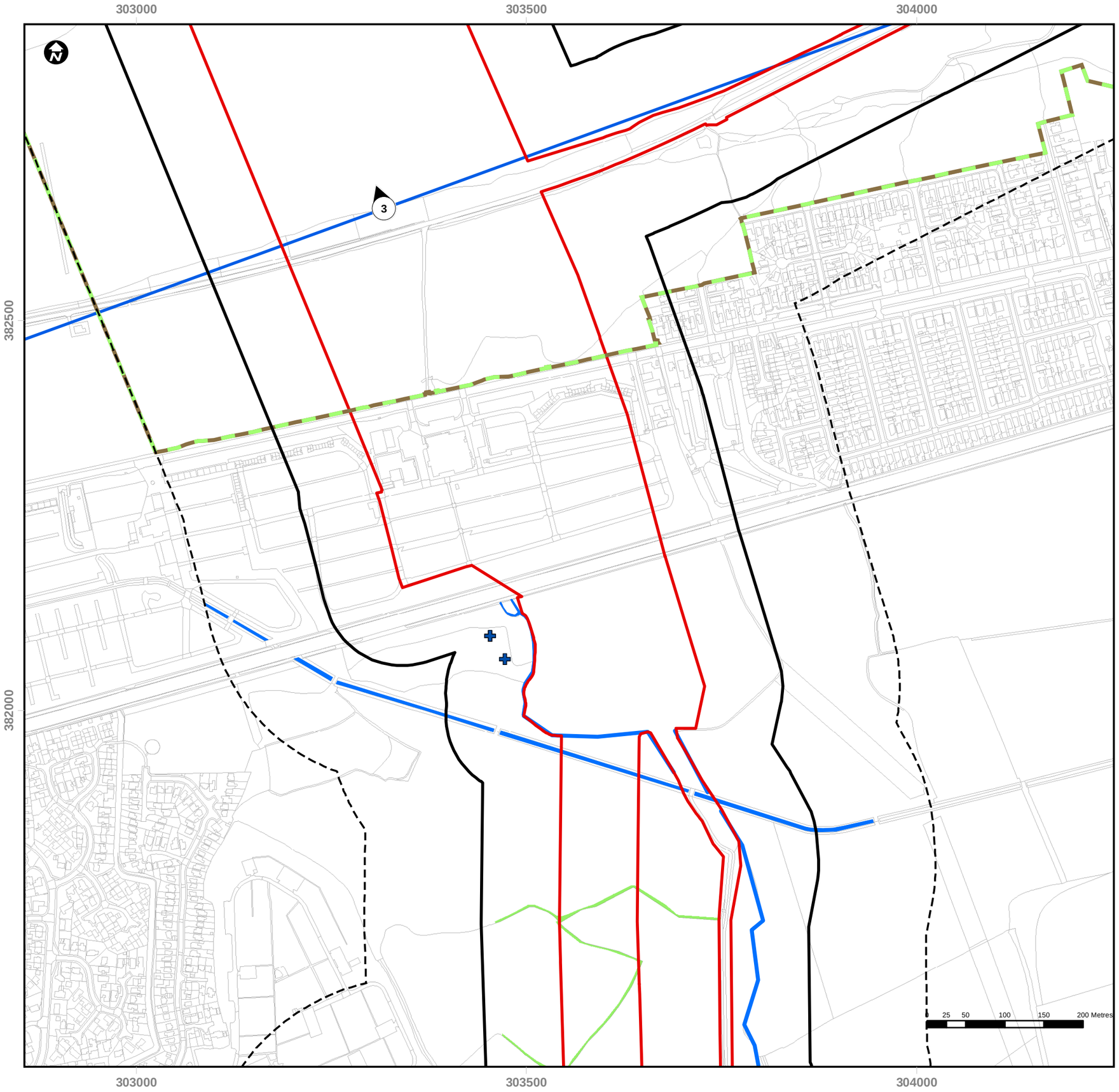

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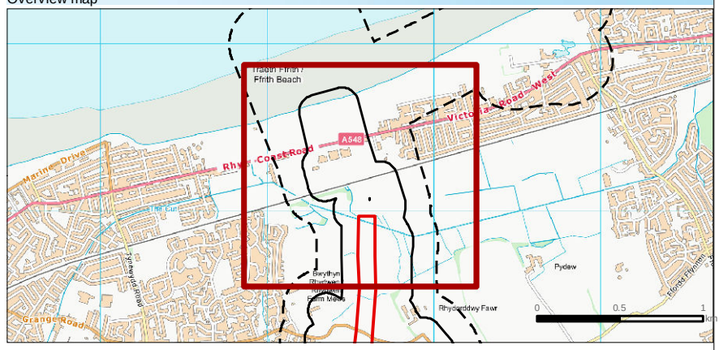

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Pond Subject to Population Size Class Assessment, Unless Pre-existing Data Exists
- Otter and Water Vole Survey Area
- Bat Activity Survey
- Breeding Bird Survey Area
- Winter Bird Survey - Landfall Intertidal Survey Location
- Winter Bird Survey - Landfall Intertidal Survey 1km Viewshed

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 3 of 13**

DRAWN	DATE	SCALE	SIZE
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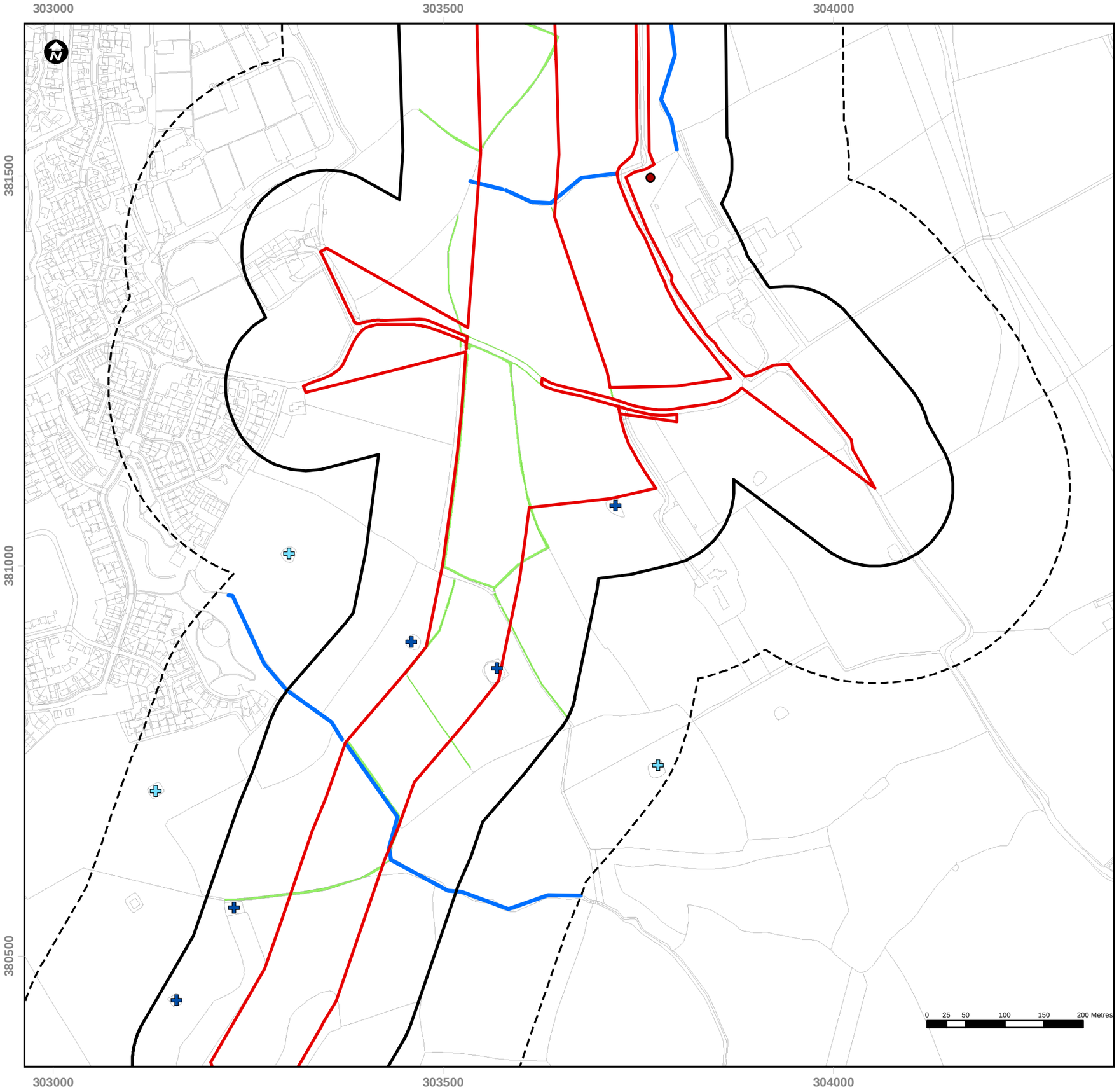

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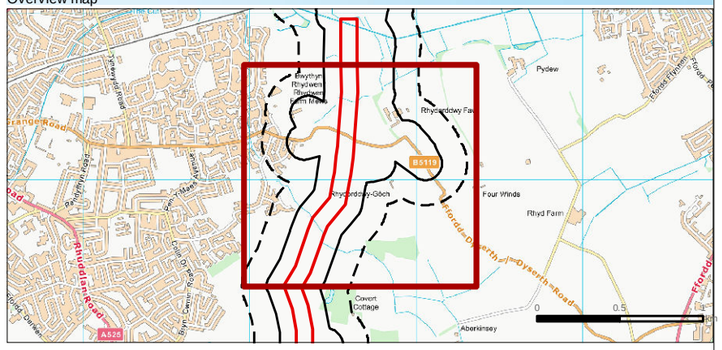

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Tree with Potential Bat Roost Feature
- Pond Subject to GCN Presence/Absence Survey, Unless Pre-existing Data Exists
- Pond Subject to Population Size Class Assessment, Unless Pre-existing Data Exists
- Otter and Water Vole Survey Area
- Bat Activity Survey

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

	PROJECT Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 4 of 13**

DRAWN	DATE	SCALE	SIZE
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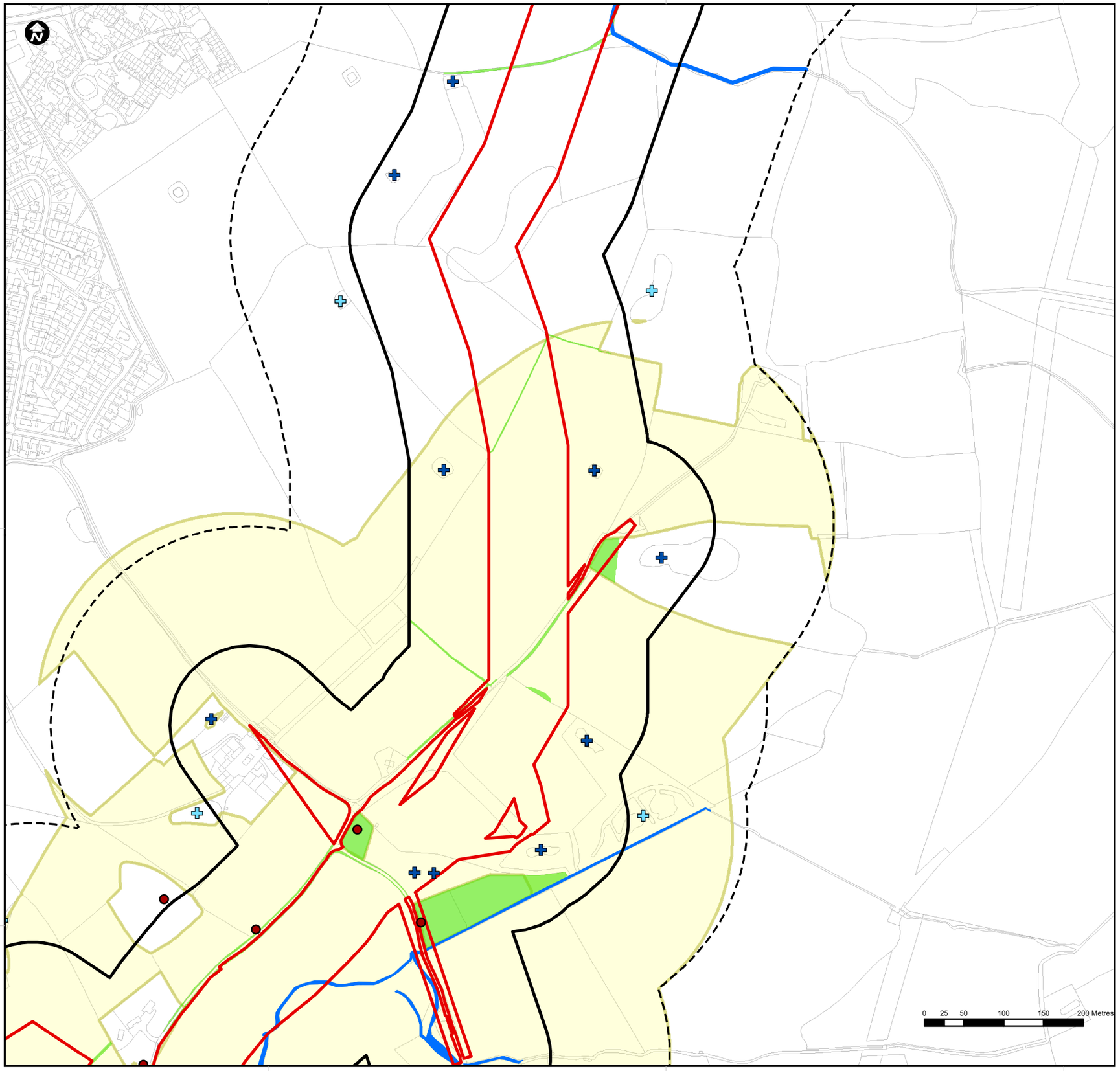

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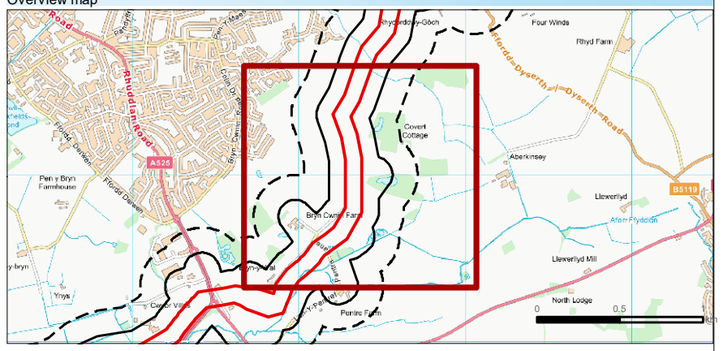

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Tree with Potential Bat Roost Feature
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- Pond Subject to Population Size Class Assessment, Unless Pre-existing Data Exists
- Otter and Water Vole Survey Area
- Bat Activity Survey
- Wintering Bird Survey Area – River Clwyd and Coastal Fields

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	Suitable Habitat for Important Fauna: Proposed Survey Areas Page 5 of 13

DRAWN	DATE	SCALE	SIZE
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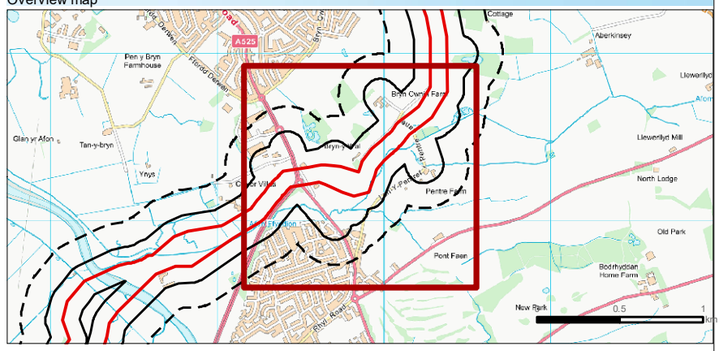
Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
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- Pond Subject to Population Size Class Assessment, Unless Pre-existing Data Exists
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- Wintering Bird Survey Area – River Clwyd and Coastal Fields

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
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Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 6 of 13**

DRAWN	DATE	SCALE	SIZE
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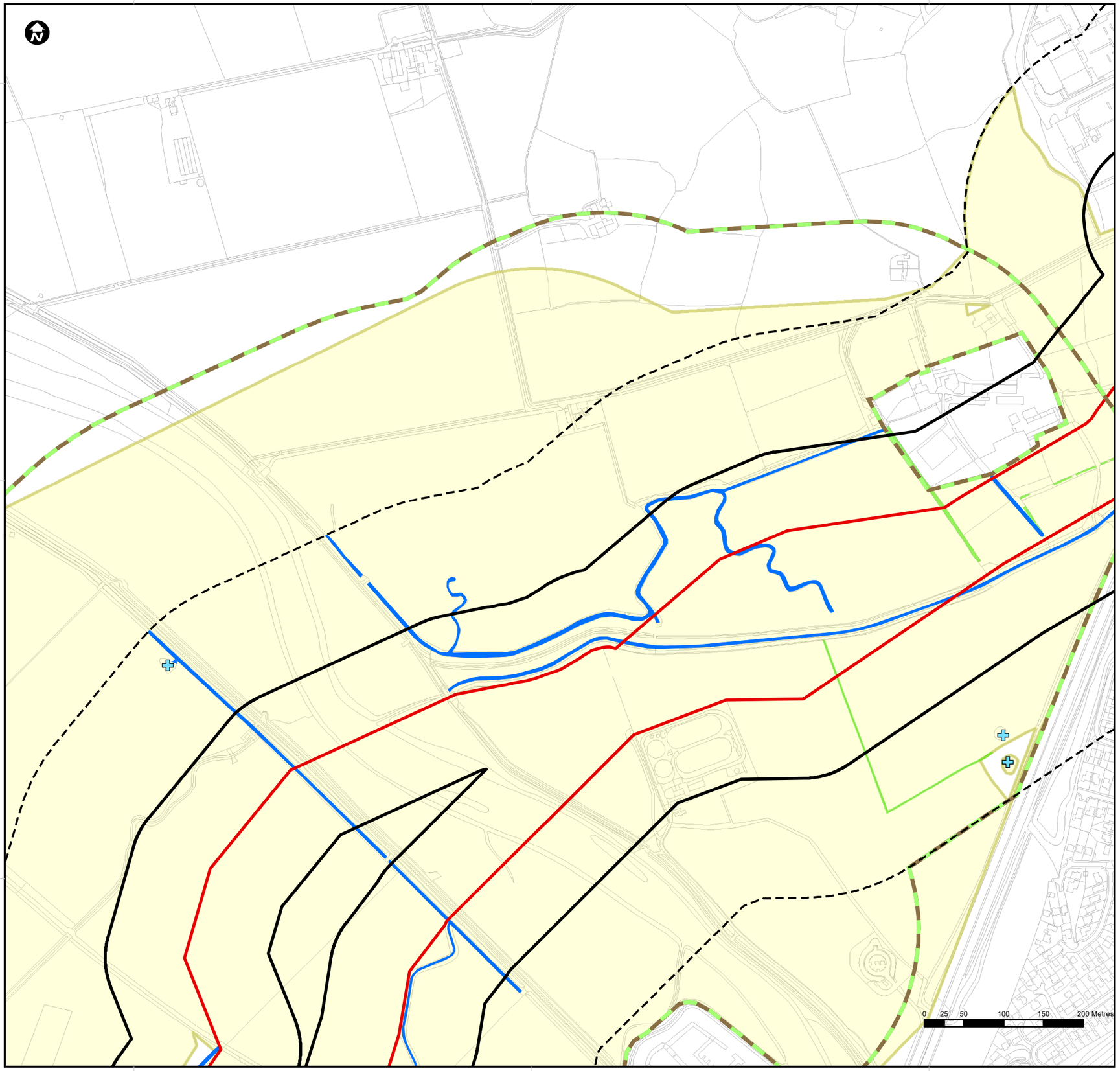

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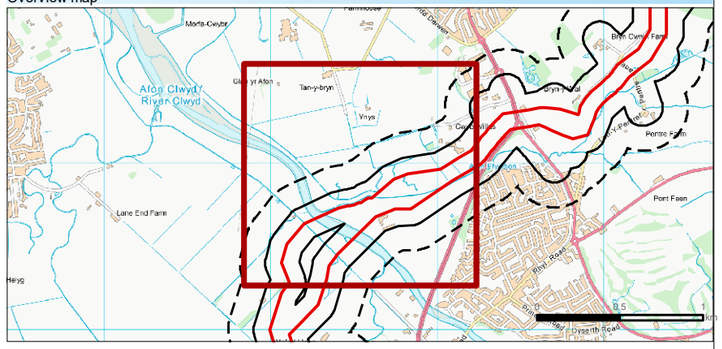

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
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- Bat Activity Survey
- Breeding Bird Survey Area
- Wintering Bird Survey Area – River Clwyd and Coastal Fields

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** Page 7 of 13

DRAWN	DATE	SCALE	SIZE
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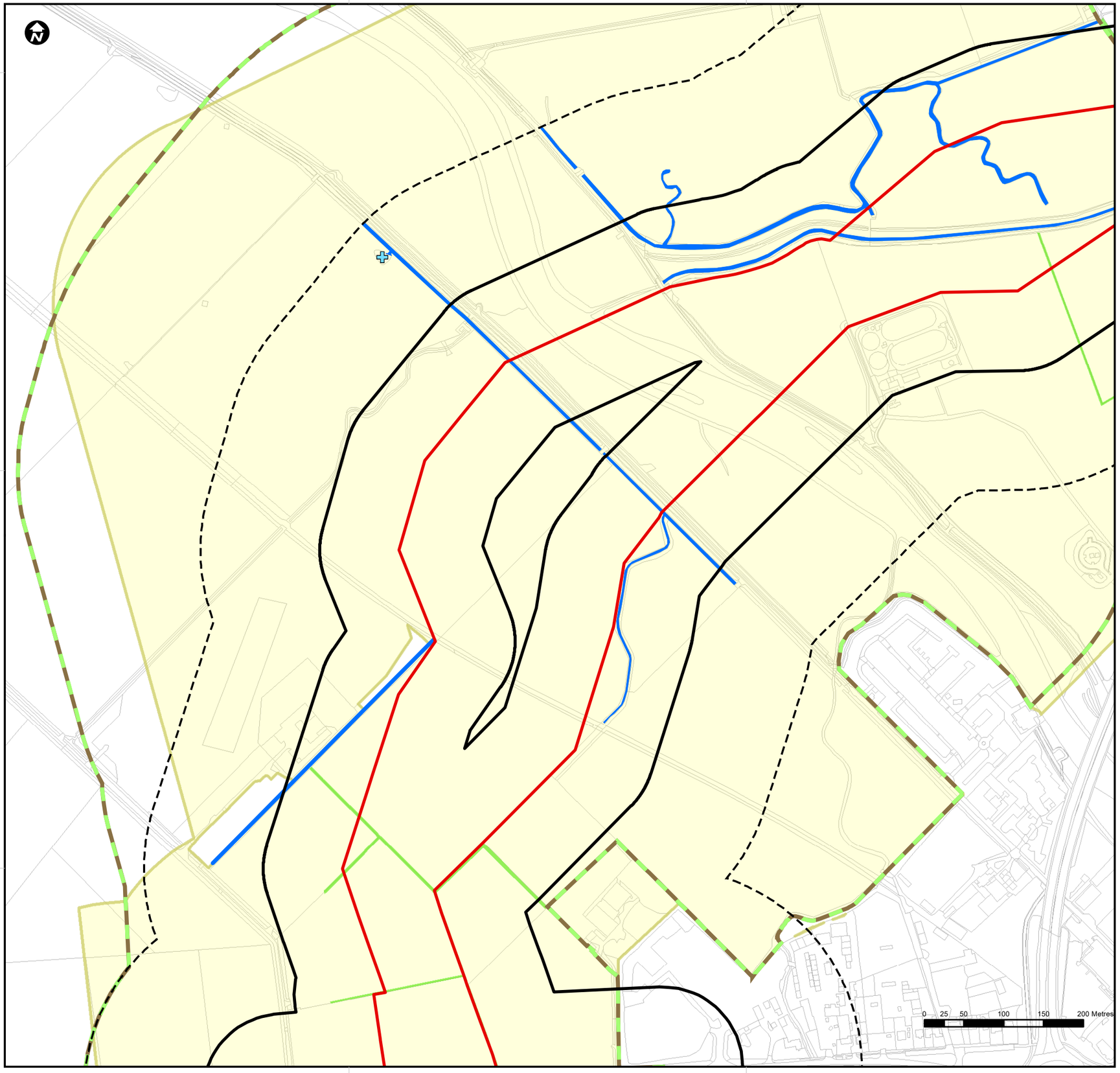

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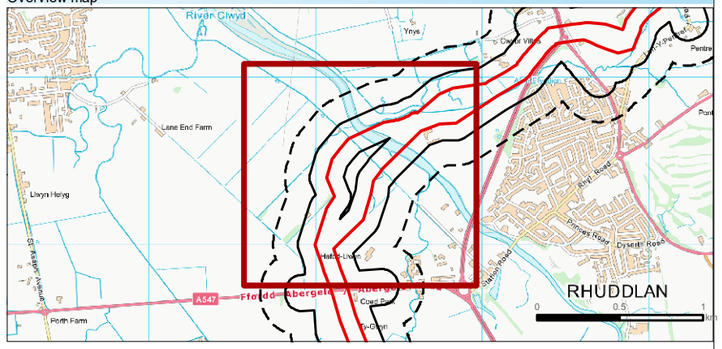

Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Pond Subject to GCN Presence/Absence Survey, Unless Pre-existing Data Exists
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- Bat Activity Survey
- Breeding Bird Survey Area
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Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

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Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 8 of 13**

DRAWN	DATE	SCALE	SIZE
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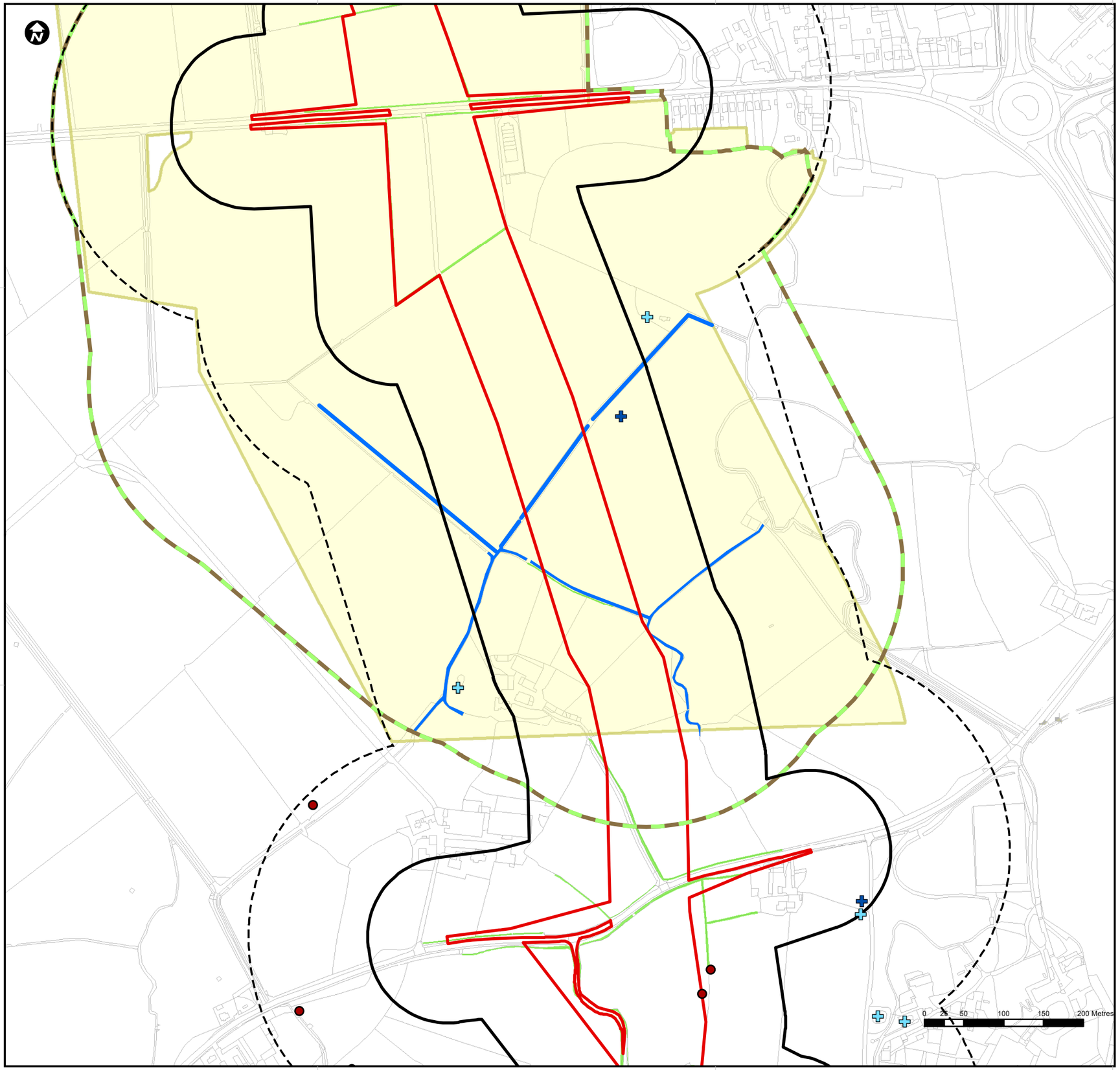
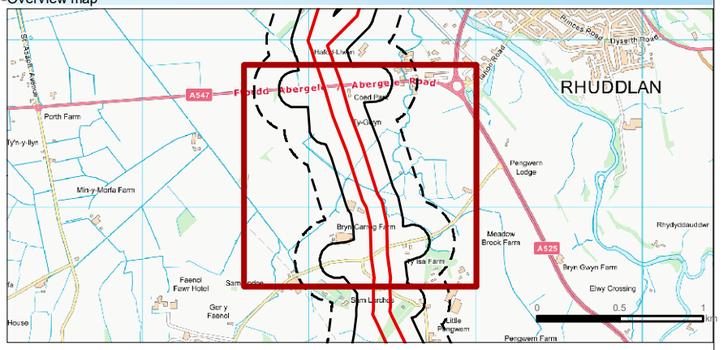


Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Tree with Potential Bat Roost Feature
- Pond Subject to GCN Presence/Absence Survey, Unless Pre-existing Data Exists
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- Bat Activity Survey
- Breeding Bird Survey Area
- Wintering Bird Survey Area – River Clwyd and Coastal Fields

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

Based on currently available data, noting that these may be subject to change because some areas have been mapped using aerial photography but not yet subject to field survey

Cartographic information

Coordinate System: British National Grid
Map Datum: ODN (Ordnance Datum Newlyn)
NOT TO BE USED FOR NAVIGATION

Map information

Fferm Wynt Alltraeth
AWEL Y MÔR
Offshore Wind Farm

PROJECT	Offshore Windpark **Awel y Môr Offshore Wind Farm Onshore Preliminary Ecological Appraisal**
TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 9 of 13**

DRAWN	DATE	SCALE	SIZE
jsalter	05/02/2021	1:5,000	@DIN A3

DRAWING No.	REV
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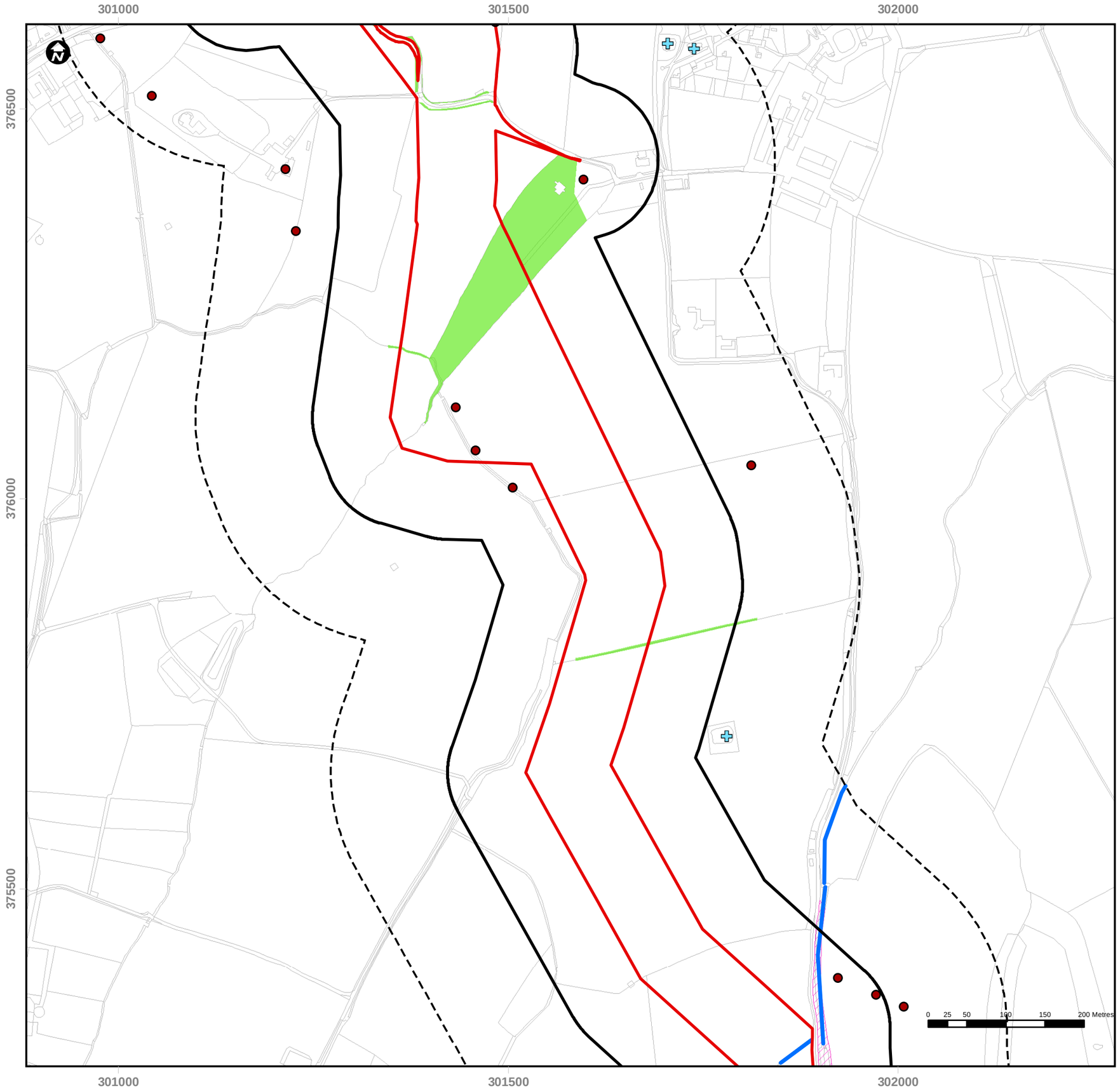
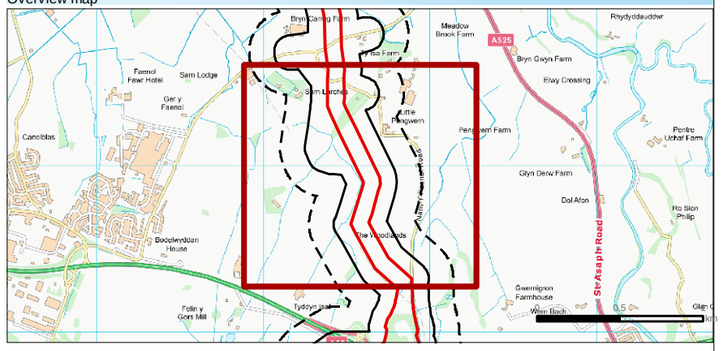


Overview map



Legend

- Landfall, Route Corridor, Substation and Associated Construction Areas
- Preferred Cable Corridor and Infrastructure 100m Buffer
- Preferred Cable Corridor and Infrastructure 250m Buffer
- Tree with Potential Bat Roost Feature
- Pond Subject to GCN Presence/Absence Survey, Unless Pre-existing Data Exists
- Otter and Water Vole Survey Area
- Bat Activity Survey
- Dormouse Habitat Proposed Survey Area

Suitable Habitat for Important Fauna: Proposed Survey Areas Note:

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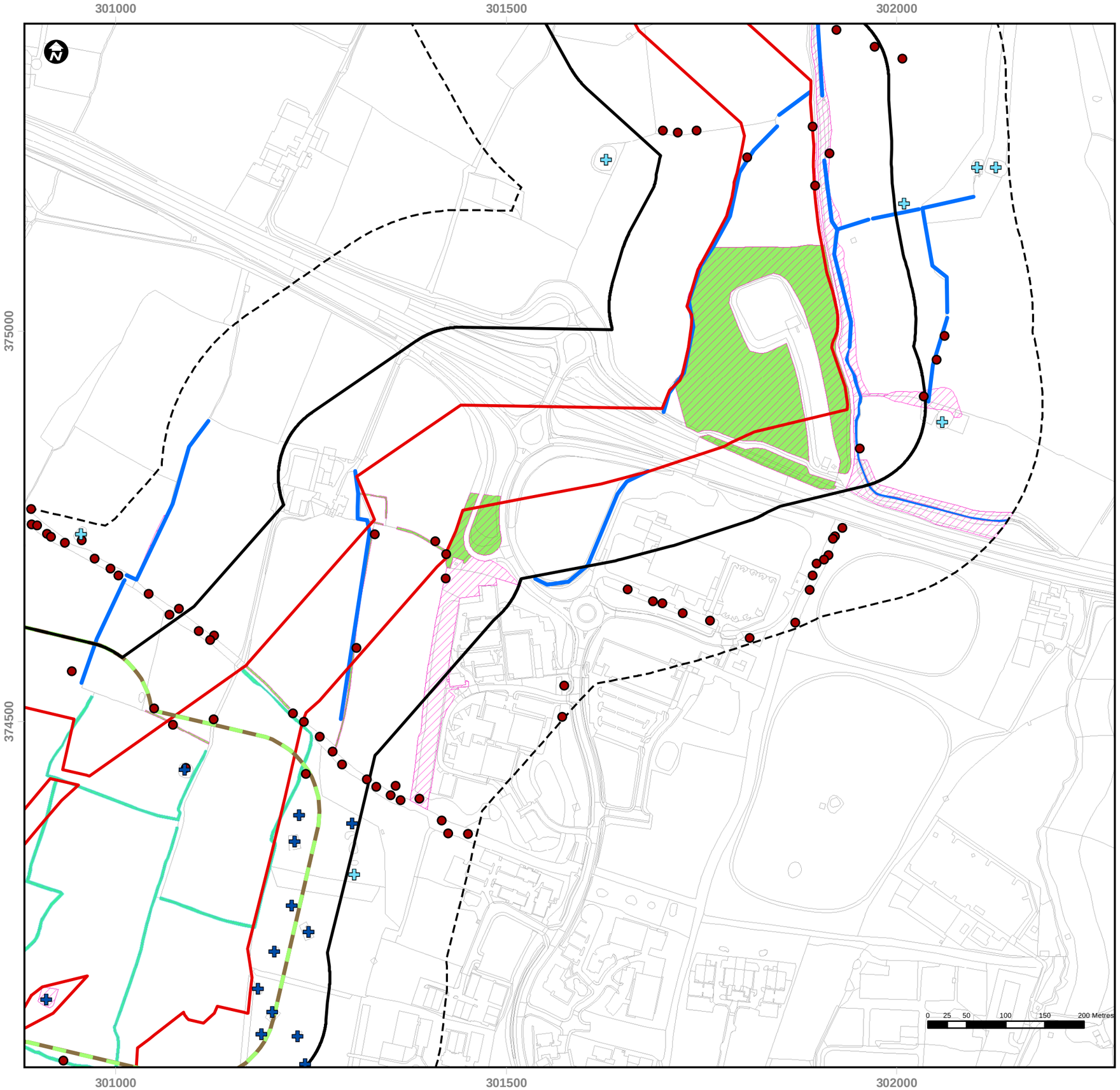

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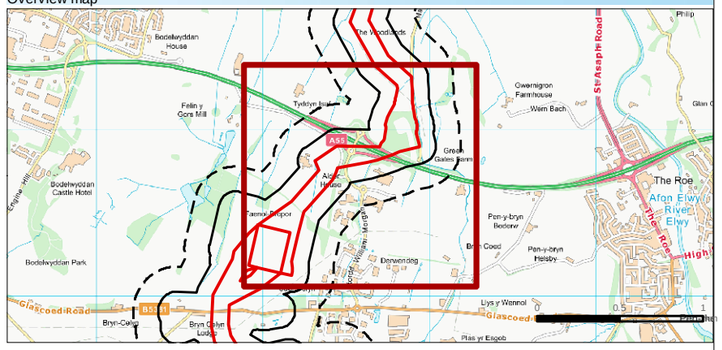

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TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas** **Page 11 of 13**

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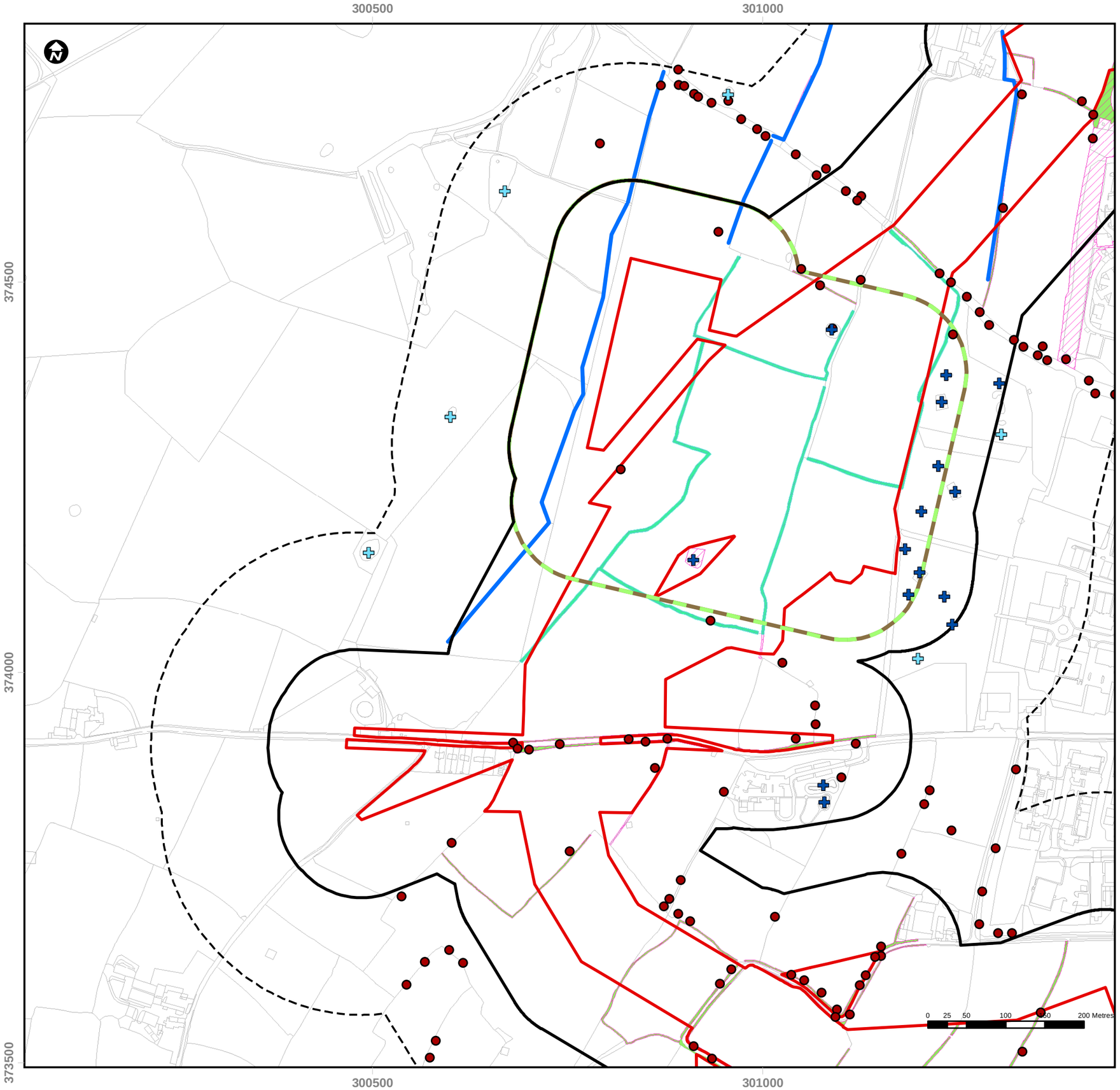

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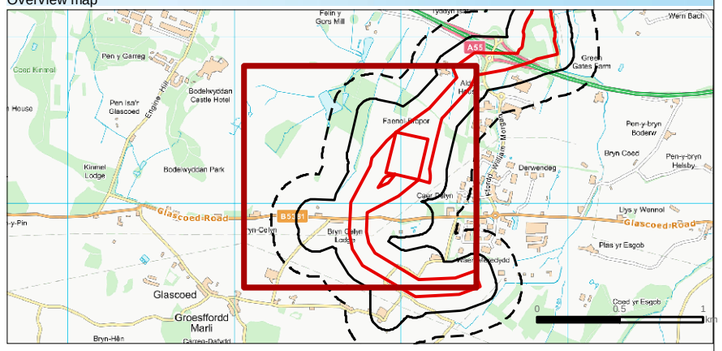

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TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas Page 12 of 13**

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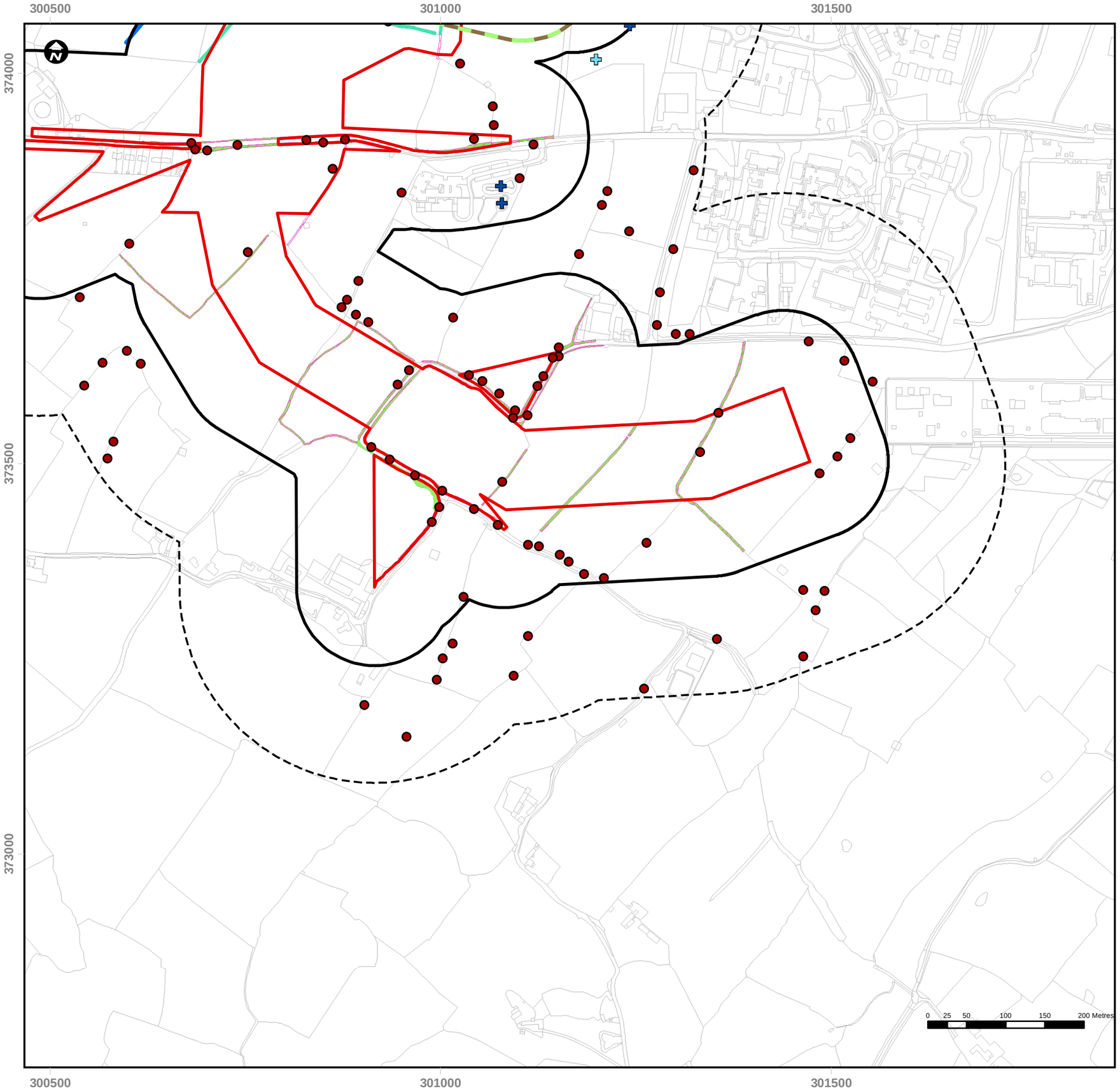

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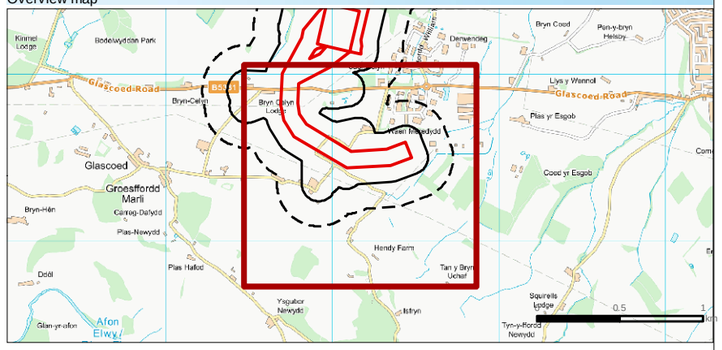

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Offshore Wind Farm

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TITLE	**Suitable Habitat for Important Fauna: Proposed Survey Areas Page 13 of 13**

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APPENDIX A

List of Local Wildlife Sites

Site Name	Distance from corridors/substations/ landfalls (m)	Distance from preferred corridor/substation/ landfall (m)
97/65: North Wales Holiday Camp	0	5467
97/41: Afon Gele	0	4980
97/35: Morfa Rhuddlan	0	1926
97/105: Abergele grazing marsh	0	3160
D001: Clwyd Estuary and Adjacent fields	0	0
D003: Coed y Ddol/Coed y Fadir	0	1199
D003/1: Plas Newydd/Coed Carreg Dafydd	0	859
D033: Coed Fron and Eryl Hall Wood	0	1738
97/26: Coed y Geufron	12	4419
97/77: Coed Nant Ddu	16	4209
D035: Bryn Meiriadog	36	740
97/33: Coed Gors	92	3323
D032: Coed Cord / Coed y Saeson	103	163
97/97: Pwll Coed Cae Mach	109	3420
D011: Y Ffrith, Prestatyn	146	0
D021: Bryn Cwnin Wetland	162	39
97/92: Moelfre Isaf heath fragments	187	4186
D034: Ty'n-y-Coed Rough (2 areas)	206	1523
97/69: Pwll Towyn Way	208	2619
97/34: Coed Y Waen	283	2619
97/28: Coed Parc y Meirch / Coed Ty Croes	294	3499
97/91: Moelfre Isaf Heath	326	4902
97/85: Pwll Fardre	332	4205
97/96: Pwll Coed Pen y Bryn	345	3863
97/95: Tan y mynydd	354	5040
97/70: Berthglyd Pond	357	5597
97/99: Pwll Rookery	416	2441
97/42: Fferam Ffordd Las Bach	433	5155
97/31: Coed Bodtegwal	441	3567
97/76: The Warren	451	5014
D040: Glascoed (2 areas)	452	1498
97/102: Coed Wig	506	1637
97/29: Dinorben Lodge Quarry	508	3438
97/101: Coed Pen-y-bryn	530	2684
97/73: Pwll Ffordd St Asaph	573	3771
97/83: St Georges Well	606	5001
97/113: Pensarn Reedbed	661	6468
97/32: Coed Meibion	683	3020
97/80: Coed Parc Kinmel	744	2689
97/17: Pentre Mawr Park Pools & Reedbed	803	6431

Site Name	Distance from corridors/substations/ landfalls (m)	Distance from preferred corridor/substation/ landfall (m)
97/67: Afon Clwyd Saltmarsh	806	1097
SJ07/6: Pwllau Graig	817	1780
97/100: Coed Bron Haul	823	3367
97/24: Ffordd Las	854	5425
D041: Coed yr Accar (2 areas)	938	1621
SJ07/1: Coed Nant-y-graig	939	1911
97/72: Pwll Bodoryn Fawr	991	3247
97/84: Pwll Tan-y-bryn	1048	5681
97/113a: Abergele Hospital Grounds	1078	5810
97/82: Pwll St Georges Well	1084	3222
97/66: Remo Avenue	1166	3644
D031: Mount Road Churchyard, St Asaph	1187	1810
97/75: Pwll Llwyni Lodge	1211	3148
D037: Coed Kendrick	1247	2237
97/53: Bryn Plas Uchaf	1287	6015
97/81: Pwll Parc Kimmel	1288	3071
97/74: Plas Kimmel	1289	3041
D002: Coed Pen y Garreg	1306	1352
97/88: Mynydd y Gaer	1333	3332
97/19: Coed Ysgerirallt	1364	6095
97/16: Siror Hir Dingles	1392	6101
97/59: Afon Gele Grassland	1578	6279
D036: Chapel Wood/Coed Mawr	1609	2753
97/94: Coed PlasUchaf	1617	4032
97/40: Hen Wrych Pond	1652	7264
D022: Vale Of Clwyd Grassland	1703	1806
Extra11: Mynydd y Gaer Grassland	1800	3559
97/110: Abergele Golf Course 1	1850	7287
D018: Pwll y Bont	1883	1448
97/13: Coed y Gopa Extension	1969	6698

APPENDIX B

List of Protected or Notable Plant Species Recorded within the Study Area

Species Name (Latin)	Species Name (English)	Sch8	S7	RDB (Wales)	RDB (UK)
Hyacinthoides non-scripta	Bluebell	X			
Veronica spicata	Spiked Speedwell	X			
Juniperus communis	Common juniper		X		
Centaurea cyanus	Cornflower		X		
Carex divisa	Divided Sedge		X		
Ophrys insectifera	Fly Orchid		X		
Entosthodon pulchellus	Pretty Cord-moss		X		
Fumaria purpuria	Purple ramping fumitory		X		
Hordeum Marinum	Sea barley		X		
Silene gallica	Small-flowered catchfly		X		
Oenanthe fistulosa	Tubular Water-dropwort		X		
Carex divisa	Divided Sedge			X	X
Cerastium pumilum	Dwarf Mouse-ear			X	X
Euphorbia exigua	Dwarf Spurge			X	X
Minuartia verna	Spring Sandwort			X	X
Papaver argemone	Prickly Poppy			X	X
Potentilla argentea	Hoary Cinquefoil			X	X
Silene gallica	Small-flowered Catchfly			X	X
Silene nutans	Nottingham Catchfly			X	X
Aphanorrhegma patens	Spreading Earth-moss			X	
Brachythecium glareosum	Streaky Feather-moss			X	
Bryum argenteum	Silver-moss			X	
Bryum donianum	Don's Thread-moss			X	
Bryum violaceum	Pill Bryum			X	
Butomus umbellatus	Flowering-rush			X	
Carex pseudocyperus	Cyperus Sedge			X	
Centaurea cyanus	Cornflower			X	
Dicranum bonjeanii	Crisped Fork-moss			X	
Encalypta vulgaris	Common Extinguisher-moss			X	
Entosthodon pulchellus	Pretty Cord-moss			X	
Fumaria purpurea	Purple Ramping-fumitory			X	
Grimmia orbicularis	Round-fruited Grimmia			X	
Hippuris vulgaris	Mare's-tail			X	
Hordelymus europaeus	Wood Barley			X	
Hygroamblystegium fluviatile	Brook-side Feather-moss			X	
Kindbergia praelonga	Common Feather-moss			X	
Leiocolea badensis	Scarce Notchwort			X	
Marchesinia mackaii	MacKay's Pouncewort			X	
Marrubium vulgare	White Horehound			X	
Mnium marginatum var.	Mnium marginatum var.			X	

Species Name (Latin)	Species Name (English)	Sch8	S7	RDB (Wales)	RDB (UK)
marginatum	marginatum				
Ophrys insectifera	Fly Orchid			X	
Oxyrrhynchium schleicheri	Twist-tip Feather-moss			X	
Plagiochila britannica	British Featherwort			X	
Porella platyphylla	Wall Scalewort			X	
Rumex crispus subsp. uliginosus	Curled Dock			X	
Rumex pulcher	Fiddle Dock			X	
Ruscus aculeatus	Butcher's-broom			X	
Sagittaria sagittifolia	Arrowhead			X	
Scabiosa columbaria	Small Scabious			X	
Schistidium rivulare	River Grimmia			X	
Sesleria caerulea	Blue Moor-grass			X	
Sinapis arvensis	Charlock			X	
Sorbus rupicola	Rock Whitebeam			X	
Syntrichia ruralis var. ruraliformis	Sand-hill Screw-moss			X	
Thamnobryum alopecurum	Fox-tail Feather-moss			X	
Tortula lanceola	Lance-leaved Pottia			X	
Anacamptis morio	Green-winged Orchid				X
Buxus sempervirens	Box				X
Centunculus minimus	Chaffweed				X
Chenopodium bonus-henricus	Good-King-Henry				X
Cynoglossum officinale	Hound's-tongue				X
Glebionis segetum	Corn Marigold				X
Hordeum marinum	Sea Barley				X
Hyoscyamus niger	Henbane				X
Hypericum montanum	Pale St John's-wort				X
Oenanthe fistulosa	Tubular Water-dropwort				X
Ophrys insectifera	Fly Orchid				X
Platanthera chlorantha	Greater Butterfly-orchid				X
Spiranthes spiralis	Autumn Lady's-tresses				X
Viola canina	Heath Dog-violet				X
Wahlenbergia hederacea	Ivy-leaved Bellflower				X

APPENDIX C

List of Protected or Notable Invertebrate Species Recorded within the Study Area

Species name (Latin)	Species name (English)	S7	Sch5	RDB (UK)
Boloria euphrosyne	Pearl-bordered Fritillary	X	X	
Satyrium w-album	White-letter Hairstreak	X	X	
Boloria selene	Small Pearl-bordered Fritillary	X		X
Coenonympha pamphilus	Small Heath	X		X
Lasiommata megera	Wall	X		X
Hipparchia semele	Grayling	X		X
Cirrhia gilvago	Dusky-lemon Sallow	X		
Diloba caeruleocephala	Figure of Eight	X		
Ennomos erosaria	September Thorn	X		
Tholera decimalis	Feathered Gothic	X		
Timandra comae	Blood-vein	X		
Xylena exsoleta	Sword-grass	X		
Caradrina morpheus	Mottled Rustic	X		
Ceramica pisi	Broom Moth	X		
Cirrhia icteritia	Sallow	X		
Diarsia rubi	Small Square-spot	X		
Ecliptopera silaceata	Small Phoenix	X		
Ennomos fuscantaria	Dusky Thorn	X		
Ennomos quercinaria	August Thorn	X		
Euxoa tritici	White-line Dart	X		
Hepialus humuli	Ghost Moth	X		
Hoplodrina blanda	Rustic	X		
Hydraecia micacea	Rosy Rustic	X		
Lycia hirtaria	Brindled Beauty	X		
Melanchra persicariae	Dot Moth	X		
Orthosia gracilis	Powdered Quaker	X		
Rhizedra lutosa	Large Wainscot	X		
Scotopteryx chenopodiata	Shaded Broad-bar	X		
Spilosoma lubricipeda	White Ermine	X		
Spilosoma lutea	Buff Ermine	X		
Stilbia anomala	Anomalous	X		
Tholera cespitis	Hedge Rustic	X		
Tyria jacobaeae	Cinnabar	X		
Watsonalla binaria	Oak Hook-tip	X		
Acronicta psi	Grey Dagger	X		
Agrochola litura	Brown-spot Pinion	X		
Agrochola lychnidis	Beaded Chestnut	X		
Allophyes oxyacanthae	Green-brindled Crescent	X		
Amphipyra tragopoginis	Mouse Moth	X		
Arctia caja	Garden Tiger	X		
Asteroscopus sphinx	Sprawler	X		
Atethmia centrago	Centre-barred Sallow	X		

APPENDIX D

List of Protected or Notable Bird Species Recorded within the Study Area

Protection Status	Species
Wildlife & Countryside Act 1981 (as amended) Schedule 1 (42 species)	Goshawk *Accipiter gentilis*, Kingfisher *Alcedo atthis*, Garganey *Anas querquedula*, Scaup *Aythya marila*, Purple Sandpiper *Calidris maritima*, Ruff *Calidris pugnax*, Cetti's Warbler *Cettia cetti*, Marsh Harrier *Circus aeruginosus*, Peregrine *Falco peregrinus*, Hobby *Falco subbuteo*, Great Northern Diver *Gavia immer*, Whimbrel *Numenius phaeopus*, Greenshank *Tringa nebularia*, Green Sandpiper *Tringa ochropus*, Little Ringed Plover *Charadrius dubius*, Black Tern *Chlidonias niger*, Long-tailed Duck *Clangula hyemalis*, Whooper Swan *Cygnus cygnus*, Merlin *Falco columbarius*, Brambling *Fringilla montifringilla*, Red-throated Diver *Gavia stellata*, Little Gull *Hydrocoloeus minutus*, Mediterranean Gull *Larus melanocephalus*, Black-tailed Godwit *Limosa limosa*, Common Crossbill *Loxia curvirostra*, Velvet Scoter *Melanitta fusca*, Common Scoter *Melanitta nigra*, Red Kite *Milvus milvus*, Leach's Petrel *Oceanodroma leucorhoa*, Osprey *Pandion haliaetus*, Black Redstart *Phoenicurus ochruros*, Spoonbill *Platalea leucorodia*, Snow Bunting *Plectrophenax nivalis*, Chough *Pyrrhocorax pyrrhocorax*, Firecrest *Regulus ignicapilla*, Roseate Tern *Sterna dougallii*, Little Tern *Sternula albifrons*, Redwing *Turdus iliacus*, Fieldfare *Turdus pilaris*, Barn Owl *Tyto alba*, Hoopoe *Upupa epops*, and Indet. Diver
Environment (Wales) Act 2016 (Section 7) (37 species)	Lesser Redpoll *Acanthis cabaret*, Skylark *Alauda arvensis*, Greenland Greater White-fronted Goose *Anser albifrons subsp. Flavirostris*, White-fronted Goose *Anser albifrons*, Tree Pipit *Anthus trivialis*, Ringed Plover *Charadrius hiaticula*, Black-headed Gull *Chroicocephalus ridibundus*, Hen Harrier *Circus cyaneus*, Cuckoo *Cuculus canorus*, Lesser Spotted Woodpecker *Dendrocopos minor*, Yellowhammer *Emberiza citrinella*, Reed Bunting *Emberiza schoeniclus*, Kestrel *Falco tinnunculus*, Herring Gull *Larus argentatus*, Bar-tailed Godwit *Limosa lapponica*, Linnet *Linaria cannabina*, Twite *Linaria flavirostris*, Grasshopper Warbler *Locustella naevia*, Common Scoter *Melanitta nigra*, Yellow Wagtail *Motacilla flava*, Spotted Flycatcher *Muscicapa striata*, Curlew *Numenius arquata*, House Sparrow *Passer domesticus*, Tree Sparrow *Passer montanus*, Grey Partridge *Perdix perdix*, Golden Plover *Pluvialis apricaria*, Willow Tit *Poecile montana*, Marsh Tit *Poecile palustris*, Dunnock *Prunella modularis*, Chough, Bullfinch *Pyrrhula pyrrhula*, Roseate Tern, Turtle Dove *Streptopelia turtur*, Starling *Sturnus vulgaris*, Song Thrush *Turdus philomelos*, Ring Ouzel *Turdus torquatus*, and Lapwing *Vanellus vanellus*
EU Birds Directive Annexe 1 (30 species)	Kingfisher, Greenland Greater White-fronted Goose, Short-eared Owl *Asio flammeus*, Barnacle Goose *Branta leucopsis*, Ruff, Black Tern, Marsh Harrier, Hen Harrier, Whooper Swan, Little Egret *Egretta garzetta*, Merlin, Peregrine, Black-throated Diver *Gavia arctica*, Great Northern Diver, Red-throated Diver, Storm Petrel *Hydrobates pelagicus*, Little Gull, Mediterranean Gull, Bar-tailed Godwit, Red Kite, Leach's Petrel, Osprey, Spoonbill, Golden Plover, Chough, Roseate Tern, Common Tern *Sterna hirundo*, Arctic Tern *Sterna paradisaea*, Sandwich Tern *Sterna sandvicensis*, and Little Tern
Red List (44 species)	Lesser Redpoll, Skylark, White-fronted Goose, Tree Pipit, Pochard *Aythya ferina*, Scaup, Ruff, Ringed Plover, Marsh Harrier, Long-tailed Duck *Clangula hyemalis*, Cuckoo, Lesser Spotted Woodpecker, Yellowhammer, Merlin, Herring Gull, Black-tailed Godwit, Linnet, Twite, Grasshopper Warbler, Velvet Scoter, Common Scoter,

Protection Status	Species
	Grey Wagtail *Motacilla cinerea*, Yellow Wagtail, Spotted Flycatcher, Curlew, Whimbrel, House Sparrow, Tree Sparrow, Grey Partridge *Perdix perdix*, Shag *Phalacrocorax aristotelis*, Black Redstart, Willow Tit, Marsh Tit, Whinchat *Saxicola rubetra*, Woodcock *Scolopax rusticola*, Arctic Skua *Stercorarius parasiticus*, Roseate Tern, Turtle Dove, Starling, Redwing, Song Thrush, Fieldfare, Ring Ouzel, and Lapwing
Amber List (65 species)	Common Sandpiper *Actitis hypoleucos*, Razorbill *Alca torda*, Kingfisher, Pintail *Anas acuta*, Shoveler *Anas clypeata*, Teal *Anas crecca*, Wigeon *Anas penelope*, Mallard *Anas platyrhynchos*, Garganey, Gadwall *Anas strepera*, Greylag Goose *Anser anser*, Meadow Pipit *Anthus pratensis*, Swift *Apus apus*, Turnstone *Arenaria interpres*, Short-eared Owl, Light-bellied Brent Goose *Branta bernicla subsp. Hrota*, Brent Goose *Branta bernicla*, Barnacle Goose, Goldeneye *Bucephala clangula*, Sanderling *Calidris alba*, Dunlin *Calidris alpina subsp. Alpina*, Dunlin *Calidris alpina*, Knot *Calidris canutus*, Curlew Sandpiper *Calidris ferrugineal* Purple Sandpiper, Black-headed Gull, Dipper *Cinclus cinclus*, Marsh Harrier, Whooper Swan, Mute Swan *Cygnus olor*, House Martin *Delichon urbicum subsp. Urbicum*, House Martin *Delichon urbicum*, Reed Bunting, Kestrel, Snipe *Gallinago gallinago*, Black-throated Diver, Great Northern Diver, Oystercatcher *Haematopus ostralegus*, Storm Petrel *Hydrobates pelagicus*, Common Gull *Larus canus*, Lesser Black-backed Gull *Larus fuscus*, Great Black-backed Gull *Larus marinus*, Mediterranean Gull, Bar-tailed Godwit, Gannet *Morus bassanus*, Leach's Petrel, Osprey, Redstart *Phoenicurus phoenicurus*, Willow Warbler *Phylloscopus trochilus*, Spoonbill, Grey Plover *Pluvialis squatarola*, Dunnock *Prunella modularis*, Manx Shearwater *Puffinus puffinus*, Bullfinch, Common Tern, Arctic Tern, Sandwich Tern, Little Tern, Tawny Owl *Strix aluco*, Shelduck *Tadorna tadorna*, Spotted Redshank *Tringa erythropus,* Greenshank *Tringa nebularia*, Green Sandpiper, Redshank *Tringa totanus*, and Guillemot *Uria aalge*.

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