



Awel y Môr Offshore Wind Farm

Outline Landscape and Ecology Management Plan

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Glossary of terms

TERM	DEFINITION
Compensation	Compensation describes measures taken to offset residual effects resulting in the loss of, or permanent damage to, ecological features despite mitigation. For example, it may take the form of replacement habitat or improvements to existing habitats.
Order Limits (OL)	The extent of the development area including all works, access routes, Temporary Construction

TERM	DEFINITION
	Compounds (TCCs), visibility splays and discharge points.
Effect	Term used to express the consequence of an impact.
Enhancement	The provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial, resulting from the activities associated with the construction, operation and maintenance, or decommissioning of the project.
Mitigation	Mitigation measures are commitments made by the project to reduce and/ or eliminate the potential for significant effects to arise as a result of the project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
Onshore Export Cable Corridor (onshore ECC)	The proposed cable route, which represents a corridor, typically 40 m to 60 m wide, within which the cable trenching, haul road and stockpiling areas associated with cable construction, will be located.
Preliminary Environmental Information Report (PEIR)	Preliminary Environmental Information Report. The PEIR was written in the style of a draft Environmental Statement (ES) and formed the basis of statutory consultation.
Priority Habitat	Habitat listed on Section (S7) of the Environment (Wales) Act 2016

TERM	DEFINITION
Substation footprint	The footprint for the substation which would incorporate either air insulated switchgear (AIS) or gas insulated switchgear (GIS) technology
Waterbirds	The definition of waterbirds follows that used by the Wetland Bird Survey (WeBS) and includes wildfowl (ducks, geese and swans), waders, rails, divers, grebes, cormorants and herons. Gulls were also included as waterbirds for the purposes of this assessment.

Abbreviations and acronyms

TERM	DEFINITION
AIS	Air insulated switchgear
AyM	Awel y Môr Offshore Wind Farm
CIEEM	Chartered Institute for Ecology and Environmental Management
CoCP	Code of Construction Practice
DCC	Denbighshire County Council
ECC	Export Cable Corridor
EcIA	Ecological Impact Assessment
ECOW	Ecological Clerk of Works
EIA	Environmental Impact Assessment.
EPSL	European protected species licence
ES	Environmental Statement
GIS	Gas insulated switchgear

TERM	DEFINITION
GCN	Great crested newt
HDD	Horizontal Directional Drilling
INNS	Invasive non-native species
LEDPP	Landscape and Ecology Design Principles Plan
LEMP	Landscape and Ecological Management Plan
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
OLEMP	Outline Landscape and Ecological Management Plan
OnSS	Onshore Substation
PEA	Preliminary Ecological Appraisal
PEIR	Preliminary Environmental Information Report
RSPB	Royal Society for the Protection of Birds
S7	Section 7 of the Environment (Wales) Act 2016
SABP	St Asaph Business Park
TCC	Temporary Construction Compound
TJB	Transition Joint Bay

Units

UNIT	DEFINITION
km	kilometre
m	metre

UNIT	DEFINITION
ha	hectare

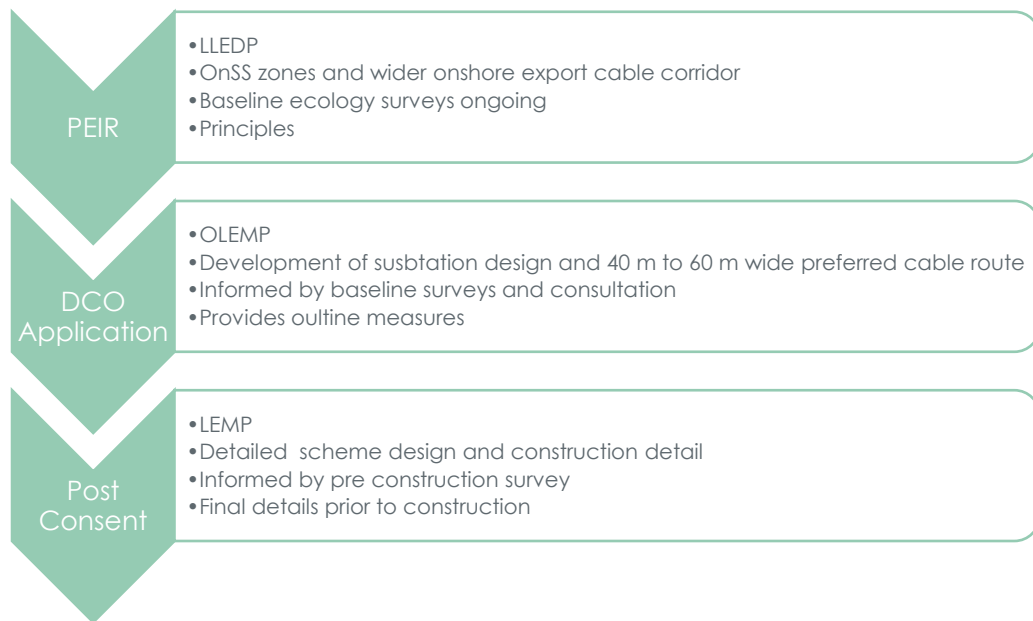
1 Outline Landscape and Ecology Management Plan

1.1 Introduction

- 1 This Outline Landscape and Ecological Management Plan (OLEMP) sets out the in-principle measures which will be implemented for the onshore elements of the Awel y Môr Offshore Wind Farm (AyM) Project to avoid, reduce, mitigate or compensate for potential impacts on landscape and biodiversity resources and measures intended to provide biodiversity enhancements.
- 2 This OLEMP has been prepared by SLR Consulting and Optimised Environments (OPEN) on behalf of the Applicant, Awel y Mor offshore wind farm Limited. This is an outline document that, by reference to the assessments reported in the ES, sets out the key elements that will be included in the final Landscape and Ecology Mitigation Plan (LEMP) which, following consultation with Natural Resources Wales (NRW), will be agreed with Denbighshire County Council (DCC), prior to any construction works commencing.
- 3 This OLEMP makes reference to the project description, landscape and visual impact assessment and onshore biodiversity assessment that are reported in the following chapters in Volume 3 of the Environmental Statement (ES):
 - Chapter 1: Onshore Project Description (application ref: 6.3.1);
 - Chapter 2: Landscape and Visual Impact Assessment (LVIA) (application ref: 6.3.2);
 - Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.3.5).

- 4 Both chapters 2 and 5 consider the potential effects of the removal of landscape elements including ground cover, hedgerows, trees and woodlands. The LVIA considers the physical effect of this removal as landscape elements that contribute to landscape character and the Onshore Ecology assessment considers these elements as ecological assets that contribute to the wider biodiversity of the area. Chapter 1 provides details of the onshore elements of AyM which have informed chapters 2 and 5.
- 5 Additional mitigation measures that will be employed during the construction phase of the onshore elements of AyM, are provided within the outline Code of Construction Practice (CoCP), (application ref: 8.13).
- 6 This OLEMP (and subsequent Final LEMP), follow the principles that were set out in the Landscape and Ecology Design Principles Plan (LEDPP), that was part of the Preliminary Environmental Information Report (PEIR) provided to inform Statutory Consultation which ran from August 2021 to October 2021.
- 7 At PEIR stage, the LEDPP set out the principles that have been used in the development of this OLEMP which, in turn, sets out the key landscape and ecology elements that will be secured in the Final LEMP that will be submitted to Denbighshire County Council for approval, in consultation with Natural Resources Wales (NRW) and other relevant stakeholders, under a requirement of the DCO.
- 8 Following its initial agreement, it is envisaged that the Final LEMP will represent a working document, subject to regular review and updates (as required) during the construction and operation of the Project. Updates to the Final LEMP will be subject to agreement with relevant stakeholders, as set out in paragraph 2.
- 9 The following diagram in Figure 1 shows the relationship of the LLEDP, OLEMP and LEMP documents.

Figure 1 LEMP development process



1.2 Structure of this document

10 This OLEMP is structured as follows:

- Section 2 sets out the landscape mitigation principles for construction and operation of the onshore elements of AyM including proposals for screening planting at the onshore substation (OnSS) site;
- Section 3 sets out ecological mitigation and compensation principles;
- Section 4 presents proposals for reinstatement following construction, with separate sub-sections outlining measures to be employed within or directly adjacent to Local Wildlife Sites (LWS), specifically Y Ffrith LWS and Clwyd Estuary and Adjacent fields LWS, and within other parts of the Order Limits (OL);
- Section 5 provides details of proposals for the protection of retained habitats;
- Section 6 provides details of measures to address potential impacts on protected or notable species;
- Section 7 sets out initial proposals for biodiversity enhancements;
- Section 8 outlines proposals for ecological monitoring; and
- Section 9 describes how the landscape and ecological measures are set out within DCO Requirements

2 Landscape Mitigation Principles

2.1.1 Embedded Mitigation

- 11 Embedded landscape mitigation in respect of the onshore elements of AyM has involved the sensitive siting and design of the onshore infrastructure during site selection, in order to reduce or avoid potential impacts.
- 12 The site selection process considered constraints relating to physical landscape elements (such as woodlands, trees and hedgerows), landscape character and visual amenity, together with other environmental and technical constraints. The sensitivity of the surrounding landscape and of residents, road-users, workers and recreational users of the landscape was also a key consideration. The capacity of the landscape to accommodate the onshore elements of AyM is assessed in relation to the natural screening afforded by landform, woodlands and trees and the degree to which other surrounding infrastructure and buildings influence visual screening.
- 13 The close proximity of existing electricity overhead lines to the OnSS and the relatively close proximity of existing electrical infrastructure at the existing National Grid Bodelwyddan substation to the south east of the proposed OnSS provide a context of electrical infrastructure in the area immediately surrounding the site. This context was considered in site selection and aligning with it is considered embedded mitigation.

2.1.2 Construction Phase Mitigation

- 14 Mitigation opportunities during the construction phase of works will be limited and primarily relate to the restrictions imposed on the working areas and measures identified in the CoCP (application ref: 8.13).

- 15 For Statutory Consultation (August 2021 to October 2021), multiple Temporary Construction Compounds (TCCs), trenchless crossing compounds, onshore Export Cable Corridor (ECC) routing options and access route options were included in the assessment of effects as presented in the PEIR. These options have been refined for the application for development consent, as presented in the ES, resulting in a reduction of area required for construction compounds. The sensitive siting of the ECC and OnSS construction compound areas away from more visible and larger numbers of receptors were considerations that have been important in reducing the impact on immediate views and the construction compounds presented in the ES are reflective of this landscape and visual mitigation.

2.1.3 Operational Mitigation

OnSS Mitigation Principles

Baseline Context

- 16 The existing woodland to the west and north of the OnSS Footprint is substantial and, together with other vegetation and built elements in the wider landscape, provides an element of visual screening for many visual receptors in the area. These would reduce the landscape and visual effects resulting from the OnSS and sensitive siting within the landscape to make use of existing vegetation for screening has been included in the project's design as an embedded mitigation measure.

Outline Planting Principles

- 17 Outline planting mitigation principles have been developed for the OnSS site to compliment this existing landscape structure. These mitigation principles include areas of proposed woodland, proposed hedgerows with trees, proposed lowland grassland and areas identified for ecological mitigation in the form of habitat enhancement (grassland enhancement to structurally diverse, species rich neutral grassland).

- 18 The potential extent of these planting proposals is presented Figure 2. The woodland and hedgerow planting is also shown on the LVIA visualisations which have been illustrated to show the indicative height of the planting after 15 years' establishment in the context of the assessed OnSS maximum parameters.

Proposed Planting

- 19 The proposed planting comprises native woodland and hedgerow species and would be located around the OnSS. The key aims of the proposed planting are as follows:
- ▲ to provide visual screening to residential properties, road users, and visitors to the Crematorium on Glascoed Rd to the south of the OnSS site;
 - ▲ to provide visual screening to users of the Bridleway immediately north of the OnSS site;
 - ▲ to provide a woodland context to the OnSS site that compliments the long established woodland of the area, including woods found within Bodelwyddan Park Registered Historic Park and Garden (RHPG); and
 - ▲ to provide greater connectivity between the existing woodlands, retained hedgerows, field boundary trees and nearby Nature Reserve.
- 20 The mitigation woodland planting would comprise a mix of faster growing 'nurse' species and slower growing 'core' species. Nurse species, such as alder, birch, and black poplar would grow quicker so that after 15 years they would be approximately 7-10m in height. They would provide shelter to bring on core species, such as oak, elm and sycamore. Whilst the nurse species would be sufficiently fast growing to provide substantial screening of the OnSS after 15 years, the core species would outlive the nurse species and provide a preferred native woodland with a more robust structure closer in character to other nearby woodlands associated with Bodelwyddan Park RHPG.

- 21 Proposed woodland planting could be spaced to maximise growth rate and ultimate screening potential. An example of this would be plant approximately one plant per m² in natural groups and not too regimented (i.e. in randomly spaced species groups of 3, 5 and 7 plants), however the precise detail of these spacings will form part of the planting schedule in at the detailed stage. The proposed woodland planting could also strengthen lines of existing field boundaries, connecting to established woods in the area and thereby complimenting the existing landscape structure. The outline planting principles shown on Figure 2 have been developed with this connectivity in mind.
- 22 The quality of the topsoil on the site has not been tested but given the existing and historical agricultural use, is not considered likely to be of poor quality. In relation to preparation of the planting areas the following guidelines are therefore likely to apply: ensure area is weed free prior to planting; break existing ground identified for tree planting to a suitable depth, and harrow and remove large stones.
- 23 In locations where it is possible to undertake planting that would not interfere with construction works or access, and where it is practical to do so, mitigation woodland could be planted during the early phases of the OnSS construction to ensure robust screening as early as possible. This woodland planting if implemented at the start of the construction phase, would give the woodland in these areas additional growth prior to completion of construction and commencement of operation.

Onshore Export Cable Corridor (ECC) and Landfall Landscape Mitigation Principles

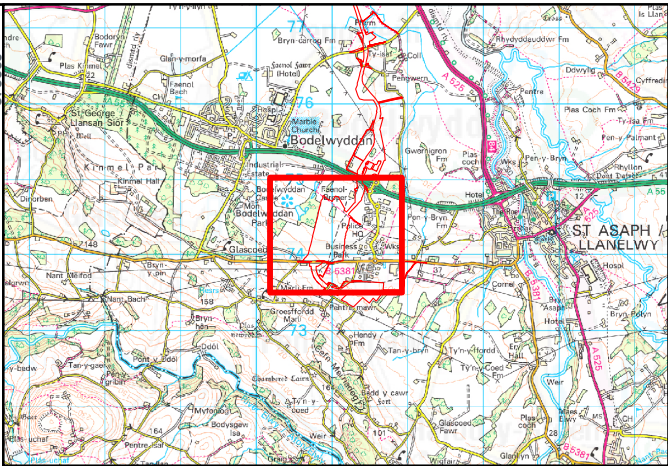
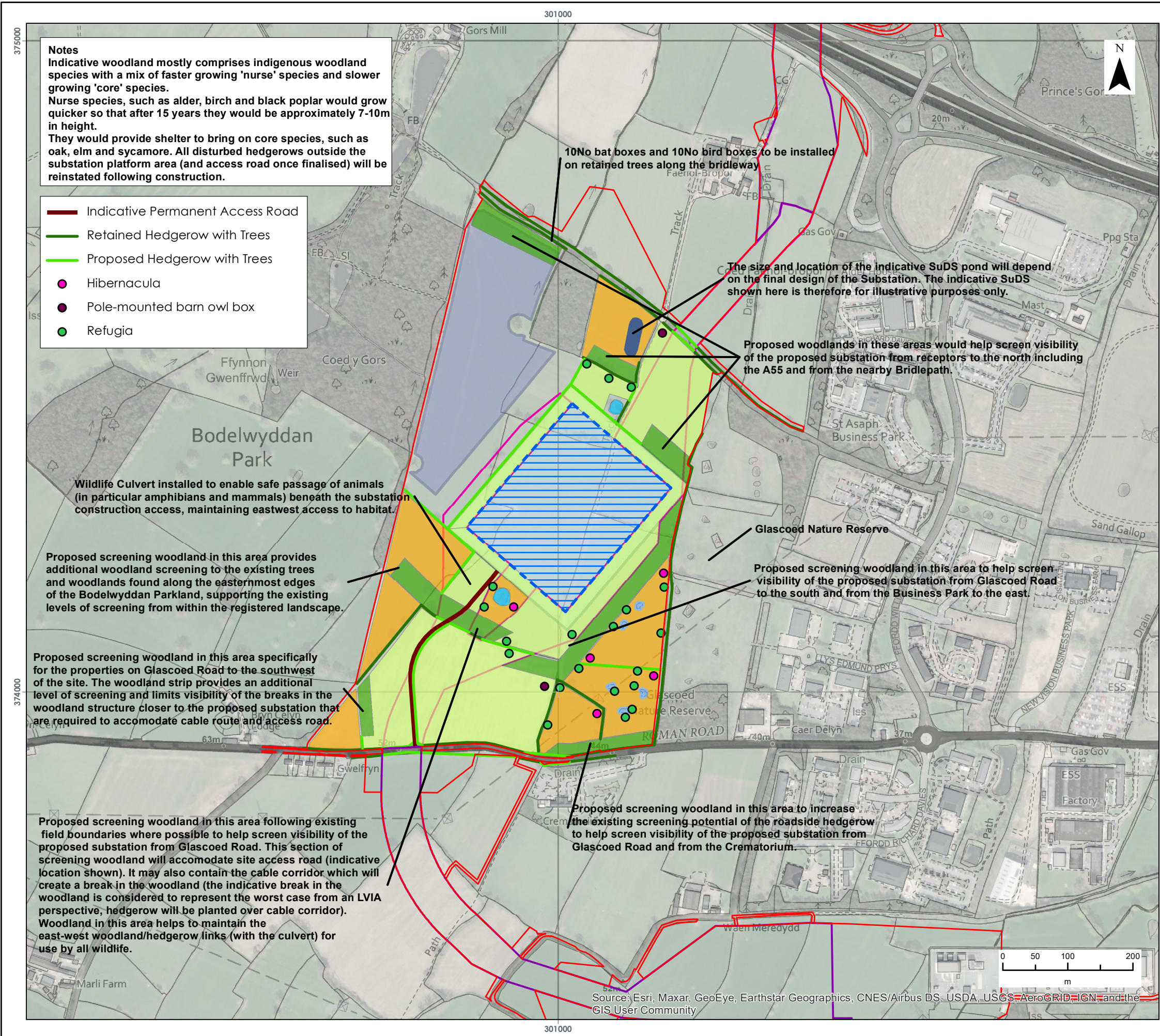
- 24 Landscape mitigation measures seek to avoid, reduce or offset temporary and permanent landscape and visual effects. Landscape and visual effects change over time as mitigation, such as planting and restoration of habitat types included as part of the proposed onshore elements of AyM, establishes and matures and the existing landscape evolves.

Outline landscape mitigation strategy

- 25 The onshore ECC assessed and presented in the ES, refines the Cable Corridor options presented within the PEIR. A landscape mitigation strategy for the Cable Corridor (as set out in the LEDPP) was developed to help this refinement and distilling of the options to achieve the best environmental fit within the landscape.
- 26 The landscape and visual strategy is as follows:
- Achievement of the best environmental fit of the Onshore ECC where practicable, particularly in relation to reducing hedgerow and tree loss along the cable route;
 - Reinstatement of removed sections of hedgerows, or suitable replacement hedgerows provided for displaced or severed sections of hedgerows where practical;
 - Locating construction compound and HDD compounds carefully to take into account landscape and visual receptors to reduce impacts during the construction period where practicable;
 - Restoration of all temporary works and construction areas in relation to re-establishment of ground cover;
 - Protection of all retained trees during the construction phase where practicable; and
 - Footpaths or cycleways that are temporarily disrupted by the Onshore ECC or Landfall works will be reinstated as part of the mitigation strategy (also see the outline Public Access Management Plan (PAMP) (application ref: 8.13.8), that is provided as part of the outline CoCP (application ref: 8.13).

Reinstatement of Onshore ECC

- 27 Following construction of the landfall and installation of the onshore cables disturbed landcover and habitats would be reinstated. The overall aim of the reinstatement would be the re-establishment of existing ground cover or returning the disturbed ground to its original agricultural use. Where possible, excavated soils will be carefully stored and reinstated as soon as possible.



LEGEND

- Order Limits
- Proposed Substation Footprint
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Substation Construction Area
- Proposed Substation Indicative Temporary Construction Compound Area
- Proposed Woodland
- Existing / Retained Ponds
- Pond Habitat Creation
- Grassland enhancement to structurally diverse, species rich neutral grassland
- Proposed Lowland Meadow Habitat
- Indicative SuDS Pond Location

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FIGURE TITLE:

Outline Landscape Mitigation Principles

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FIGURE NUMBER:

Figure 2

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3 Ecological Mitigation and Compensation Principles

3.1 Definitions of 'Mitigation', 'Compensation', and 'Enhancement'

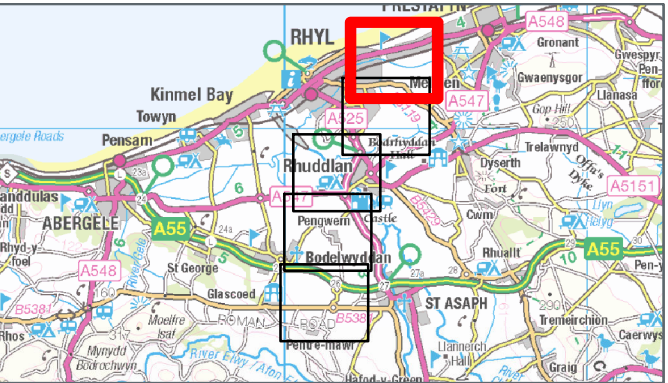
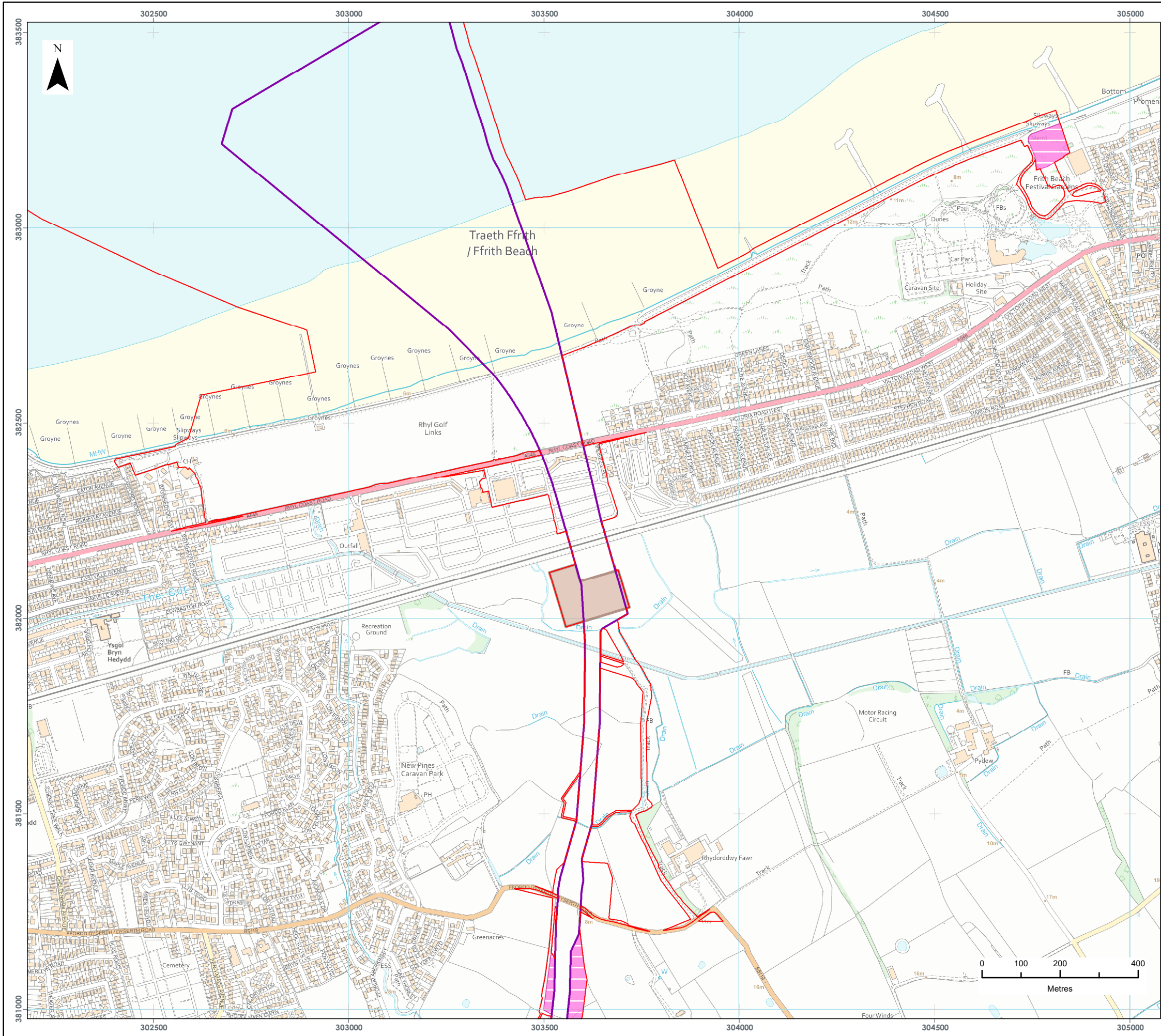
28 The definitions for the terms 'Mitigation', 'Compensation', and 'Enhancement' as used within this OLEMP and ES Chapter 5: Onshore Biodiversity are as follows:

- ▲ **Mitigation**, seeks to reduce and/ or eliminate the potential for significant effects to arise as a result of the project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects;
- ▲ **Compensation** describes measures taken to offset residual effects resulting in the loss of, or permanent damage to, ecological features despite mitigation. For example, it may take the form of replacement habitat or improvements to existing habitats; and
- ▲ **Enhancement** is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

3.2 Scope of this document relating to Ecology

3.2.1 Spatial scope

29 This OLEMP relates to the onshore elements of AyM. Except where stated otherwise this applies to the areas within the project OL that lie above Mean High Water Springs (MHWS). Details of ecological mitigation measures relating to the offshore elements of AyM, including intertidal and subtidal environments, are provided in the relevant chapters (application ref: 6.2.5 (Benthic Subtidal and Intertidal Ecology). The onshore OL is shown in Figure 3 to Figure 7, which also shows the locations of various different areas within the OL, as referred to in this document.



LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Transition Joint Bay Construction Compound
- Proposed Onshore Substation (OnSS) Footprint
- Unlicensed Work Zone
- Potential Temporary Mitigation Area

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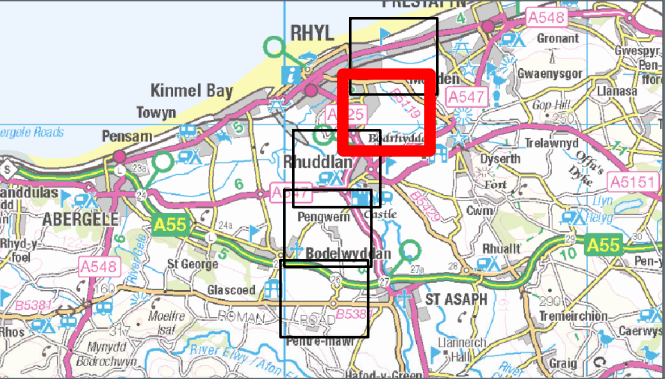
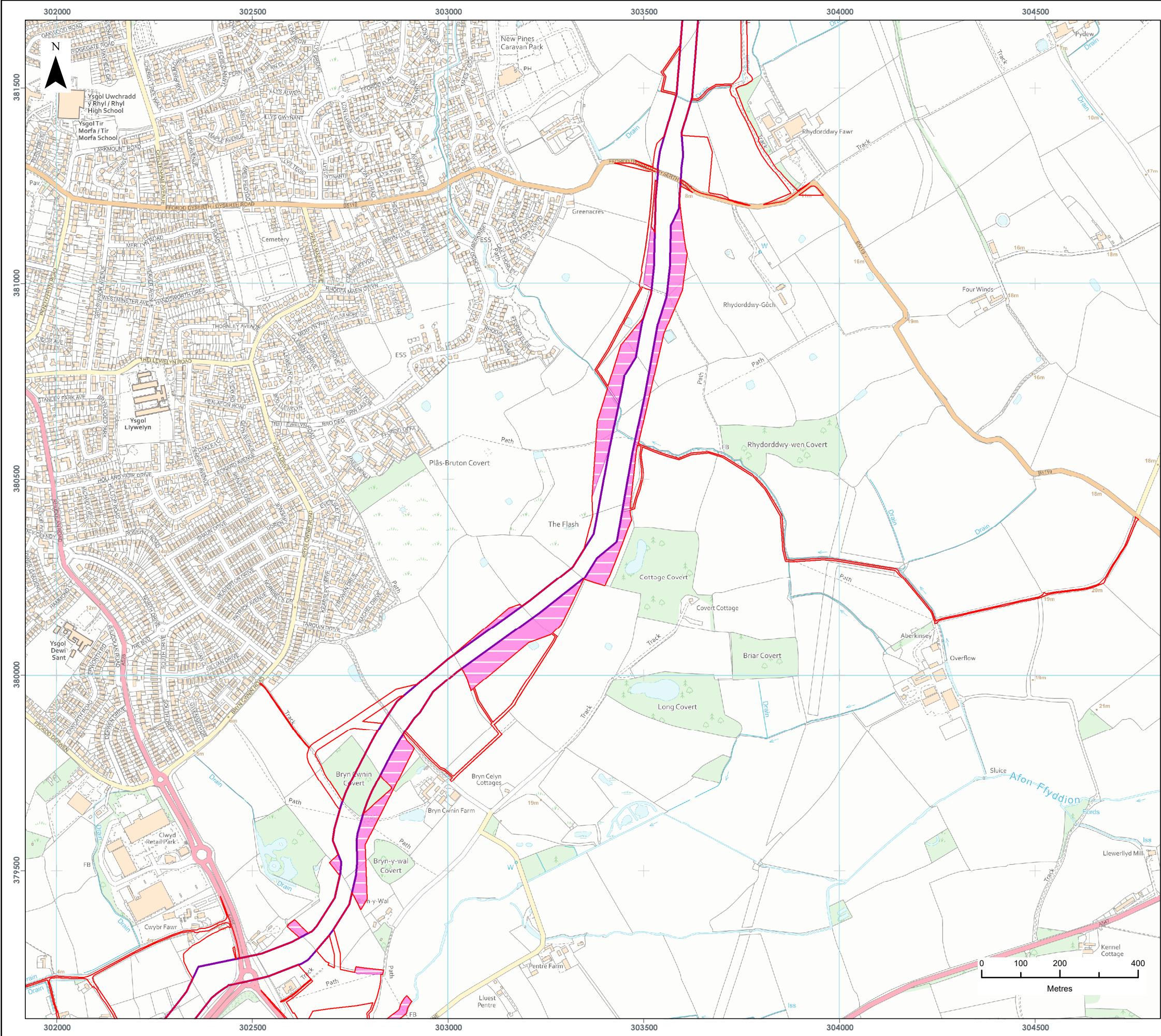
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TEMPORARY MITIGATION AREAS**

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FIGURE NUMBER:
FIGURE 3

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LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Transition Joint Bay Construction Compound
- Proposed Onshore Substation (OnSS) Footprint
- Unlicensed Work Zone
- Potential Temporary Mitigation Area

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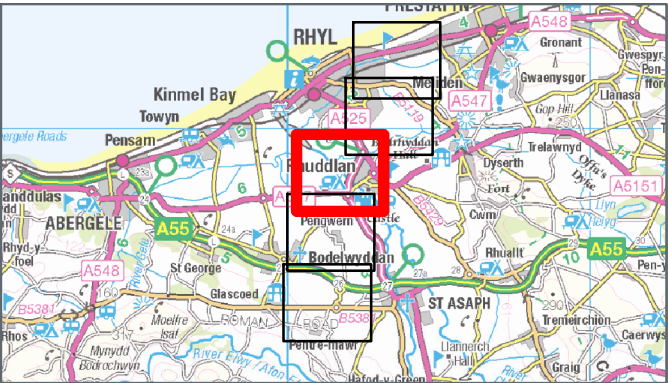
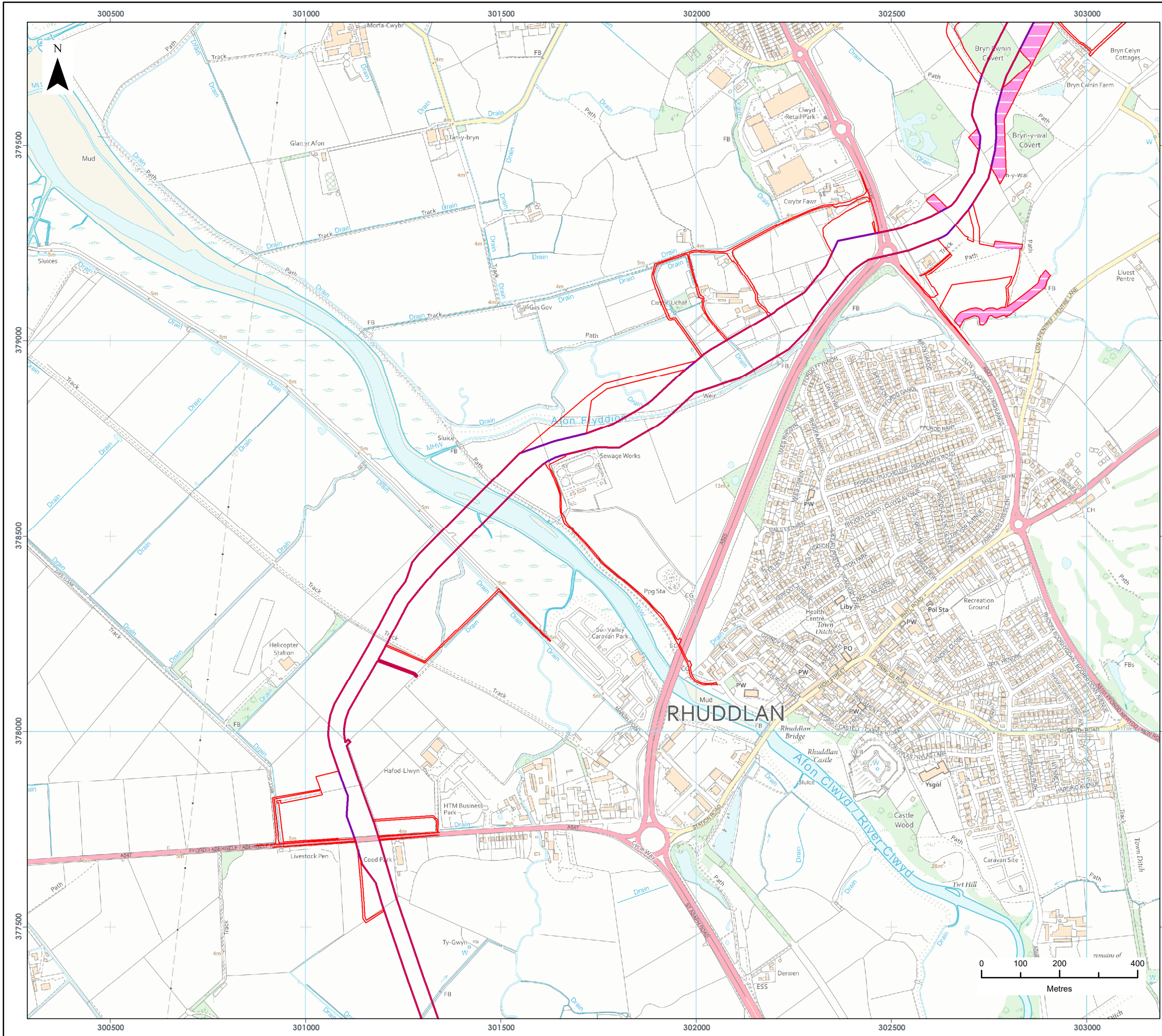
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FIGURE 4

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LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Transition Joint Bay Construction Compound
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- Unlicensed Work Zone
- Potential Temporary Mitigation Area

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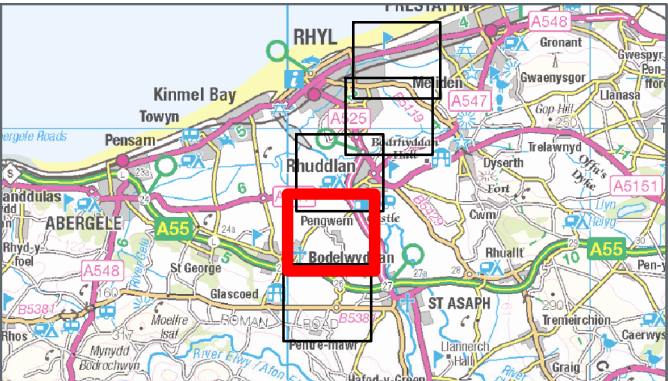
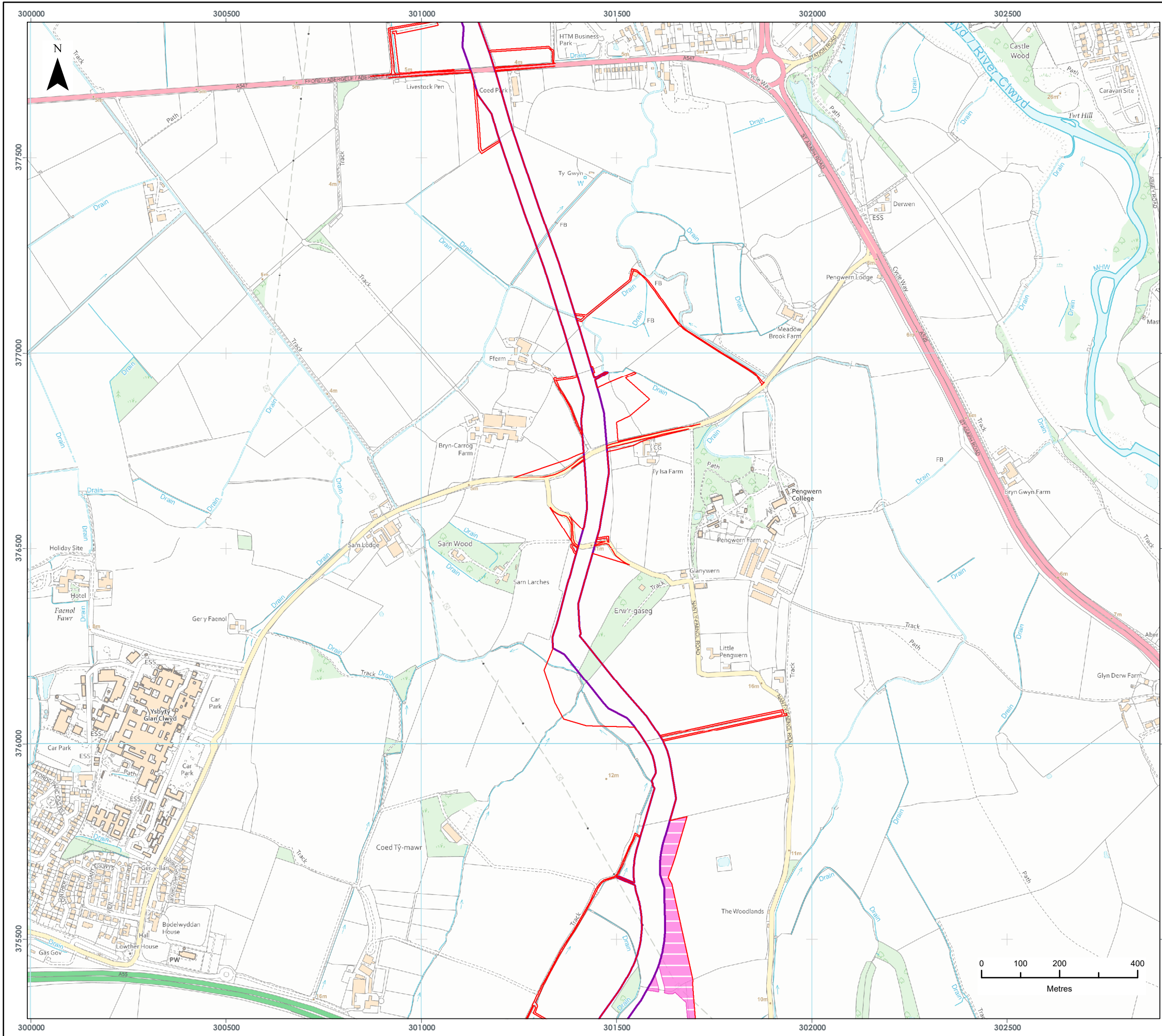
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FIGURE 5

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LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Transition Joint Bay Construction Compound
- Proposed Onshore Substation (OnSS) Footprint
- Unlicensed Work Zone
- Potential Temporary Mitigation Area

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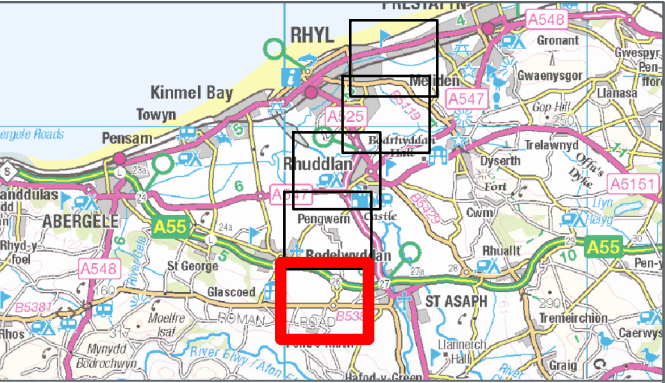
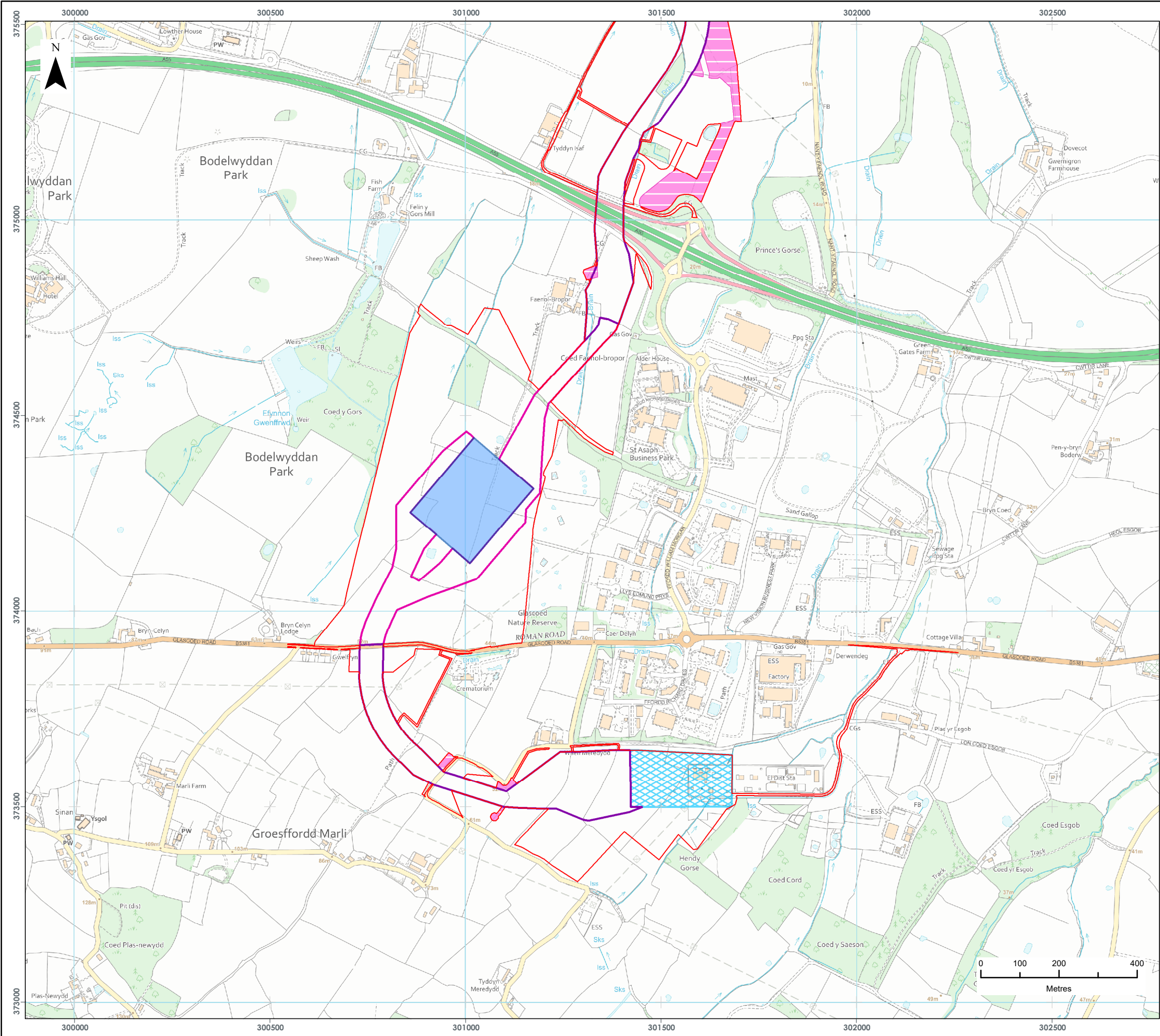
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**PROPOSED
TEMPORARY MITIGATION AREAS**

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FIGURE 6

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LEGEND

- Order Limits
- Proposed Onshore Export Cable Corridor
- Proposed Substation Cable Corridor Zone
- Proposed Transition Joint Bay Construction Compound
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FIGURE NUMBER:
FIGURE 7

SCALE: 1:10,000 PLOT SIZE: A3 DATUM: ODN COORDINATE SYSTEM: British National Grid

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- 30 The main exception to the above relates to measures to avoid disturbance to birds using intertidal habitats, which are also included in this OLEMP. This mirrors the approach taken in the ES where potential impacts on birds using intertidal habitats are addressed in Volume 3, Chapter 5: Onshore Biodiversity and nature Conservation (application ref 6.3.5) whilst intertidal habitats and faunal communities (other than birds) are addressed in Volume 2, Chapter 5 (Document Ref: 6.2.5).
- 31 Within the onshore environment, mitigation, compensation and enhancement measures, as defined in the ES and Section 3.1 above, will be restricted to the area within the OL. Further details of how mitigation, compensation and enhancement measures will be secured are provided in Section 9.

3.2.2 Temporal scope

- 32 This OLEMP primarily relates to measures to be employed during the construction phase of the onshore elements of AyM, and restoration aftercare period (detailed at Section 2 and 4) i.e. until such time as reinstatement measures are deemed to be successful. It also covers longer term management of habitat at the OnSS, for which full details will be included in the Final LEMP. Where relevant, measures to be employed during preventative (planned) maintenance throughout the operational phase are also included within this OLEMP. Measures which relate to the operational phase are highlighted in Section 8.2. A programme will be provided in the Final LEMP, once further details of all the relevant measures have been developed and agreed post consent.
- 33 The extent or nature of any unplanned corrective maintenance required during the operational phase cannot be fully predicted at this stage as it is by its nature unplanned, and therefore mitigation requirements cannot be fully determined. Mitigation measures relating to any unplanned corrective maintenance during the operational phase are therefore not included within this document. If required, mitigation for unplanned corrective maintenance would be subject to agreement as part of the process of updating and agreeing the Final LEMP.

34 No decision has been made regarding the final decommissioning for the onshore components of AyM. It is anticipated that a separate LEMP would be produced to cover the decommissioning phase as part of the proposed decommissioning plan. Therefore, the decommissioning phase is not covered in this document. Decommissioning measures would be based on updated ecological survey data and would adhere to relevant legislation and good practice guidelines in place at the time.

3.2.3 Technical scope (Ecology)

35 This OLEMP provides summary details of mitigation and compensation measures incorporated into the onshore elements of AyM to address potential impacts on landscape and biodiversity resources. Potential impacts on these resources are considered in the ES Volume 3, Chapter 2 LVIA (application ref: 6.3.2) and Chapter 5, Onshore Biodiversity (application ref: 6.3.5).

36 The measures covered by this OLEMP for ecology include:

- ▲ Proposals for reinstatement following construction;
- ▲ Proposals for screening planting at the OnSS;
- ▲ Proposals for the protection of retained habitats;
- ▲ Proposal for biodiversity enhancements at the OnSS; and
- ▲ Proposals for measures to address potential impacts on protected or notable faunal species, including:
 - Great crested newts (GCN);
 - Fish (eels);
 - Reptiles;
 - Birds (breeding birds and non-breeding waterbirds);
 - Bats;
 - Badger;
 - Water vole;
 - Otter; and
 - Other mammals.

- 37 Details of proposed measures to manage potential impacts due to accidental pollution, both airborne (including dust) and waterborne, are provided in the CoCP and are not repeated here. The CoCP also includes details of biosecurity measures to be employed to prevent the spread of invasive non-native species and disease, which are also not repeated here.
- 38 This OLEMP includes initial proposals for biodiversity enhancements, in accordance with relevant planning policy. These proposals will be developed further in consultation with relevant stakeholders and details provided within the Final LEMP.
- 39 The OLEMP also includes proposals for monitoring, where required. Relevant, appropriately timed monitoring is important to enable the success of the measures set out in the LEMP to be determined and to identify the need for measures to be altered, if required.

4 Reinstatement

40 The following sections set out proposals for reinstatement at the following key locations

- ▲ Y Ffrith Local Wildlife Site (LWS)
- ▲ Clwyd Estuary and Adjacent fields LWS
- ▲ Fen habitat at The Flash

4.1 Y Ffrith LWS

- 41 A TCC for work at the beach will be located either at Garford Road west of the landfall, or east of the landfall, close to North Wales Bowls Centre, details of which are provided in the ES, Volume 3, Chapter 1: Onshore Project Description. If it is located close to North Wales Bowls Centre, the TCC will be located within an area of poor condition dune grassland.
- 42 Pre-construction botanical survey will be undertaken during the spring and/or summer prior to work commencing to determine the presence of notable or protected plant species in the area that would be affected by construction. The results will be used to identify areas which should be prioritised for salvage or other special measures, the details of which will be included in the Final LEMP.
- 43 Habitats will be reinstated following construction of the landfall and the removal of the TCC. The overall aim of the reinstatement will be to enable either the re-establishment of existing dune grassland habitats from turf salvaged from specific areas (guided by results from pre-construction botanical survey) or the creation of dune grassland via reinstatement of appropriate soils and seeding. If seeding is required, it would be with native, ideally local provenance seed comprising a mixture that includes the dominant and characteristic species of adjacent, retained dune grassland. Further details will be provided in the Final LEMP once development proposals in this area are finalised.

- 44 Where possible, salvaged vegetation and excavated soils will be carefully stored and reinstated as soon as possible. Soils will be reinstated in a way that is suitable for the chosen method of vegetation establishment (see below), including any necessary soil preparation. Given the type of habitat to be reinstated, no soil would be imported to facilitate reinstatement.
- 45 Reinstated habitats will be subject to an aftercare period of up to three years following reinstatement (or if seeding is used, following seeding), to be extended (if required) if reinstatement is not deemed to have been successful. The methods of aftercare will be set out in the Final LEMP and subject to the results of monitoring (see Section 8) however, these are likely to include the management of undesirable weeds. During the aftercare period areas are likely to need temporary protection from disturbance by people, dogs and grazing rabbits to allow full reinstatement. The precise methods for protection will be agreed as part of the Final LEMP but are likely to involve the use of temporary fencing and signage.
- 46 Reinstatement and aftercare would be the responsibility of AyM or its appointed contractors and would only be undertaken by suitably experienced contractors. Following the aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. natural processes/minimum intervention and would be the responsibility of the existing land owner/ manager.
- 47 Following the aftercare period and once vegetation establishment is deemed successful it is intended that public access will be reinstated in line with existing access arrangements. Management of access during construction is covered in detail within the Outline PAMP (Volume 8, Document 8.3.9: CoCP Appendix, Public Access Management Plan) that is provided as part of the outline CoCP.

4.2 Clwyd Estuary and Adjacent Fields LWS

- 48 Within Clwyd Estuary and Adjacent fields LWS, excavated soils will be carefully stored and reinstated as soon as possible following cable installation. Soils would be reinstated in a way that is suitable for the chosen method of vegetation establishment. Further details regarding soil storage and reinstatement will be provided in the Final LEMP.
- 49 The majority of the LWS supports agricultural grassland or cropland habitat of relatively low conservation value. This will be re-instated to its previous state following construction. This shall include the re-creation of drainlines and hollows which are present in some locations (typically fields immediately adjacent to the River Clwyd).
- 50 The hedgerow and ditch network shall also be re-instated. Ditches shall be returned to their previous state, hedgerows will be replaced with a locally appropriate mixture of at least seven species, including standard trees (except directly over the Onshore ECC) at a 3:1 ratio for any lost.
- 51 Reinstated habitats will be subject to an aftercare period of up to three years following reinstatement, to be extended (if required) if reinstatement is not deemed to have been successful. The methods of aftercare will be agreed in the Final LEMP and subject to the results of monitoring (see Section 8) but are likely to include the management of undesirable weeds. During the aftercare period certain areas (such as adjacent to PROW) are likely to need protection from disturbance by people, dogs and grazing animals. The precise methods for protection will be agreed as part of the Final LEMP but is likely to involve the use of temporary fencing and signage.
- 52 Reinstatement and aftercare would be the responsibility of AyM or its appointed contractors and would only be undertaken by suitably experienced contractors. Following the aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. natural processes/minimum intervention and would be the responsibility of the existing land owner/ manager.

4.3 Fen Habitat at The Flash

- 53 The Onshore ECC and operational access passes through the eastern extremity of an area of lowland fen (UKHab f2a) present at The Flash, east of Rhyl. The overall aim of the reinstatement here will be to enable the re-establishment of fen habitat from adjacent unaffected areas; planting is not considered necessary in this instance.
- 54 The pre-existing topography, including hydrological connections, will be reinstated following works to ensure water retention. The area will be allowed to revegetate naturally (considered likely to be swift given the large amount of fen directly adjacent and to minimise risk of introduction of aquatic invasive non-native species (INNS)). Further details will be provided at the detailed design stage in the Final LEMP.
- 55 Reinstated habitats will be subject to an aftercare period of up to three years following reinstatement, to be extended (if required) if reinstatement is not deemed to have been successful. The methods of aftercare will be agreed in the Final LEMP and subject to the results of monitoring (see Section 8) but are likely to include the management of undesirable weeds. During the aftercare period certain areas (such as adjacent to PROW) are likely to need protection from disturbance by people, dogs and grazing animals. The precise methods for protection will be agreed as part of the Final LEMP but is likely to involve the use of temporary fencing and signage.
- 56 Reinstatement and aftercare would be the responsibility of AyM or its appointed contractors and would only be undertaken by suitably experienced contractors. Following the aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. natural processes/minimum intervention and would be the responsibility of the existing land owner/ manager.

4.4 Other areas

4.4.1 OnSS Area

- 57 The OnSS footprint, plus adjacent construction TCCs and accesses, affects agricultural grassland of low intrinsic ecological value, plus hedgerows and mature trees which are of greater interest. Most of the trees that would be lost through development of the OnSS or onshore ECC in this area are oak trees and of ecological value for potential use by bats and other species (see Section 6.3.2 for further details). This area is also used by the local GCN population (see Section 6.3.1 for details).
- 58 Compensation for loss of hedgerows and trees will be provided by re-instating native, species-rich hedgerows with trees, and including ditches where these were also present originally, as well as creating new hedgerows where this is not possible. Hedges will be reinstated at their original location (or as close as possible), new hedgerows will be located so as to re-establish links and maintain the network. In all cases the hedgerows will comprise a locally appropriate mixture of at least seven woody species and including heavy standard trees at a 3:1 ratio for any lost (noting that trees will not be planted above cable routes).
- 59 Additional compensation for the loss of trees will be provided by the proposed screen planting at the OnSS (see Section 2). All additional planting would involve native species appropriate to the site.
- 60 At the OnSS TCC, grassland will be reinstated to its previous state following construction. Elsewhere, grassland will be reinstated with the aim of creating the S7 Priority Habitat lowland meadow. This shall be initiated via careful soil management, to ensure the replaced soil is of low fertility and prepared to a good standard. In this instance due to the likely high nutrient status of the soils, it is proposed to invert the topsoil and subsoil prior to reseeding. At certain locations a thin depth (<5cm) of topsoil may be appropriate to ensure slight earlier colonisation (this mainly being driven by the requirements of GCN, and which would be the subject of an NRW European Protected Species Licence (EPSL), see later section).

- 61 The seed mixture used would be native, locally appropriate mixture, ideally gathered as green hay crop from a nearby species rich meadow.
- 62 Reinstated habitats will be subject to an initial aftercare period of up to three years following reinstatement, to be extended (if required) if reinstatement is not deemed to have been successful. The methods of aftercare will be agreed in the Final LEMP and subject to the results of monitoring (see Section 8) but are likely to include the management of undesirable weeds. During the aftercare period certain areas (such as adjacent to the bridleway that runs to the north of the OnSS site) are likely to need protection from disturbance by people, dogs and grazing animals. The precise methods for protection will be agreed as part of the Final LEMP but is likely to involve the use of temporary fencing and signage.
- 63 Areas that form part of the compensation and mitigation requirements for great crested newt (GCN) and bats will be subject of a long term management plan (ie for the lifetime of the development), as part of the NRW EPSL requirements (see Section 6.3.1 and Section 6.3.2).
- 64 Reinstatement and aftercare would be the responsibility of the applicant or its appointed contractors and would only be undertaken by suitably experienced contractors.
- 65 Management of access during construction is beyond the scope of this OLEMP and is covered in detail within the OPAMP that is provided as part of the outline CoCP.

4.4.2 Onshore Export Cable Corridor and TCCs

- 66 The Onshore ECC and TCCs largely affect habitats of low conservation value, i.e. agricultural grassland and cropland. These will be reinstated to their previous state following construction.

- 67 The Onshore ECC passes through 128 hedgerows and up to 33 trees that could also be lost during construction. The number of trees which need to be removed will be kept to a minimum but these trees will not be replaced *in situ* for operational reasons (i.e. because access to the Onshore ECC is required). Most of the trees to be lost are oak trees and of ecological value for potential use by bats and other species (see Section 6.3.2 for further details).
- 68 Compensation for loss of hedgerows will be provided by re-instating native, species-rich hedgerows with trees, and including ditches where these were also present originally. Hedges will be reinstated at their original location and comprise a locally appropriate mixture of at least seven woody species and including heavy standard trees at a 3:1 ratio for any lost (noting that trees will not be planted above the installed cables).
- 69 Compensation for the loss of trees along the route will be provided by the proposed screen planting at the OnSS (see Section 4.4.1 and Section 2).
- 70 Reinstated habitats will be subject to an aftercare period of up to three years following reinstatement, to be extended (if required) if reinstatement is not deemed to have been successful. The methods of aftercare will be agreed in the Final LEMP and subject to the results of monitoring (see Section 8) but are likely to include the management of undesirable weeds. During the aftercare period certain areas (such as adjacent to PROW) are likely to need protection from disturbance by people, dogs and grazing animals. The precise methods for protection will be agreed as part of the Final LEMP but is likely to involve the use of temporary fencing and signage.
- 71 Reinstatement and aftercare would be the responsibility of AyM or its appointed contractors and would only be undertaken by suitably experienced contractors. Following the aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. natural processes/minimum intervention and would be the responsibility of the existing land owner/ manager.

- 72 Following the aftercare period it is intended that public access will be maintained in line with existing access arrangements and that all existing footpaths will continue to be used. Management of access during construction is beyond the scope of this OLEMP and is covered in detail within the outline PAMP that is provided within the outline CoCP.

5 Protection of retained habitats

5.1 Habitats within or adjacent to LWS, Glascoed Nature Reserve or Fen Habitat at The Flash

5.1.1 Protection of retained habitats during construction

- 73 Working areas within/adjacent to LWS, Glascoed Nature Reserve or the fen habitat at The Flash will be kept to the minimum area necessary with the extent of the working area dependent upon the final design solution adopted. Working areas will be enclosed within temporary fencing (e.g. Heras fencing) to avoid inadvertent damage to adjacent habitats. Fencing locations will be agreed on site by the ECoW to minimise disruption to existing site users, as far as possible.
- 74 All retained trees located directly adjacent to working areas will be protected by fencing around Root Protection Areas (RPAs) within the OL during construction, in accordance with BS 5837:2012 (British Standards Institution, 2012). The location and extent of any RPAs and fencing details will be specified in the Final LEMP.

5.1.2 Protection of retained habitats during the operational phase

- 75 Regular inspections of the TJBs and joint pits within Clwyd Estuary and Adjacent Fields LWS will be undertaken on foot or using a light vehicle only, the latter will be restricted to the operational accesses shown on the works plans and other existing tracks.

5.2 Other habitats

- 76 Working areas will be enclosed within temporary fencing (e.g. Heras fencing) to avoid inadvertent damage to adjacent habitats. All retained trees will be protected by Root Protection Areas (RPAs) within the OL during construction, as set out in Section 5.1.

6 Measures to address potential impacts on protected and notable species

6.1 Background

- 77 This section provides outline details of measures to minimise and compensate for potential impacts on protected and notable species and ensure compliance with relevant wildlife-related legislation, e.g. the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017.
- 78 Protected and notable species which could potentially be affected by the onshore elements of AyM are set out in the ES, Volume 3, Chapter 5: Onshore Biodiversity and measures for those species are included here. Based on current information mitigation and compensation measures are not required for any other species or species groups.

6.2 Pre-construction surveys

- 79 Due to the time that will have elapsed since the last surveys and the possibility that species presence or activity could have changed in the intervening period, pre-construction surveys will be undertaken for a number of species/ species groups. These include certain species which, based on current information, will not be affected by the proposed development (and are therefore not subject to the mitigation and compensation measures set out in this document) but which could potentially (re)colonise the area within the OL prior to construction commencing.
- 80 The results of the pre-construction surveys will be used to identify whether any changes to the measures proposed in Section 6.3 are required and the Final LEMP will be updated to reflect the survey results, as required.

- 81 Table 1 provides further details of the pre-construction surveys proposed, including details of proposed survey areas (focussing on the areas likely to be affected by the works), timings and methodologies. All surveys will be undertaken by suitably experienced/ licensed ecologists who are members of an appropriate professional body, e.g. CIEEM.

Table 1: Pre-Construction Surveys

SPECIES/GROUP	SURVEY AREA	SURVEY TIMING	SURVEY METHODS
Great crested newt (GCN) <i>Triturus cristatus</i>	Data for ponds within 250m of the OL will be gathered. Survey extent TBC depending on availability of current, pre-existing data.	April 15 th – June 30 th (eDNA survey) and mid-March to mid-June for population surveys, during the season prior to construction commencing.	eDNA survey to be carried out in accordance with NRW (undated). Population survey undertaken in accordance with English Nature (2001).
Bats	All trees within or immediately adjacent to the DOL	April to September during the season prior to construction commencing.	In accordance with good practice, currently Collins, J (ed) (2016).
Barn Owl <i>Tyto alba</i>	Suitable structures or trees within 100 m of the OL (as identified during surveys in 2021, refer to Volume 5, Annex 5.5.8: Breeding bird survey) to	March to July during the season prior to construction commencing.	Survey to follow standard methods, as specified by Gilbert <i>et al.</i> (1998) and Shawyer (2011).

SPECIES/GROUP	SURVEY AREA	SURVEY TIMING	SURVEY METHODS
	determine current occupancy.		
Badger <i>Meles meles</i>	All terrestrial habitats within 50 m of the OL.	3-6 months prior to construction commencing.	In accordance with good practice ie Scottish Natural Heritage (SNH) (2003).
Water vole <i>Arvicola amphibius</i>	All water courses within or immediately adjacent to the OL (200 m upstream/ downstream of OL)	April to September during the season prior to construction commencing	In accordance with Dean <i>et al</i> (2016).
Otter <i>Lutra lutra</i>	All water courses within or immediately adjacent to the OL (250 m upstream/ downstream of OL)	3-6 months prior to construction commencing	In accordance with Chanin (2003).

6.3 Measures to address potential impacts on protected and notable species during construction

6.3.1 Great Crested Newt (GCN)

82 GCN populations typically occur as a metapopulation, i.e. a group of spatially separated populations which interact at some level across a landscape of breeding ponds and terrestrial habitat. Four metapopulations occur within the OL and may be impacted via:

- ▲ temporary loss of terrestrial habitat (either directly, or via barriers to movement) along the route;
- ▲ permanent terrestrial habitat loss at the OnSS;
- ▲ Accidental killing and injury; and/or
- ▲ Accidental pollution to breeding ponds.

83 GCN is protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981. It is also a species of principal importance for the conservation of biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016.

84 Embedded mitigation for impacts to GCN is via project siting and design. The embedded measures which are pertinent to GCN at the OnSS area include retention of all ponds, with trees and hedgerows retained wherever practicable. Additional key principles that will be followed in order to mitigate and compensate for impacts are described below.

Principle 1.

85 Mitigation for temporary loss of foraging areas along the onshore ECC will be provided where practical within the OL as close as possible to the area lost (see following paragraph), or via financial contributions toward local, pre-existing GCN conservation efforts in the locality. Any such contributions would be subject to discussion and agreement with NRW and the conservation organisation responsible for implementing it.

- 86 Wherever practical, mitigation would be provided within the OL as close as possible to the area that is temporarily lost and accessible to the nearest breeding ponds. In most cases this is anticipated to comprise a temporary relaxation of/changes to agricultural grassland management in areas within the OL that are near to the ponds, to enable a more diverse and less intensively managed sward to develop. Depending on the location, additional seeding of grassland/ tall herbs may be used to ensure sufficient resource remains. Cut vegetation (such as arisings from hedgerow or scrub removal) will be used to create brash piles for use by sheltering amphibians. Refer to Figure 2 to Figure 7 for potential locations.

Principle 2.

- 87 Permanent loss of hedgerows at the OnSS, which may be used by sheltering GCN, will be compensated via creation of new broadleaved woodland and species rich hedgerows comprising locally appropriate species. These will be located so as to link or buffer existing woodlands, scrub and hedgerows. Figure 2 shows, in principle, how woodland and hedgerow planting could be undertaken at the OnSS to satisfy both landscape and ecological objectives. In addition, it identifies areas where grassland management will be undertaken primarily for the benefit of GCN, but with consequential benefits for other animal species too.
- 88 Brash piles and log piles will be created to serve as hibernacula and places of shelter.

Principle 3.

- 89 Retain the two existing ponds that are adjacent to the OnSS Footprint so that these will remain accessible to GCN throughout the construction phase via protected habitat links and/ or underpasses. To avoid the OnSS plus related construction compounds and construction access from becoming a barrier to GCN movement, a wildlife underpass is proposed to enable continued east-west movement across the area. The design of the underpass will be informed by the best available evidence from current guidance and successful mitigation schemes.

Principle 4.

- 90 Drainage/management of surface water at the OnSS will not represent a hazard to GCN. In particular, gully pots will be avoided wherever possible, or where they prove essential shall be set away from any adjacent kerbs to prevent entrapment of GCN.

Proposed measures

- 91 The EPSL application and Method Statement will include the measures that will be implemented and will be submitted to NRW once final design details are available and pre-construction surveys for GCN completed. To summarise, and based on current information, it will include:

- Details of compensation for temporary and permanent loss of terrestrial habitat at the OnSS (refer to Figure 2 which identifies these areas);
- Scheduling of certain work to avoid sensitive periods of the GCN life cycle (e.g., refugia would be removed during the GCN active season, not during the hibernation period);
- All work with potential to affect GCN will be overseen by the named ecologist on the EPSL or his/her agent (a suitably experienced ECoW);
- The ECoW will provide a toolbox talk to site workers in advance of work with potential to affect GCN. This will detail the potential presence of GCN, their identification and what to do if one is seen, and outline all the measures included in the licence Method Statement;
- Installation and maintenance of amphibian-proof fencing along parts of the route and at the OnSS, to prevent GCN access during the construction period. Fencing locations will be designed in consultation with relevant stakeholders, with locations specified in the Final LEMP;
- Removal of GCN (and other amphibians) from areas where there is risk of injury or death in advance. Translocated GCN would be moved to the nearest suitable habitat that would remain undisturbed during construction;
- Ensuring GCN access to retained ponds via inclusion of underpasses at proposed new access roads/tracks;
- Minimising the risk of injury or death as a result of entrapment in the site drainage scheme; and

- ▲ A post-construction commitment to monitor the GCN population at the OnSS location and to undertake habitat management as necessary, in accordance with a long-term management plan to be agreed with NRW and included in the Final LEMP.

6.3.2 Bats

- 92 Three species of bat are confirmed to roost at five trees within or directly adjacent to the OL:
- ▲ Common pipistrelle *Pipistrellus pipistrellus*;
 - ▲ Soprano pipistrelle *Pipistrellus pygmaeus*; and
 - ▲ Noctule *Nyctalus noctula*.
- 93 A further 41 trees with moderate or high potential to support bats are present within the OL and may also be affected. At least a further seven bat species have been recorded within the DOL and are considered therefore to roost within a relatively short distance; some of these species are also known to roost in trees and therefore there is a possibility of a roost being present within the OL in future. These include Nathusius' pipistrelle *Pipistrellus nathusii* and whiskered bat *Myotis mystacinus*.
- 94 All bat species are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 . Noctule and soprano pipistrelle are also species of principal importance for the conservation of biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016.
- 95 The construction phase will result in the loss of a number of mature trees, mainly oaks, most of which have moderate or high potential to support bats, including at least two that supported roosts in 2021.
- 96 An NRW EPSL will be required in advance of work that could affect roosting bats. Since tree roosting bats utilise a range of locations over any given season, the Licence will be sought to cover work at all trees with potential roost features (PRF) (i.e. the total roost resource) that may be affected by the project. All work undertaken under EPSL and which could result in disturbance of bats would be overseen by the Named Ecologist, or his/her Accredited Agent (such as a suitably skilled and experienced ECoW).

- 97 The EPSL application will be submitted to NRW once final design details are available and pre-construction surveys for bats completed. Key principles that will be followed in order to mitigate and compensate for impacts are described below.

Principle 1.

- 98 No net loss of bat roosting habitat. Compensation roost features will be provided for every moderate or high potential roost feature prior to loss; to include bat boxes on retained trees or installed poles, re-use of whole felled trunks by setting vertically as monoliths and/ or veteranisation (cutting and carving into healthy trees to mimic nature, to speed the process of decay and rot holes) as appropriate.

Principle 2.

- 99 Compensation features will be installed as close as possible to those lost, whilst also addressing other constraints, such as the requirement to be within an unlit area, ideally away from Public Rights of Way (PROW) and within or close to potential flight lines. In all cases the compensation measures for confirmed roost loss would be within the Core Sustenance Zone of the species concerned.

Principle 3.

- 100 Subject to timing of pre-construction survey, re-scoping (pre-felling check) at the point of felling. Due to natural decay processes and weather damage, historic data will not be used as a basis for final decision making in respect of felling: all trees will be re-scoped (ground-level only) by a suitably experienced ECoW immediately prior to felling. Thereafter the following measures will be taken:

- ▲ Low potential – trees soft-felled under the direction of a suitably experienced ECoW as appropriate. In some cases for trees that are of low suitability, there will be no requirement for soft or sectional felling. This will be determined by the features present and decided by the ECoW on site. Trees may be felled during all months of the year.
- ▲ Moderate and High potential – trees will be subject to an aerial inspection by a suitably qualified and licensed batworker immediately prior to felling.

- If no evidence of bats is recorded and bat absence can be conclusively determined at all PRF, the tree can then be felled without additional special measures. Trees may be felled during all months of the year.
 - If it is not possible to conclude bat absence (such as with long or complex PRF which preclude full endoscope inspection, or if parts of the tree are inaccessible due to fragility) the trees plus the surrounding 10m vegetation (minimum) will be left *in situ* until the bat active season (April – October). Prior to felling, these trees will be subject to a single emergence and re-entry survey (i.e. back-to-back), and assuming no bats are recorded, an update aerial inspection by a suitably qualified licensed batworker. If no evidence of bats is recorded during the process, the PRF containing parts of the tree will then be soft and/or sectional felled within 24 hours of the preceding dusk survey, under the direction of the ECoW.
- ▲ Confirmed Roost – in all cases felling of roost trees will take place during the period that bats are most likely to be absent or least sensitive to impacts (i.e. in autumn/winter in the case of maternity roosts).
- All trees will be subject to an aerial inspection by a suitably qualified and licensed batworker immediately prior to felling. If no evidence of bats is recorded and bat absence can be conclusively determined at all PRF, the tree can then be felled without additional special measures.
 - If it is not possible to conclude bat absence the tree plus the surrounding 10m vegetation (minimum) will be left *in situ* until the bat active season (April – October). All work would be closely supervised by the named ecologist on the licence or his/her agent (a suitably qualified and licensed batworker) and the methods of felling will be specific to the tree/roost in question. Works may include additional survey to better determine bat absence and/or sectional felling, stripping of ivy, exclusion or capture of bats in advance.

Principle 4.

- 101 A post-construction commitment to monitor the compensation roost locations and to undertake habitat management as necessary, in accordance with a long-term management plan to be agreed with NRW and included in the Final LEMP.

Proposed measures

102 Impacts to commuting and foraging bats will be reduced by:

- At key locations where bat activity is likely to be highest, filling temporary hedgerow gaps overnight during construction (and thereafter) with a “dead hedge” until such time as reinstated vegetation has established and is at least 1 m tall. These locations shall be identified in the Final LEMP, based on 2021 activity survey data plus final scheme details. During construction the “dead hedge” will comprise Heras fencing (or similar, to enable sections to be manoeuvred into/out of position), with brash attached to a height of at least 1.2m. Post construction the “dead hedge” will comprise brash to a height of at least 1.2m, held in place with untreated wooden stakes, and will be allowed to degrade naturally.
- Permanent loss of hedgerows at the OnSS which may be used by commuting and foraging bats will be compensated via creation of new broadleaved woodlands and species rich hedgerows comprising locally appropriate species. These will be located so as to link or buffer existing woodlands, scrub and hedgerows.
- Figure 2 shows, in principle, how woodland and hedgerow planting will be undertaken at the OnSS to satisfy both landscape and ecological objectives. In addition, it identifies areas where grassland management will be undertaken primarily for the benefit of GCN, but with consequential benefits for other animal species, including bats.

6.3.3 Breeding birds

103 Barn owl, a species listed on Schedule 1 of the Wildlife and Countryside Act 1981, has been recorded breeding within the OL in 2021. All wild birds are subject to protection under Section 1 of the Wildlife and Countryside Act 1981, which makes it an offence to intentionally damage or destroy the nest of any wild bird while that nest is in use or being built. Bird species listed on Schedule 1 are also protected against intentional or reckless disturbance while building a nest; in, on or near a nest containing eggs or young; or with dependent young.

- 104 Wherever possible, vegetation which could support nesting birds (e.g. trees, scrub or long grass) will be cleared outside the main bird breeding season (March to August inclusive) to avoid damage to, or destruction of nests. Where this is not possible vegetation to be cleared will be checked for active nests by the ECoW no more than two days prior to clearance. If active nests are found, vegetation clearance in the applicable area (to be determined by the ECoW on a nest-specific basis) will be delayed until the relevant nesting attempt(s) has finished. In order to avoid birds potentially nesting within piles of cut vegetation, all cleared vegetation will be removed from working areas immediately following clearance.
- 105 Update surveys for Schedule 1 species (barn owl) will take place during construction (as required, i.e. based on the results of pre-construction surveys and depending on the planned timing of construction works in the relevant areas). Avoidance of disturbance to barn owls whilst nesting (and therefore compliance with the relevant legislation) will be achieved through the implementation of disturbance-free buffer zones around active nests. The extent of any buffer zones will be location-specific and will be determined by the ECoW, taking into consideration relevant guidance (e.g. Ruddock and Whitfield, 2007) and site-specific factors, e.g. topography, screening and other potential sources of disturbance. The ECoW will then monitor any nesting attempts to determine when nesting attempts have finished and works may proceed and also to check that the buffer zones implemented are successful.

6.3.4 Non-breeding waterbirds

- 106 In order to reduce disturbance to wintering waterbirds at the landfall and River Clwyd crossing, the following measures will be employed:
- Piling (if required for the establishment of a temporary cofferdam at the landfall) would either take place outside the winter period (October to March) or utilise less noisy, vibro-piling technology, unless otherwise agreed with DCC.

- ▲ If required, depending on the final locations and timing of the works, HDD pits and other working areas at the landfall and River Clwyd crossing would be screened, where possible, to provide an element of visual and acoustic screening of active working areas. The need for screening and details of proposed screening, if required, will be included in the Final LEMP and Construction Method Statement (that forms part of the CoCP).

6.3.5 Badger

- 107 Badger is confirmed to occur throughout the OL, with main, subsidiary and outlier setts all recorded. However, agricultural fields were found not to support any setts. It is considered likely that the area within the OL helps to support at least five clans throughout the year.
- 108 Badgers and their setts are protected via the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981.
- 109 Based on current information, the construction phase will not directly impact any setts, however potential impacts shall be reviewed following completion of the pre-construction surveys. Checks for the presence of badger setts (and other protected or notable species) will also be carried out by the ECOW prior to vegetation clearance.
- 110 Reasonable avoidance measures shall be implemented and may include micro-siting certain elements and/or installing protective fencing to minimize disturbance to retained setts, ensuring excavations remain closed overnight or contain ramps such that badgers cannot become trapped and ensuring stockpiled soil is fenced or regularly disturbed so as to deter badger sett creation within it.
- 111 If pre-construction surveys determine that a badger sett will be affected, then a licence from NRW will be needed in advance of work that disturbs the sett. Depending on the degree of disturbance, mitigation may be relatively limited such as amending work schedules, or more complex in the event a sett requires closure, in which case creation of artificial replacement sett in advance may be needed (depending on the type and usage of the original). Any such measures would be discussed and agreed with NRW in advance, and would form part of the licence Method Statement.

6.3.6 Water vole

- 112 Water vole presence has not been conclusively proven in 2021 field surveys (see Volume 5, Annex 5.5.5: Otter and Watervole survey) at watercourses within or adjacent to the OL but cannot be ruled out in future.
- 113 Water vole is protected via the Wildlife & Countryside Act 1981 and water vole is also a species of principal importance for the conservation of biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016
- 114 If pre-construction surveys or ECoW pre-clearance checks conclude the species is present and there is potential for the detailed design to affect watercourses then mitigation for temporary habitat loss and disturbance may include:
- temporary relaxation of bankside cutting/grazing regimes or alterations to main river maintenance schedules outside working areas;
 - scheduling of work to avoid sensitive periods of the water vole life cycle;
 - deterrence or, if necessary, removal of water vole from areas where there is risk of injury or death in advance. Translocation of water voles would require a licence from NRW, deterrence may not, depending on the degree of disturbance; and
 - reinstatement of bankside habitats immediately after work, to include sowing with species rich locally appropriate sward and fencing to prevent stock access.

6.3.7 Otter

- 115 Otter has been recorded on the River Clwyd and Glanfyddion Cut (see Volume 5, Annex 5.5.5: Otter and Watervole survey (application ref 6.5.5.5)). Other water courses within the OL may also be used by this species for passage; those with sufficient water to support fish or amphibian populations may be used on occasion, or seasonally, for foraging.

- 116 Otter is protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife & Countryside Act 1981. It is also a species of principal importance for the conservation of biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016.
- 117 Reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation. These would be broadly similar to those described for badger (above).
- 118 Based on current information, the construction phase will not directly impact any otter holts or resting places, however potential impacts shall be reviewed following completion of the pre-construction surveys and pre-clearance checks by the ECoW. An EPSL may be necessary from NRW if a holt may be impacted.
- 119 If pre-construction surveys or ECoW pre-clearance checks conclude the species is present and that micro-siting to avoid impact is not possible then mitigation for temporary habitat loss and disturbance may include:
- ▲ scheduling of work to avoid sensitive periods of the otter life cycle;
 - ▲ deterrence of otter from areas where there is risk of injury or death in advance, such as by installation of otter-proof fencing;
 - ▲ minimising disturbance from light and human presence via temporary screening and potentially amending working hours; and
 - ▲ reinstatement of bankside habitats immediately after work, to include sowing with species rich locally appropriate sward and fencing to prevent stock access.

6.3.8 Other mammals

- 120 Checks for the presence of hedgehogs, polecats, hares or other protected or notable species will be carried out by the ECoW prior to vegetation clearance. Additional reasonable avoidance measures will be implemented/ mitigation licences applied for as necessary.

6.3.9 Reptiles

- 121 Common lizard has been recorded at Y Ffrith LWS; it is listed on Schedule 5 of the Wildlife and Countryside Act 1981 and protected in respect of killing, injuring and sale or offering for sale. It is also a species of principal importance for the conservation of biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016.
- 122 Reasonable avoidance measures will be employed to reduce the chances of inadvertently killing or injuring individual common lizards during construction works in potentially suitable reptile habitat. Potentially suitable habitat is present at the TCC at Y Ffrith, though it is possible that reptiles may be encountered at other areas within the OL including rough grass, field boundaries, scrub and hedgerows. However, since no reptiles were recorded during surveys at the OnSS, and due to the small number of pre-existing records, it is considered quite unlikely that reptiles will be encountered along much of the route.
- 123 Given that large areas of suitable habitat will remain unaffected by the works and most habitats will be reinstated or restored following construction, long term impacts on reptiles, if present, are not likely. However, reasonable avoidance measures will be employed where works take place within areas of potentially suitable habitat (as outlined above and as identified by the ECoW) to reduce the potential for inadvertently killing or injuring individual animals. Mitigation will involve the management of vegetation (e.g. strimming long grass) to discourage occupation by reptiles and the identification and removal of potential refugia and hibernacula (if present) prior to construction works taking place in the relevant areas. These works will be undertaken under the supervision of the ECoW.
- 124 The management of vegetation (by strimming or flailing) and removal of potential refugia should only be undertaken during the reptile active period of March to October and therefore may need to be carried out well in advance of construction in areas where work is scheduled to commence during the winter months. At least 24 hours will be left between vegetation management and construction works commencing in affected areas.

- 125 To minimise the potential for reptiles to become trapped in excavations, during the reptile active season (March to October) all excavations left open outside normal working hours will include a ramp at one end to enable reptiles (and other animals) to escape.

6.3.10 Fish (eels)

- 126 Construction may lead to disturbance to European eel that may use smaller water courses including ditches. Trenching work at smaller water courses and ditches will therefore cease at night, and will include measures such that eels cannot become trapped within the work area, such as ramped ends.

6.4 Measures to address potential impacts on protected and notable species during the operational phase

- 127 Operational practices will incorporate measures to prevent pollution and increased flood risk, including emergency spill response procedures, clean up and control of any potentially contaminated surface water runoff. Any such maintenance would follow good practice in line with the prevailing future guidance and legislation, which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats and minimise the risk of a pollution event. The locations of any protected and notable species that could potentially be adversely affected by planned inspections will be avoided as far as possible during preventative (planned) maintenance. Locations would be updated, as required, throughout the operational period and would be updated as required in light of any new information.
- 128 Unplanned maintenance would be subject to any necessary consents and consultation with the relevant nature conservation bodies prior to work taking place, with appropriate mitigation measures developed and implemented as required.

7 Biodiversity enhancements

7.1 Proposed biodiversity enhancements

- 129 A number of biodiversity enhancements, relevant to the effects of the project, will be provided as part of the project in accordance with relevant planning policy. A number of the mitigation and compensation measures set out in Sections 3, 4, 5 and 6.3 will result in an overall gain for biodiversity, depending on the details of the final proposals, e.g. where reinstatement leads to the establishment of more diverse hedgerows than those which are currently present. This section of the OLEMP, however, presents initial proposals for additional biodiversity enhancements that are separate from proposed mitigation and compensation measures and are intended to provide a net gain for biodiversity. These would take place within the OL at the OnSS.
- 130 Detailed proposals for biodiversity enhancements will be confirmed in the Final LEMP, following further discussions with relevant stakeholders. RWE or its appointed contractors will be responsible for the delivery of the agreed enhancements, with the works themselves undertaken by suitably experienced contractors under the supervision of a suitably qualified ecologist. A timetable for the implementation of the agreed enhancements will be provided in the Final LEMP but at this stage it is envisaged that all measures would be delivered in parallel with construction or immediately thereafter.
- 131 Biodiversity enhancements will be subject to an initial aftercare period of up to three years following creation, to be extended (if required) if deemed not to have been successful. The methods of aftercare will be agreed in the Final LEMP and subject to the results of monitoring (see section 7) and EPSL requirements. During the aftercare period certain areas (such as adjacent to PROW) are likely to need protection from disturbance by people, dogs and grazing animals. The precise methods for protection will be agreed as part of the Final LEMP but is likely to involve the use of temporary fencing and signage.

- 132 Areas that form part of the compensation and mitigation requirements for GCN and bats will be subject of a long term management plan (ie for the lifetime of the development), as part of the NRW EPSL requirements (see Sections 6.3.1 and 6.3.2). Further information will be included in the Final LEMP.
- 133 Aftercare would be the responsibility of RWE or its appointed contractors and would only be undertaken by suitably experienced contractors. Following the aftercare period it is intended that public access will be maintained in line with existing access arrangements and that all existing footpaths will continue to be used.
- 134 Initial proposals for additional biodiversity enhancements are shown on Figure 2 and include:
- Creation of five additional ponds/ pools located to the south east of the OnSS and ongoing management of the new ponds plus two existing ponds;
 - Creation of five reptile/amphibian hibernacula each measuring at least 1m³ and constructed from on site materials including soil, logs, brash and stone.
 - Creation of twenty reptile/amphibian refugia, each comprising brash piles or log stacks, at least 0.25m³.
 - Erection of ten bat boxes (additional to those required as compensation for PRFs to be lost) and ten bird boxes, including two pole mounted barn owl boxes;
 - Scrub management to promote structurally diverse grassland habitat and benefit reptiles and amphibians;
 - Creation of 9.8ha of species-rich, lowland meadow Priority Habitat and 6.05ha of diverse neutral grassland, plus management thereafter to ensure its nature conservation interest is maintained; and
 - Creation of 2.96ha of locally native broadleaved woodland (refer to Section 2), including locally sourced black poplar *Populus nigra*.
- 135 Some ongoing management would be required to maintain the value of the biodiversity enhancements, following the end of the aftercare period. The Final LEMP would provide details of long-term management, with a brief summary of likely management requirements provided below:

- Periodic vegetation clearance or dredging of ponds, in the event the open water area is significantly reduced. In the event fish are confirmed then specific ponds may need to be drained down to remove the fish, prior to allowing to refill;
- Reptile/amphibian hibernaculae are unlikely to require any maintenance, but refugia may need topping up with additional materials from time to time, depending on how quickly they degrade.
- Bird and bat boxes will be subject to annual checks to remove old nesting material and to ensure they remain firmly affixed to their support.
- Annual or biannual haycuts at the lowland meadow and neutral grassland, with all arisings removed (with some retained as compost heaps at field boundaries for use by reptiles/amphibians). Livestock grazing may also be appropriate at some locations/times, depending on sward condition and composition.
- The broadleaved woodland is unlikely to require any significant maintenance or management beyond the 3 year aftercare period. However, it should be subject to annual walkover to check for the presence of INNS or disease, such that remedial measures can be taken.

136 Ongoing management of the biodiversity enhancements at the OnSS would be undertaken for the lifetime of the project. Management would ultimately be the responsibility of RWE, although it is possible that the management could be delivered by an appropriate local body (e.g. DCC or North Wales Wildlife Trust), subject to agreement closer to the time.

8 Ecological monitoring

8.1 During construction

- 137 The purpose of the ECoW is to provide ecological advice and monitor compliance. The ECoW shall ensure that biodiversity is protected and impacts either avoided or minimised as described in the Final LEMP and EPSLs. The ECoW role will be retained on site throughout the construction period (and any subsequent reinstatement works).
- 138 To enable ecological compliance monitoring, a simple form to establish whether the terms of the LEMP are being met shall be devised and included in the Final LEMP. Separate forms for EPSL compliance shall be included as part of the EPSL documents.

8.2 During Operation

- 139 All habitats created as part of ecological compensation or enhancement, will be subject to monitoring to ensure that aims and objectives are met, as well as any conditions related to EPSL requirements. The full details of the monitoring necessary will be included in the Final LEMP but a summary of monitoring proposals is provided below:

8.2.1 At the OnSS

- 140 Monitoring of the mitigation/compensation/enhancement habitats will be undertaken in years 1-3 (to coincide with the aftercare and implementation period), further monitoring will be subject to approval of the final LEMP and agreed management structure. GCN monitoring required as part of the EPSL is proposed to include population survey at new and retained ponds, and is proposed to follow the same schedule as for habitats. Bat monitoring required as part of the EPSL is proposed to include an internal check of all installed compensation bat boxes for signs of use, again following the timescale above.

8.2.2 All other areas

- 141 Monitoring shall be undertaken in years 1-3 (to coincide with the aftercare and implementation period).
- 142 In all cases the monitoring shall be against defined aims and objectives which shall be included in the Final LEMP.

9 Landscape and Ecology Mitigation Measures in the Application for Development Consent

- 143 As noted in Section 1.1, it is proposed that the Final LEMP will be submitted to Denbighshire County Council for approval, following consultation with Natural Resources Wales (NRW) , as a requirement of the DCO.
- 144 The requirement for the provision of landscaping for the OnSS, in line with the Final LEMP, and the requirement for a Final LEMP to be submitted and approved are set out within DCO Requirements 8, 9 and 13as set out below:

9.1 Requirement 8 - Provision of landscaping

Work No. [31A] [the proposed substation] must not be commenced until a written landscaping scheme and associated work programme in accordance with the outline landscape and ecological management plan for the relevant work has been submitted to and approved by the relevant planning authority.

(2) The written landscaping scheme must include details of all proposed hard and soft landscaping works including—

(a) location, number, species, size and planting density of any proposed planting including any trees; and

(b) implementation timetables for all landscaping works.

9.2 —Requirement 9 - Implementation and maintenance of landscaping

All landscaping works must be carried out in accordance with the landscaping schemes approved under requirement [8] (provision of landscaping).

Any tree or shrub planted as part of an approved landscaping scheme that, within a period of five years after planting, is removed, dies or becomes, in the opinion of the relevant planning authority, seriously damaged or diseased must be replaced in the first available planting season with a specimen of the

same species and size as that originally planted unless a different species is otherwise agreed with the relevant planning authority.

9.3 Requirement 13 - Landscape and Ecological management plan

No stage of the onshore works may commence until for that stage a written landscape and ecological management plan in accordance with the outline landscape and ecological management plan as appropriate for the relevant stage, has, following consultation with Natural Resources Wales, been submitted to and approved by the relevant planning authority.

(2) The landscape and ecological management plan must include an implementation timetable and must be implemented as approved.

10 References

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