ENVIRONMENTAL STUDIES REPORT

Point of Ayr Cable Route Foreshore Works

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EXECUTIVE SUMMARY

Planning permission FUL/000246/23 was granted in May 2024, to build new infrastructure and to modify existing facilities at the Point of Ayr Terminal in Flintshire to operate with carbon dioxide (the Consented Development). The Consented Development forms part of the wider HyNet North West Project that will transport carbon dioxide captured from industries in North Wales and North West England. The captured carbon dioxide will be stored in depleted offshore gas reservoirs.

A new Town and Country Planning Application is seeking re-authorisation for part of the same cable installation works, already consented under application FUL/000246/23, but on a new alignment below Gronant Dunes and Talacre Beach. These works will utilise the same construction methodology, but on a new alignment that is approximately 250 m further eastwards along Talacre Beach (the Proposed Development).

This Environmental Studies Report supports the planning application for the Proposed Development by verifying that baseline conditions within the redline boundary, and the wider study area, are comparable to those established for the Consented Development.

It provides a summary of the walkover surveys and desk studies undertaken to validate Cultural Heritage, Biodiversity, and Arboriculture information at the location of the Proposed Development. Information collected during the walkovers has been compared to that previously collected for the Consented Development, to determine whether the current environmental baseline at the Site remains comparable to that used in the assessments supporting the application for the Consented Development.

This Environmental Studies Report also provides a brief Ecological Impact Assessment of the Proposed Development and associated mitigation measures, based on the baseline validation. Recommended mitigation measures relating to Cultural Heritage and Arboriculture are also provided.

With regard to Cultural Heritage, four known non-designated historic assets are located within the red line boundary, including two Spitfire crash sites in the intertidal area. The Proposed Development avoids the location of these known archaeological assets. With avoidance, implementation of an archaeological watching brief, a Protocol for Archaeological Discoveries, and mitigation measures set out in the Construction Environment Management Plan, it is anticipated that the Proposed Development will have no significant effects on cultural heritage and archaeology receptors.

For Biodiversity, although local variations occur, overall, the habitats recorded within the Site in 2025 closely match the habitat types and extents recorded for the Consented Development, during the 2021/2022 National Vegetation Classification

survey and intertidal phase 1 habitat survey. For this reason, it can be confirmed that the habitat baseline has not changed sufficiently for there to be any impacts on biodiversity beyond those identified for the Consented Development. During construction, any potential for temporary habitat loss and disturbance to designated sites, Section 7 Priority Habitats and Protected Species will be mitigated through best practices and project-specific measures such as implementing a Precautionary Working Method Statement, Biosecurity Risk Assessment, and Invasive Non-native Species Management Plan.

The arboricultural data collected for the Consented Development has been remotely validated, with no additional trees or groups of trees reported within the red line boundary for the Proposed Development. This data (and surveys undertaken to inform the Biodiversity section) confirm the foreshore vegetation is identified as scrub. This also concludes that the proposed trenchless cable installation method is not expected to impact existing trees. If any unforeseen impacts arise post-construction, mitigation measures outlined in the Outline Arboricultural Method Statement will be implemented.

No further information was identified to significantly change the baseline.

Overall, the environmental baseline recorded within the red line boundary during this validation exercise closely matches that recorded during surveys and desk studies undertaken to support the assessments within the application for the Consented Development. Therefore, it is concluded that across the environmental topics considered in this report, the baseline has not changed sufficiently for there to be any impacts beyond those identified for the Consented Development.

1. INTRODUCTION

1.1. BACKGROUND

1.1.1. Liverpool Bay CCS Limited (the Applicant) was granted planning permission (Application Reference: FUL/000246/23), subject to planning conditions, in May 2024, to construct new infrastructure and modify existing facilities at the Point of Ayr (PoA) Terminal in Flintshire to operate with carbon dioxide (Consented Development). The Consented Development is one element of the HyNet North-West Project (The Project), which will transport carbon dioxide captured from industries in North Wales and North-West England. The captured carbon dioxide will be stored in depleted offshore gas reservoirs.

1.1.2. The New Douglas offshore platform (OP) in Liverpool Bay, North Wales, proposed as part of the Project, requires the establishment of a combined electrical and fibre-optic cable connection to the OP. This infrastructure is essential for the reception and distribution of CO_2 to the storage sites as part of the Project.

1.1.3. Consequently, due to overlapping consenting regimes between the marine and terrestrial jurisdictions, the installation of these electrical and fibre optic cables, from the Mean High Water Spring (MHWS) line to the OP, also requires a Marine Licence from Natural Resources Wales' (NRW) Marine Licensing Team. The Marine Licence was granted on 21 May 2025.

1.1.4. In response to feedback received on the Marine Licence application for the marine component of the Project, the installation of the electrical and fibre optic cables has undergone a realignment to mitigate impacts on vessel traffic navigating in and out of the Port of Mostyn. NRW has granted a Marine Licence (Licence number: CML2365), on the revised alignment.

1.1.5. The foreshore area of the revised alignment of the cable falls outside the Red Line Boundary (RLB) of the Consented Development, and a new Town and Country Planning Act (TCPA) application is proposed for the revised cable alignment in the foreshore area. The Proposed Development for the current TCPA application comprises "*Installation of an underground section of Horizontal Directional Drilling (HDD) conduit under Gronant Dunes originating from the HDD Entry Pit (consented under FUL/000246/23), to a buried HDD Exit Pit at the Mean High Water Spring (MHWS) line, and burial of a combined electrical and fibre optic cable across Talacre Beach and Foreshore to*

the Mean Low Water Spring (MLWS) line, located to the north-west of the Point of Ayr (PoA) gas terminal".

1.2. PURPOSE OF THE REPORT

1.2.1. A pre-application consultation request (PRE/00060/25) was submitted by the Applicant to Flintshire County Council (FCC) on 17th March 2025 which was followed by submission of a Screening Opinion Request (SCR/000421/25) on 9th May 2025. During the pre-application consultations with the FCC and NRW, if it was determined that the Proposed Development was not EIA development, then an Environment Studies Report should be prepared to validate the baseline conditions, and this be submitted in support of the Planning Application.

1.2.2. FCC's Screening Opinion (SCR/000421/25) on 30th May 2025 concluded that the Proposed Development will not have significant environmental impacts and therefore does not constitute EIA development. An Environment Statement has therefore not been prepared to support this application.

1.2.3. The purpose of this Environment Studies Report is to provide FCC Planning with the requisite information to facilitate informed planning decisions. This report verifies that baseline conditions within the RLB of the Proposed Development (hereafter referred as The Site), and the wider study area, are comparable to those established for the Consented Development.

2. SCOPE AND METHODOLOGY

2.1. SCOPE

2.1.1. During the Environmental Impact Assessment undertaken for the Consented Development, key sensitive receptors related to Cultural Heritage, Biodiversity and Arboriculture topics were identified within close proximity to the Foreshore work area. The new TCPA application seeks re-authorization for this section of the Consented Development, maintaining the same scope of work and construction methodology previously approved under planning permission FUL/000246/23, but with a new alignment approximately 250 m further east along Talacre Beach.

2.1.2. As part of the pre-application consultation, discussions were held with NRW on 21st March 2025 and FCC on 27th March 2025. It was agreed that validation surveys and a desk-based study would be conducted to compare the baseline conditions for the Cultural Heritage, Biodiversity and Arboriculture topics of the Proposed Development against those established and assessed for the Consented Development.

2.1.3. This Environmental Studies Report summarises the baseline conditions of the sensitive receptors within Cultural Heritage, Biodiversity and Arboriculture topics, which have been validated through the desk-based study, and walk-over survey. The report supports the planning application by comparing and verifying this baseline with respect to the Consented Development. The area of interest considered for this validation study includes the Site, as well as a wider study area of 1 km from the Site for Cultural Heritage receptors and 2 km from the Site for Biodiversity receptors.

2.1.4. This report includes:

- a description on the methodology adopted for baseline validation for three topics: Cultural Heritage, Biodiversity and Arboriculture;
- a description of the baseline condition of the Consented Development;
- results of validation survey and desk-based studies;
- a comparison of the baseline of Proposed Development against that of the Consented Development;
- an assessment of potential ecological impacts of the Proposed Development; and
- recommendations and mitigation measures for all three topics covered in this report.

2.2. METHODOLOGY

2.2.1. This report is informed by data collected during validation desk studies and walkover surveys conducted in April 2025 to inform the Cultural Heritage and Biodiversity topics. The methodology employed for validation desk studies and walkover surveys is further discussed in in Sections 4.2, 5.2 and 6.2 of this report.

3. THE PROPOSED DEVELOPMENT

3.1. SITE DESCRIPTION

3.1.1. The Proposed Development is located to the north-west of the PoA gas terminal in Flintshire. The Site (refer to Figure A.1, Annex A) encompasses approximately 0.42 km^2 and includes the realigned cable route. This is comprised of, a horizontal directional drilling (HDD) conduit under Gronant Dunes, a HDD exit pit at Mean High Water Spring (MHWS), and the simultaneous lay and burial of the cables across the foreshore area extending from MHWS to Mean Low Water Spring (MLWS). Figure A.1, Annex A illustrates the Site in relation to the RLB of the Consented Development.

3.1.2. The area around the Site is a combination of rural, urban and coastal landscapes. The A548 is located approximately 1 km to the south of the Site and is the closest major road. There are a number of small settlements located nearby, including Tanlan, Ffynnongroyw, Picton and Gwespyr to the south, and Tynymorfa to the west. The Point of Ayr Colliery is located 1.5 km south / south-east of the Site.

3.2. DESCRIPTION OF PROPOSED DEVELOPMENT

3.2.1. The current Planning Application seeks re-authorisation for the same works, and same construction methodology already consented under planning permission FUL/000246/23, but on a new alignment that is approximately 250 m further eastwards along Talacre beach. The components of the Proposed Development, and associated construction activities are as follows:

- Construction of part of a cable conduit under the Gronant Dunes using a trenchless HDD method of installation. The buried depth of the cables across the foreshore is anticipated to be a minimum of 1.1 m, however the depth may be greater for the trenchless crossings to ensure sufficient depth to cross obstructions.
- An HDD Exit Pit entailing installation, at approximately 3 m below beach level, of a temporary steel prefabricated containment sump, approximately 3 m x 3 m in width and length, to capture any drilling fluid emitted from the drilling process. This will have approximately 10 m^3 capacity. A cofferdam approximately 20 m x 20 m will be installed to enable construction of the Exit Pit. Reinstatement of the HDD Exit Pit beach area on completion.
- The installation of a combined electrical and fibre optic cable within the HDD conduit.

- The simultaneous lay and burial of the cable across Talacre Beach from the HDD Exit Pit to the MLWS line.

3.2.2. The construction and operation of the cables beyond the MLWS through the marine environment is covered by a separate Marine Licence recently approved by NRW (CML2365).

3.2.3. There are no other above or below ground structures proposed as a part of the Proposed Development.

3.3. CONSTRUCTION OF THE PROPOSED DEVELOPMENT

3.3.1. The new underground foreshore cables will be installed broadly in a north-northwest direction from the HDD Entry Pit to the MLWS. The foreshore cables will be directly buried from the HDD Entry Pit to the MLWS at the Foreshore (and on to the Offshore New Douglas OP). The works from PoA Terminal to and including the HDD Entry Pit are consented under FUL/000246/23 and does not form part of the new TCPA application.

3.3.2. The installation of the cables under the Gronant Dunes will utilise HDD equipment. This technique will be used to avoid causing disturbance to the ground surface, and disturbance to the ecologically sensitive dune system. The HDD process involves drilling a tunnel from an entry pit behind the dunes to an exit pit located just below the MHWS line.

3.3.3. The exit pit for the Gronant dune system HDD on the intertidal side will be placed between 2- 3 m below ground level into the sand with temporary pumps and storage tanks sited close to the pit to contain any drilling fluid. As the pit will be at around the same depth as the proposed cable depth, and given the Applicant's experience with similar installations, it is not expected that any external cable protection will be required.

3.3.4. Access to the beach will be from the Talacre beach car park. Temporary matting will be placed to facilitate vehicle access within the Foreshore Area over the soft sand as necessary.

3.3.5. The method for the installation of the cables across the intertidal area, given the known geological conditions, is to use a plough to simultaneously lay and bury the cable as it moves along the cable route. This is achieved by a cable laying vessel beaching on the intertidal area at the MLWS line. The cables will then be pulled by excavators, and guided on rollers pre-installed on the beach, pegged at approximately 3 m intervals. The cable will then be attached to the HDD pulling equipment, located on the shoreward side of the dunes, and pulled to the HDD Exit Pit, and drawn through the HDD conduit

under Gronant dunes to the HDD Entry Pit (consented under FUL/000246/23).

3.3.6. Once the pull is complete, the cable laying vessel will use either the cable trencher or the plough, or combination of both, to simultaneously lay and bury the cable across the intertidal area. This is instead of the previously proposed method that would have been required to first lay the cables to the landfall, and then two vessel passages to bury the cables. This reduces potential disturbance from the cable laying vessel activities. As agreed with NRW, and the Port of Mostyn, during determination of the Marine Licence for these activities, this new alignment will avoid bird foraging areas, and disruption to the operations at Port of Mostyn.

3.3.7. The intertidal works are envisaged to take up to 8 weeks. This is expected to be separated into two different periods: one for the Gronant dunes HDD works (estimated at around 4 weeks), and another for the cable pulls (estimated at around 4 weeks), during which certain locations will be closed off entirely to the public. Temporary diversions will be arranged across the dunes during this period for pedestrian use. As part of the construction works, a temporary fence will be erected to safeguard both the public and workforce and provide security of the works. This temporary fencing will be removed upon completion of the works. Traffic and access management including an Outline Construction Traffic Management Plan (CTMP) has been consented under FUL/000246/23 and does not form part of the new TCPA application.

Construction Schedule and Working Hours

3.3.8. Subject to planning permission, it is anticipated that HDD conduit construction, and cable installation, will commence by end Q1 to Q3 2026. The timing of the HDD Exit Pit works has been scheduled for February and March 2026, which is outside of the Little Tern breeding season. The cable shore pulls and simultaneous lay and burial by the cable laying vessel, are scheduled for July 2026 at the end of the Little Tern breeding season, close to their migratory departure. LBCCS will continue to work with its cable installation contractor to, as far as is reasonably practicable, sequence these works to occur either later in, or after, the breeding season.

3.3.9. Core working hours are proposed to be from 08.00 to 18.00 on weekdays (excluding bank holidays) and between the hours of 08:00 and 13:00 on Saturdays for the construction of the Proposed Development. However, the duration of HDD conduit installation will require continual 24 hour working (consented under FUL/000246/23)

to allow the work to be completed as safely and quickly as possible. The estimated duration of works for the trenchless works at the dunes is 2 weeks and will also require a maximum of two consecutive nights (48-hour period).

3.3.10. To maximise productivity within core working hours, the Construction Contractor(s) will require a period of up to one hour before and up to one hour after core working hours for the start-up and close-down of activities. This will include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general preparation works. It will not include the operation of any plant or machinery likely to cause disturbance to residents or businesses. These periods will not be considered an extension of core working hours.

Temporary Localised Construction Compounds and Site Access

3.3.11. A temporary localised construction compound for the foreshore cables has been consented under FUL/000246/23 and does not form part of the new TCPA application. It will be in the Talacre Beach car park and used to provide access to the intertidal works area, for parking vehicles, and for welfare trailers. Facilities for the storage of oils, fuels or chemicals will be arranged within the consented temporary localised construction compound and will be stored on impervious bases and surrounded by impervious bund wall and located away from watercourses or water bodies. There will not be any storage of construction materials / chemicals / fuel within the Site or near to the Proposed Development in Gronant Dunes.

3.3.12. Access to the intertidal works will be from the Talacre Beach car park and along the base of the dunes via the route identified and consented by the RLB in FUL/000246/23 and does not form part of the new TCPA application.

Decommissioning

3.3.13. When it reaches the end of its useful life (after 25 years) or is no longer required, the foreshore cables will be left in situ in the ground

4. CULTURAL HERITAGE

4.1. INTRODUCTION

4.1.1. This section provides an update and validation of the cultural heritage baseline for the Proposed Development, based on desk-based and site-based validation studies, comparing these findings to the baseline recorded for the Consented Development.

4.2. METHODOLOGY

CULTURAL HERITAGE - WALKOVER SURVEY (METHODOLOGY)

4.2.1. A walkover survey of the intertidal section of the Site was undertaken on 1 April 2025 to determine the extent of any visible surviving remains of known historic assets within the Site boundary and to assess the potential for previously unrecorded remains. The site visit extended beyond the Site for the purposes of scoping historic assets and their intervisibility with the Proposed Development. The survey was undertaken by trained and accredited heritage specialists.

4.2.2. Updated Historic Environment Record data was not obtained to inform the survey and the updated baseline assessment. A review of the publicly available heritage data accessed on Archwilio (Heneb, 2025), the publicly accessible version of the Welsh heritage data which includes data held by Cadw, Coflein, the Royal Commission of Ancient and Historical Monument of Wales (RCAHMW), and Heneb, was undertaken to inform the baseline understanding of the Site.

4.3. CONSULTATION

4.3.1. Heneb: the Trust for Welsh Archaeology acts as the archaeological advisor for the Local Planning Authority (LPA). RCAHMW acts as the archaeological advisor for the Welsh Government regarding historic assets within the intertidal and marine environment. Both organisations were engaged regarding the revised cable alignment, as part of the Marine License application (Licence number: CML2365). The responses are provided in Annex B of this report.

4.4. BASELINE OF CONSENTED DEVELOPMENT

4.4.1. There were no known historic assets within the foreshore and intertidal area of the Consented Development. The nearby foreshore and intertidal area contained the remains of post-medieval shipwrecks, two Second World War aircraft crash sites, which are designated as Controlled Sites under the *Protection of Military Remains Act* 1986 , and

Second World War defence remains in the form of pillboxes. The wreck record descriptions state that the locations of the wrecks have not been visually confirmed and are considered provisional. These wrecks were recorded as losses and may be found within the vicinity of the recorded location.

4.4.2. The Consented Development baseline determined that there is moderate potential for prehistoric and later medieval remains, low to moderate potential for Roman remains, low potential for early medieval remains, and high potential for post-medieval and modern remains within the foreshore and intertidal area of the Consented Site.

4.5. BASELINE VALIDATION

CULTURAL HERITAGE - WALKOVER SURVEY (BASELINE DESCRIPTION)

4.5.1. A wooden object constructed of three and half planks of degraded wood, approximately 1.5 m in length, was observed in the Site near the Mean Low Water (MLW) line (Figure 4.1). This object appears to have been washed onto the Site during storm activity and is not considered to be indicative of associated further remains.

Figure 4.1 - Wooden object found in southeast of the Site

4.5.2. No archaeological remains were observed during the intertidal survey within the Site.

Talacre Beach, The Warren, Pillbox II (HER ID 167158)

4.5.3. The remains of the Talacre Beach, The Warren, Pillbox II asset (HER ID 167158) was visited to determine the extent of surviving remains, and to confirm their location in relation to the alignment of the Proposed

Development. The pillbox was dispersed in at least seven large pieces and numerous small ones (Figure 4.2). Most of these pieces are located around the remains of the pillbox's foundations. The remains are located adjacent to the route of the access track for the Consented Development (Figure 4.3) and will need to be avoided when the Site is accessed to prevent any impact on the historic asset.

Figure 4.2 - Looking west at the remains of the Talacre Beach, The Warren, Pillbox II (HER ID 167158)

Figure 4.3 - Looking east toward the Talacre Beach, The Warren, Pillbox II (HER ID 167158) and the access track location of the Consented Development.

Grade II listed Point of Ayr lighthouse (Cadw ID 520)

The Grade II listed Point of Ayr lighthouse (Cadw ID 520) was visited to determine if any changes within the immediate setting had occurred that may have impacted the assessment. The Site is located closer to the listed building compared with the Consented Development and temporary construction works will be within an obstructed view from the listed building (

Figure 4.4).

4.5.4. Three stake alignments were observed in the intertidal zone between the Grade II listed Point of Ayr lighthouse and the Site (Figure 4.5, Figure 4.6). The alignments were not observed in previous walkover surveys of the area and are not recorded within the Welsh Historic Environment Record.

Figure 4.4 - View to the west from the Grade II listed Point of Ayr lighthouse toward the Site

Figure 4.5 - Looking north at two stake alignments (one running east–west and one running north–south)

Figure 4.6 - Looking east-southeast toward the third stake alignment and the Grade II listed Point of Ayr lighthouse

4.6. REVISED BASELINE

4.6.1. Two of the four known non-designated historic assets are located within the Gronant dune system of the Site consisting of the RAF

Talacre gunnery range (HER ID 142028) and Talacre Dunes well (HER ID 37882).

4.6.2. The other two known historic assets are located within the foreshore and intertidal area of the Site: the crash sites of the Supermarine Spitfire I X4173 (Coflein ID 544351) and Supermarine Spitfire V P7692 (Coflein ID 544352). The crash of the Supermarine Spitfire I X4173 in 1944 during firing practice resulted in the pilot's death when the plane crashed into anti-glider poles and set off anti-personnel mines. The extent of the crash of the Supermarine Spitfire V P7692 is unclear in the record but no death is recorded. There is potential for debris from the crash sites to be scattered in the vicinity of the recorded locations and there may be minor inaccuracies in the crash location. There is potential for Second World War defence infrastructure remains within the Site. However, there were no visible remains of these historic assets observed within the Site during the 2025 walkover survey.

4.6.3. There is uncertainty of the locations of post-medieval shipwreck records in the vicinity of the Site. The potential exists for remains of post-medieval wrecks to be buried within the alluvial deposits at the Site. However, here were no visible remains observed within the Site during the 2025 walkover survey.

4.7. SUMMARY AND RECOMMENDATIONS

4.7.1. The site walkover survey has confirmed that the determination of archaeological potential from the baseline established in the Historic Environment Desk-based Assessment of Environment Statement prepared by WSP (2023) for the Consented Development remains valid (see Section 4.4), as there is no further information to significantly change the baseline assessment of the archaeological potential.

4.7.2. Archaeological survival across the Site is anticipated to be high, with potential archaeological remains buried within the alluvial tidal flat deposits.

4.7.3. There is potential for the associated debris from the aircraft crash sites to be disturbed during the excavation of the HDD exit pit and installation of the cable. The current extent of the crash sites and the possible dispersal pattern of the remains has not been determined. Additionally, there is the potential for some minor variation in the crash location due to the age of record. The two aircraft crash sites are Controlled Sites under the Protection of Military Remains Act 1986. Where sites are within 100 m, permission to disturb the sites and any of the associated debris remains must be sought from the Ministry of Defence. This permission is granted under licence that is obtained from

the Joint Casualty and Compassionate Centre (JCCC), part of the Defence Business Services (DBS). The JCCC has confirmed that, given the cable alignment is over 100 m from the location of the crash sites, there would be no requirement to apply to them for a licence.

4.7.4. The installation of the foreshore cables under the Gronant dune system will utilise a trenchless technique of HDD. The HDD tunnel is expected to extend into predominantly the Beach Sands and Alluvial Deposits, and possible the top of the Glacial Till. There will be limited potential for archaeological remains at the depth of the HDD and therefore no further mitigation is recommended.

4.7.5. Excavation for the HDD exit pit and burial of the electrical cable would truncate or remove any currently unknown archaeological remains within their footprint. An archaeological watching brief will be conducted during the excavation of the HDD exit pit within the intertidal zone. The work would be carried out under a Written Scheme of Investigation that would require approval from the LPA and their archaeological advisor.

4.7.6. A Protocol for Archaeological Discoveries (PAD) will be in place for the excavation of the cable trench through the intertidal zone. This will ensure that any archaeological remains impacted during the trench excavation are appropriately recorded and mitigated.

4.7.7. Construction works may cause a temporary minor adverse impact on the setting of Point of Ayr Lighthouse through the introduction of noise and vibration as a result of construction related traffic and visual intrusion from plant and machinery; however, through the use of best practice and mitigation measures included in the Construction Environment Management Plan (CEMP), these impacts are anticipated to be not significant.

4.7.8. The Proposed Development avoids the location of the known archaeological assets. With avoidance, implementation of an archaeological watching brief and PAD with other project specific mitigation measures set out in the CEMP, it is anticipated that the Proposed Development will have no significant effects on cultural heritage and archaeology receptors during the construction phase.

5. BIODIVERSITY

5.1. INTRODUCTION

5.1.1. This section provides an update and validation of the biodiversity baseline for the Proposed Development, presenting the findings of desk-based and site-based validation studies against the baseline conditions assessed for the Consented Development. The section also describes potential ecological impacts associated with the Proposed Development as well as measures to mitigate these.

5.2. METHODOLOGY

5.2.1. A desk-based study was undertaken by WSP in 2021 for the PoA Terminal and Foreshore Works, which was subsequently updated in 2022. This was followed by a Phase 1 intertidal walkover survey undertaken on the 2nd and 3rd of April 2022, an Extended Phase 1 Habitat Survey and species-specific surveys for Great Crested Newt, Bats, Otter and Water Voles, Winter birds, Natterjack Toad, Sand Lizard and Terrestrial Invertebrates. These studies and surveys informed the EIA and the baseline reported within the Environment Statement (WSP, 2023) for the Consented Development. The results and findings of these studies and surveys have been validated and cross-checked by undertaking an Updated Desk Study and Walkover Surveys as described in the following sections.

UPDATED DESK STUDY

5.2.2. The updated desk-study was undertaken in April 2025 to review existing ecological baseline information for the Site and surrounding study area. The desk study also included additional information collected on a voluntary basis provided by the Applicant (

Table 5-1). In the absence of protected species surveys, the desk-study for protected species has been incorporated into the results.

Table 5-1 - Desk Study Data Sources for Terrestrial Ecology

Source	Record Type	Search Area
Multi-Agency Geographic Information for the Countryside (MAGIC)	Statutory sites designated at the international level: Special Protection Area (SPA), Special Area of Conservation (SAC), potential SPA (pSPA) and candidate SAC (c.SAC); and Ramsar and potential Ramsar sites.	10 km
MAGIC	Statutory sites designated under national legislation i.e. Local Nature Reserves (LNR), National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI)	2 km
Cofnod - the Local Environmental Records Centre for North Wales (requested in April 2025)	Non-statutory sites designated referred to as Wildlife Sites (WS) in Flintshire.	2 km
Cofnod - the Local Environmental Records Centre for North Wales (requested in April 2025)	Other nature sites such as North Wales Wildlife Trust Reserve (NWWT) and RSPB Reserves.	2 km
Data Map Wales (Natural Resourced Wales, 2022)	Section 7 priority habitats, ancient woodland	2 km
Cofnod-the Local Environmental Records Centre for North Wales (requested in April 2025)	Protected and priority species (including INNS) from the last 10 years	2 km
2023-24 autumn/winter ornithological report (ExCal, 2024)	Survey results from voluntary ornithological surveys	N/A
2024 sand lizard *Lacerta agilis* **report (ENI, 2024)**	Survey results from voluntary sand lizard surveys	N/A
2024 Talacre natterjack toad *Epidalea calamita* **report (Norman, 2024)**	Survey results from voluntary natterjack toad surveys	N/A
2024 Talacre sand dunes-dune slack fixed quadrats botanical survey (Duffell, 2024)	Survey results from voluntary ornithological surveys	N/A

5.2.3. Along with the data sources in Table 5.1, the following additional data sources were used to inform the desk study of Aquatic and Intertidal Ecology:

- Contemporary OS maps;
- Geology and soil maps;
- Current aerial photography;
- NRW Marine Fish Surveys Database;
- NRW Freshwater Fish Surveys Database;
- Environment Agency Fish National Fish Population Database (NFPD): TraC Fish Counts for all Species for all Estuaries and all years;
- National Biodiversity Network (NBN) Wales; and
- Nature on the Map for designated areas, habitats and species, landscape and marine data.

TERRESTRIAL ECOLOGY – WALKOVER SURVEY

5.2.4. A walkover survey of the Survey Area was undertaken on the 8th and 9th April 2025 by two experienced habitat surveyors. This survey updated and validated the results of the 2021/2022 terrestrial ecology surveys for the Consented Development, alongside mapping additional habitats associated with the Site. The lead surveyor is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), with 20 years' experience within ecological consultancy and holds a Level 5 Botanical Society of Britain and Ireland (BSBI) Field Identification Skills Certificate (FISC). The surveyor has also previously held the post of county bryophyte recorder for Cheshire (vice-county 58) and is a member of the BSBI, the British Bryological Society (BBS) and the British Lichen Society (BLS).

5.2.5. Figure A.2 of Annex A shows the planning application area for the Consented Development, with the solid red line showing the planning RLB for the Proposed Development. For the purposes of the walkover surveys, the RLB area was divided into two sections: the terrestrial ecology survey area (green dotted line) and the aquatic and intertidal ecology survey area (yellow dotted line).

5.2.6. The terrestrial survey was conducted on the shoreward side of the MHWS line. The Survey Area included land within the Site, up to the northern edge of the dune system and included a 50 m buffer. This included sand dune and scrub habitat 200 m further east of the Consented Development, which was not included within the original Phase 1 habitat survey in 2021, although was included within the National Vegetation Classification (NVC) survey in 2021/2022. At the

time, it was decided to extend the NVC survey further west to incorporate dune slacks within the sand dunes. This was because dune slacks are formed where the water table within the dunes extends up towards the surface and they are highly dependent upon the hydrology of the site. It was thought that HDD could possibly affect the hydrology of the dunes, so the extra habitat containing the slacks was included.

5.2.7. The habitats were recorded using a combination of Phase 1 Habitat (JNCC., 2010) and UKHabitat (UKHab) (UKHab Ltd., 2023) methodology. Both methods were utilised to allow the original Phase 1 Habitat mapping from the Consented Development to be extended and compared with the habitats within the Site. Phase 1 mapping will also feed into any future Net Benefit for Biodiversity (NBB) assessments as this method of collection is preferred in Flintshire. UKHab was also employed to allow for the collection of condition assessment data.

5.2.8. In addition to the habitat mapping, the potential for presence of, or habitats to support, legally protected and Priority Species was assessed using knowledge from the 2021 and 2022 surveys, desk study results, and incidental field observations during the 2025 walkover survey. The assessment of habitat suitability for protected and Priority Species was based on professional experience and judgment. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups (CIEEM, 2012).

5.2.9. During the walkover, any incidental observations of Invasive Non-Native Species (INNS) were also recorded and their locations noted, although a full survey for invasive species was outside the scope of this walkover survey. INNS are defined as species which are included within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019.

5.2.10. In this report names of vascular plants follow Stace (2019) with bryophytes following Blockeel *et al*. (2021) and lichens following Smith *et al.* (2009).

AQUATIC AND INTERTIDAL ECOLOGY – WALKOVER SURVEY

5.2.11. A walkover survey was conducted on the seaward side of the MHWS line to validate the results of the 2022 and 2023 surveys, and map additional areas within the Site. This survey was conducted on the 2nd April 2025 by a suitably qualified and experienced marine ecologist with 8+ years of experience in undertaking marine ecology surveys. The validation survey was undertaken following methods described in the

JNCC Marine Monitoring Handbook for in situ biotope recording. The survey was undertaken during a 0.9 m spring tide and included the collection of target notes and georeferenced photographs of ecological features and habitat types. In addition to the collection of target notes, onsite investigation of sediment for macrofauna was undertaken including sieving of substrate and recording of species.

5.2.12. The results of the survey undertaken on the 2nd April 2025, were compared to the results of the Intertidal phase 1 habitat survey conducted on the 2nd and 3rd April 2022..

LIMITATIONS

5.2.13. Ecological survey data is typically valid for 18 months unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes, mobile species or anticipated changes in management (CIEEM, 2019). The targeted species surveys completed in 2021 and 2022 in support of the Consented Development are now considered to be out-of-date and therefore the conclusions of this report are based on the 2025 walkover survey supplemented by updated desk study records and voluntary survey reports provided by ENI.

5.2.14. Species records held by local biological record centres are often incidental records or collected on a voluntary basis. Absence of a record of a particular species does not necessarily confirm absence of that species.

5.2.15. The terrestrial ecology walkover survey was completed at the start of the optimal survey season for habitat survey, generally accepted to be from April-September (inclusive). Botanical surveys are seasonally limited, and throughout the spring and summer period certain species will be more or less evident at different times (i.e. depending on the flowering season). However, it is considered that sufficient information was gathered to enable an assessment of the habitat types present, in line with standard habitat categories, and the potential for these habitats to support protected or Priority Species.

5.2.16. During the aquatic and intertidal ecology walkover, no voucher specimens were retained to be identified by a laboratory during the aquatic validation survey. However, detailed photographs detailing diagnostic features were recorded during the survey to accurately identify species. In addition, all species identified within the field were common and widespread in the environments surveyed.

5.3. BASELINE OF CONSENTED DEVELOPMENT

TERRESTRIAL ECOLOGY

5.3.1. The surveys undertaken in 2021 and 2022 identified the following habitat types within the Consented Development boundary on the shoreward side of the MHWS line:

- Dense scrub;
- Improved grassland;
- Saltmarsh/dune interface;
- Open dune;
- Species-poor intact hedge; and
- Bare ground.

5.3.2. The saltmarsh/dune interface, open dune, and hedgerow habitats all qualify as Section 7 Priority Habitats. In addition, the Atlantic salt meadows component of the saltmarsh/dune interface is an Annex I habitat forming part of the Dee Estuary Special Area of Conservation (SAC).

5.3.3. A National Vegetation Classification (NVC) survey was also undertaken in 2021 and 2022 of the dune system which classified nine NVC habitat communities. This included habitats which accord with Annex I habitats[6]. A targeted petalwort *Petalophyllum ralfsii* survey was also undertaken but the species was not observed during the survey and assessed as absent. Petalwort is an Annex II species that is also a qualifying feature of the Dee Estuary SAC.

5.3.4. The INNS, montbretia *Crocosmia crocismiiflora* which is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), was recorded during the walkover survey along with several other non-native neophtyte species, which are invasive but are not listed on schedule 9.

5.3.5. The habitats were assessed suitable to support the following protected species:

- Badgers *Meles meles*;
- Bats;
- Birds including barn owls *Tyto alba*;
- Amphibians including natterjack toads *Epidalea calamita* and great crested newts *Triturus cristatus*;
- Reptiles including sand lizards *Lacerta agilis*;
- Otters *Lutra lutra*;

- Water voles *Arvicola amphibius*;
- Invertebrates including the sandhill rustic moth *Luperina nickerlii*; and
- Other mammals such as hedgehogs *Erinaceus europaeus*, polecats *Mustela putorius*, brown hare *Lepus europaeus* and harvest mouse *Micromys minutus*.

5.3.6. A suite of targeted species surveys was undertaken during 2021 and 2022 in relation to the above ecology receptors to support the Consented Development.

AQUATIC AND INTERTIDAL ECOLOGY

5.3.7. The surveys undertaken in April 2022 identified four habitats/biotopes within the Consented Development:

- Talitrids on the upper shore and strand-line;
- polychaete/bivalve-dominated muddy sand shores;
- barren or amphipod-dominated mobile sand shores; and
- Macoma balthica and Arenicola marina in littoral muddy sand.

5.3.8. In addition to the habitats identified by the surveys, a number of marine species were identified, including:

- Green shore crab *Carcinus maenas*;
- Blow lugworm *Arenicola marina*;
- Baltic Tellin *Macoma balthica*;
- Thin tellin *Macomangulus tenius*;
- Bristle worm *Lagis koreni*;
- Sand mason worms *Lanice conchilega*;
- Tube worm *Owenia fusiformis*;
- Common cockle *Cerastoderma edule*;
- Brown shrimp *Crangon crangon;*
- Juvenile flounder *Platuchthys flesus*;
- Common periwinkle *Littorina littorea*;
- Scrobicularia plana;
- A single juvenile blue mussel *Mytillus edulis* and;
- A single necklace shell *Polinices catenus* (now Euspiracatena).

5.3.9. The species recorded during the April 2022 surveys are all common and representative of the habitats recorded during the surveys. No Invasive non-native species were recorded during the surveys.

5.4. BASELINE VALIDATION

UPDATED DESK STUDY

Habitat

Statutory designated sites

5.4.1. The Proposed Development is located within the Dee Estuary SPA, SAC and Ramsar site, and directly adjacent to Liverpool Bay SPA. Table C.1, Annex C and Figure A.3 , Annex A show details and locations of internationally designated sites within 10 km of the Proposed Development.

The Proposed Development is located within the Gronant Dunes and Talacre Warren SSSI and directly adjacent to the Dee Estuary SSSI. Table C.2, in Annex C, and Figure A.4, in Annex A, show details and locations of nationally or locally statutory designated sites within 2 km of the Proposed Development.

Non-statutory and other designated sites

5.4.2. The following non-statutory designated sites are located within 2 km of the Proposed Development:

- Talacre Abbey and Woods Wildlife Site for Flintshire, approximately 500 m south-west;
- Tanlan Banks and Ffynnongroyw Woods Wildlife Site for Flintshire, approximately 1 km south-east.

5.4.3. In addition, other nature reserves include:

- Big Pool Wood North Wales Wildlife Trust Reserve (NWWT); approximately 1 km west.
- Dee Estuary RSPB Reserve, 1.2 km east.

5.4.4. Table C2, in Annex C, and Figure A.5, Annex A show details and locations of non-statutory designated sites and other designated sites within 2 km of the Proposed Development.

Section 7 Priority Habitats

5.4.5. The following Section 7 Priority Habitats are located within 2 km of the Proposed Development (see Figure A.6, Annex A):

- Intertidal mudflats, within the Site;
- Sand dunes, within the Site;
- Coastal and floodplain grazing marsh, the nearest area is located 250 m to the south of the Site;

- Lowland fens and reedbeds, the nearest area is located 200 m to the east of the Site; and,
- Coastal saltmarsh, the nearest area is located 900 m to the east of the Site.

5.4.6. There are also areas of ancient woodland within 2 km of the Proposed Development. The closest area is located 1.1 km to the south west.

Protected and Notable Species

Birds

5.4.7. The data supplied by Cofnod included a total of 1,599 individual records of Birds of Conservation Concern Wales (BoCCW) red or amber bird species within the last 10 years (2015-2025) and a total of 1,184 individual records of birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). These records comprised of 45 species, which are summarised in Table 5-2.

Table 5-2 Schedule 1 bird species within the study area, within last 10 years (2015-2025)

English name	Latin name	Earliest year	Latest year	Total records
Avocet	*Recurvirostra avosetta*	2021	2024	5
Barn Owl	*Tyto alba*	2017	2024	15
Bearded Tit	*Panurus biarmicus*	2022	2024	6
Bittern	*Botaurus stellaris*	2020	2021	2
Black Tern	*Chlidonias niger*	2015	2016	3
Black-tailed Godwit	*Limosa limosa*	2015	2024	185
Black-winged Stilt	*Himantopus himantopus*	2023	2023	4
Brambling	*Fringilla montifringilla*	2017	2023	9
Cetti's Warbler	*Cettia cetti*	2016	2024	552
Common Scoter	*Melanitta nigra*	2015	2024	6
Corncrake	*Crex crex*	2016	2016	1
Crossbill	*Loxia curvirostra*	2023	2023	1
Fieldfare	*Turdus pilaris*	2016	2023	7

English name	Latin name	Earliest year	Latest year	Total records
Firecrest	*Regulus ignicapilla*	2019	2019	1
Garganey	*Spatula querquedula*	2021	2023	2
Green Sandpiper	*Tringa ochropus*	2016	2018	3
Greenshank	*Tringa nebularia*	2016	2024	13
Hen Harrier	*Circus cyaneus*	2016	2024	11
Hobby	*Falco subbuteo*	2021	2024	11
Hoopoe	*Upupa epops*	2022	2022	1
Indeterminate Diver	*Gavia* sp.	2017	2017	2
Kingfisher	*Alcedo atthis*	2015	2024	49
Lapland Bunting	*Calcarius lapponicus*	2019	2024	5
Leach's Petrel	*Hydrobates leucorhous*	2024	2024	2
Little Gull	*Hydrocoloeus minutus*	2020	2024	2
Little Ringed Plover	*Charadrius dubius*	2015	2023	14
Little Tern	*Sternula albifrons*	2015	2024	20
Long-tailed Duck	*Clangula hyemalis*	2024	2024	1
Marsh Harrier	*Circus aeruginosus*	2015	2024	84
Mediterranean Gull	*Ichthyaetus melanocephalus*	2017	2021	2
Merlin	*Falco columbarius*	2015	2024	20
Osprey	*Pandion haliaetus*	2016	2024	7
Peregrine	*Falco peregrinus*	2015	2024	14
Quail	*Coturnix coturnix*	2017	2017	1
Red Kite	*Milvus milvus*	2017	2024	5

English name	Latin name	Earliest year	Latest year	Total records
Redwing	*Turdus iliacus*	2016	2024	23
Roseate Tern	*Sterna dougallii*	2023	2023	5
Ruff	*Calidris pugnax*	2016	2024	8
Scaup	*Aythya marila*	2017	2024	5
Snow Bunting	*Plectrophenax nivalis*	2021	2024	23
Spoonbill	*Platalea leucorodia*	2021	2021	1
Stone-curlew	*Burhinus oedicnemus*	2016	2016	2
Whimbrel	*Numenius phaeopus*	2016	2024	37
Whooper Swan	*Cygnus cygnus*	2018	2024	12

ENI's Bird Data

5.4.8. Ornithological monitoring of landholdings around the PoA Gas Terminal, were first commissioned by EniUK Ltd in 1992 and have been repeated every year since, with the aim of monitoring the effects of the gas terminal construction and operation and the associated land management practices upon bird populations.

5.4.9. The most recent monitoring report (ExCal, 2024) combines monitoring data collected from September 2023 to the end of March 2024, and provides more recent survey data than the ornithological surveys undertaken by WSP from 2021 to 2022, which were used to inform the Consented Development.

5.4.10. The ENI surveys cover three main survey areas:

- The ENI gas terminal and Llawndy Farm, near the village of Talacre, with the terminal being built on approximately two thirds of the original Llawndy Farm extent;
- across coastal fields to the south-east and south-west of ENI landholdings, comprising coastal and floodplain grazing marsh Section 7 Priority Habitat (shown in Figure A.6, Annex A); and
- at Warren Farm, located to the west of the gas terminal/Llawndy Farm and north of the coastal fields. This is the survey area that is closest to the Proposed Development, with the northern fields at

Warren Farm adjoining the southern edge of the Proposed Development.

5.4.11. The 2023-2024 data from Warren Farm is therefore the most relevant to an assessment of the current ornithological baseline within and adjacent to the Proposed Development.

5.4.12. Warren Farm remains a working farm with a tenant farmer. Generally, the farm holds grazing cattle during the summer months and sheep during the winter, when the cattle are kept inside various sheds. The fields are designed to be seasonally flooded from September to March via an irrigation system installed when the gas pipeline was laid. The irrigation system was constructed as part of the mitigation works for the PoA gas terminal. As a result, new habitats have been created which, when flooded, are ideal for feeding and roosting waders and wildfowl. The two large, lined ponds (located approximately 360 m south of the new Proposed Development) are provided for waders and wildfowl throughout the winter period.

5.4.13. Wildfowl species usually present include teal, wigeon, mallard, tufted duck, shoveler and pintail. Wader species include curlew, oystercatcher, redshank, lapwing and black-tailed godwit. The hedgerows surrounding the farm support foraging migratory thrush and passerine species such as redwing and fieldfare.

5.4.14. The seven key species at Warren Farm are teal, mallard, oystercatcher, golden plover, curlew, lapwing and redshank. A further two species of increasing significance, black-tailed godwit and wigeon have also been included as key species in more recent years.

5.4.15. During 2023/24 teal and mallard (two of the three key duck species) were present for six months of the season and wigeon from October onwards. All three species saw increases on the previous season. Mallard saw the highest peak count since 2016/17 and wigeon the highest since 2020/21. Both wigeon and teal peaked in December and mallard in October. Exceptionally wet conditions and well-flooded fields suit these dabbling ducks. A further seven duck species were recorded during the season with a single drake smew Mergellus albellus present during January and February. Shoveler occurred throughout the season with a peak count of 23 in December and tufted duck were present during all months except October and peaked with nine birds in January. Gadwall were present in September and February to March. Pintail were present in the last three months of the season with a peak count of two birds. A high count of 20 shelduck occurred in March with this species also present in December and February in lower numbers. A single goosander Mergus merganser was recorded in November.

5.4.16. Results from the 2023/24 bird monitoring show that the land immediately to the south of the Survey Area (Warren Farm) continues to provide valuable wintering habitat for wildfowl and waders.

Gronant Little Terns

5.4.17. For the past 21 years Denbighshire Countryside Services has undertaken measures to protect the little tern colony. This species is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and a qualifying species for both the Dee Estuary and Liverpool Bay SPAs, at Gronant Beach, where the largest breeding colony of the species in Wales is located. The site is internationally important as it contributes to over 10% of the entire UK breeding population of little tern as well as supplementing other colonies.

5.4.18. Information from the Gronant Little Tern Report 2020 (North Wales Little Tern Group, 2020) was included within the Consented Development, but some information regarding more recent tern data is provided below. An updated (post 2020) Gronant Little Tern Report was not available at the time of writing.

5.4.19. The 2022 season saw 211 breeding pairs recorded, the highest count seen at Gronant, marking an increase of 23.4% from the previous count in 2018. In addition, a total of 209 fledglings were confirmed, the second highest recorded at Gronant. The baseline for sustaining a little tern colony is widely accepted to be 0.74 fledgelings per pair (FPP), and this season's colony saw a figure of 0.99 FPP, providing an encouraging sign about the future of these endangered birds.

5.4.20. 2022 also saw also the most successful year for colour ringing chicks, with 93 chicks colour ringed, and a total of 236 chicks ringed with British Trust for Ornithology (BTO) rings (only one chick less than the previous highest year, 2021. (Denbighshire County Council, 2022).

5.4.21. Work started in April 2025 to prepare Gronant beach for the annual arrival of the little terns. Volunteers and Denbighshire council staff are building a 3.5 km perimeter compound around the tern colony.

5.4.22. For extra security, 3 km of electric fencing will be used to create 11 pens on a shingle ridge amongst the sand dunes near Gronant. The work is part of a two-decade bid to safeguard the area's little terns, which are due to fly in from west Africa at the end of April into May. As the birds rear their young in shallow scrapes in the shingle, they are extremely vulnerable to any kind of disturbance. At the end of the season the fencing will be removed to ensure a no-trace policy within the SSSI. A visitors' centre will be built on the dunes, alongside a hide, so that the public can view the colony from a safe distance.

5.4.23. In 2024, 166 breeding pairs were recorded, raising 158 fledglings, slightly up on the 155 recorded in the 2023 season. Additional notable information was that in 2024 the site experienced the first-ever breeding success with avocets when two chicks fledged (WalesOnline, 2025).

5.4.24. The proposed fencing and tern colony is located approximately 2 km west of the Proposed Development and should therefore be considered as part of any assessment for the planning application for the Proposed Development.

Mammals

5.4.25. The data supplied by Cofnod included a total of 38 mammal records from the last 10 years which are summarised in Table 5-3.

Table 5-3 Mammal records within the study area, within last 10 years (2015-2025)

English name	Latin name	Earliest year	Latest year	Total records
Bats				
Brown Long-eared	*Plecotus auritus*	2019	2019	1
Common Pipistrelle	*Pipistrellus pipistrellus*	2019	2019	1
Lesser Horseshoe	*Rhinolophus hipposideros*	2019	2019	1
Noctule	*Nyctalus noctula*	2019	2019	1
Soprano Pipistrelle	*Pipistrellus pygmaeus*	2019	2019	1
Whiskered	*Myotis mystacinus*	2019	2019	1
Unidentified Bat		2024	2024	1
Other mammals				
American Mink	*Neovison vison*	2021	2021	1
Badger	*Meles meles*	2016	2023	6
Grey Squirrel	*Sciurus carolinensis*	2018	2023	2
Hare	*Lepus europaeus*	2025	2025	1

English name	Latin name	Earliest year	Latest year	Total records
Harvest Mouse	*Micromys minutus*	2020	2020	1
Hedgehog	*Erinaceus europaeus*	2020	2024	6
Otter	*Lutra lutra*	2018	2023	8
Polecat	*Mustela putorius*	2018	2023	2
Stoat	*Mustela erminea*	2016	2018	3
Water Vole	*Arvicola amphibius*	2024	2024	1

Bats

5.4.26. During the 2021/22 surveys, there was no suitable habitat for roosting bats present within 30 m of the Proposed Development boundary. There were suitable buildings and a roost within a building at Warren Farm, 700 m southeast of the Proposed Development.

5.4.27. A single tree was classed as suitable to support a single bat roost (PRF-I) during the 2025 survey. This tree was located on the southwest boundary of the Survey Area within the dense scrub and is marked on Figure A.7, Annex A

5.4.28. One post 2022 bat record was returned from Cofnod; an unidentified bat species at SJ 0922 8422, 1,924m south-west of the Proposed Development on 23/04/24.

5.4.29. The majority of the terrestrial Survey Area at the Proposed Development consisted of sand dune habitats which is not suitable for roosting bats and of low suitability for foraging bats. There was a large section of dense scrub to the south of the Survey Area which provides suitable foraging habitat for bats with the potential for roosting habitat.

Badger

5.4.30. During the 2021/22 surveys a well-used subsidiary badger sett was identified on the edge of the Foreshore Works Survey Area. This sett is located 100 m west of the Proposed Development boundary.

5.4.31. No further badger setts were identified during the 2025 survey.

5.4.32. One post-2022 record of a badger was returned from Cofnod at SJ 10879 83641, 1,131 m south-west of the Proposed Development on 07/10/23.

5.4.33. The scrub habitat present within the Proposed Development provides suitable foraging and sett building habitat for badger. Badgers are also known to build setts in sand dunes. Whilst no setts have been recorded within the Survey Area, the presence of badgers cannot be discounted.

Otter and Water Vole

5.4.34. During the 2025 surveys there were no watercourses recorded within the Proposed Development Survey Area. The closest suitable watercourses are 275 m south of the Proposed Development.

5.4.35. Two post 2022 records of otter were returned within 2 km of the Proposed Development, with the latest record being from 01/03/23, located at SJ 1195 8410, approximately 800 m south-east in woodland/watercourse near the gas terminal.

5.4.36. One record of water vole was returned from 23 January 2024 at the old PoA colliery site, at SJ 123 836, 1,403 m south-east of the Proposed Development.

5.4.37. Whilst there were no watercourses present within the Proposed Development Survey Area the scrub and dune habitat provide suitable foraging and commuting habitat for otters. The presence of otters cannot be discounted due to the suitable watercourses within the proximity of the Survey Area.

5.4.38. There was no suitable habitat for water voles within the Proposed Development Survey Area.

Reptiles and Amphibians

5.4.39. Cofnod data included a total of 1,102 reptile and amphibian records which are summarised in Table 5-4.

Table 5-4 Reptile and amphibian records within the study area, within last 10 years (2015-2025)

English name	Latin name	Earliest year	Latest year	Total records
Common Frog	*Rana temporaria*	2015	2024	58
Common Lizard	*Zootoca vivipara*	2015	2024	457
Common Toad	*Bufo bufo*	2015	2024	108
Great Crested Newt	*Triturus cristatus*	2018	2019	2
Natterjack Toad	*Epidalea calamita*	2015	2024	165
Palmate Newt	*Lissotriton helveticus*	2019	2024	49
Sand Lizard	*Lacerta agilis*	2015	2024	184
Smooth Newt	*Lissotriton vulgaris*	2015	2024	79

5.4.40. The Talacre Natterjack Toad Report 2024 (Norman, K,. 2024) gives details of recent natterjack toad monitoring within the Survey Area. It describes the results of spawn string counts within ponds and night-time adult toad counts.

5.4.41. The 2024 spawn string count for Talacre was 121, up from 58 in 2023. The spawn string count for 2022 was 53, and for 2021 was 75.5 with no counts undertaken in 2020 due to Covid-19 restrictions. The 5-year average has dropped to 66 but the 10-year average is 99.

5.4.42. The 2024 nocturnal count of adult toads was 83 (4th April), compared to 38 on 20th April 2022, 21 on 6th May 2021, 23 on 17th April 2018, 42 on 15th May 2017, 0 on 26th April 2016 and 27 on 14th April 2015. No counts were undertaken in 2019, 2020 and 2023.

5.4.43. The Sand Lizard Monitoring and Management North-East Wales 2024 Report (ENI, 2024) details the results of monitoring for both sand lizards and common lizards in the sand dunes within Gronant Dunes and Talacre Warren SSSI. The monitoring area is divided into three separate sections; Gronant Dunes, Presthaven Sands and Talacre Dunes. The Proposed Development lies within the middle of the Talacre Dunes survey section.

5.4.44. Sections were visited weekly through April to May and September to October. No surveys were scheduled between June and August. The rota was structured in this way so that the sites were monitored weekly during the period from mating to egg-laying when the lizards are easiest to find and, in the autumn, when juveniles are present, but not over the summer when prevailing weather conditions and the lizards' behaviour make them much harder to see.

5.4.45. Results in 2024 for the Talacre Dunes survey section consisted of nine sand lizard sightings and 36 common lizard sightings. This compares with one sand lizard and 26 common lizards in 2023, four sand lizards and 17 common lizards in 2022, two sand lizards and 28 common lizards in 2021 and no sand lizards and nine common lizards in 2020. At the Presthaven Sands survey section 19 sand lizards and 69 common lizards were recorded, whilst no sand lizards were recorded within the Gronant Dunes section in 2024 or 2023.

5.4.46. The desk study data and the species specific ENI reports show that the Proposed Development Survey Area still provides suitable habitat for natterjack toads, sand lizards and common lizards and that they remain present at the Site.

Invertebrates

5.4.47. Cofnod data included a total of 258 notable invertebrate records which are summarised in Table 5-5. Notable invertebrates are listed below by virtue of status conferred by inclusion on the following lists:

- WSF-IN: Welsh SSSI invertebrate features;
- RDB-NA: Red data book-Notable A;
- RDB-NB: Red data book-Notable B;
- RDB-NS: Red data book-Nationally scarce;
- RDB-NR: Red data book-Nationally rare;
- Environment (Wales) Act 2016 Section 7 species;
- UK Biodiversity Action Plan (UKBAP) species;
- RL-NT: International Union for Conservation of Nature (IUCN)Red list-Near threatened;
- RL-VU: IUCN red list-Vulnerable; and
- RL-DD: IUCN red list-Data deficient.

Table 5-5 – Notable invertebrate species records within the study area, within last 10 years (2015-2025)

English name	Latin name	Status List/s	Earliest year	Latest year	Total records
Bees, wasps and sawflies					
Early Colletes (Bee)	*Colletes cunicularius*	WSF-IN	2021	2021	2
Early Colletes (Bee)	*Colletes cunicularius* subsp. *celticus*	WSF-IN	2023	2023	1
Sea Aster Bee	*Colletes halophilus*	UKBAP, RDB-NA	2018	2018	1
Silvery Leafcutter Bee	*Megachile leachella*	RDB-NB	2015	2022	3
Butterflies and moths					
Small Heath (Butterfly)	*Coenonympha pamphilus*	UKBAP, RL-NT, S7	2018	2024	18
Dingy Skipper (Butterfly)	*Erynnis tages*	UKBAP, RL-VU, S7, WSF-IN	2021	2023	4
Grayling (Butterfly)	*Hipparchia semele*	UKBAP, RL-VU, S7	2015	2024	28
Wall (Butterfly)	*Lasiommata megera*	UKBAP, RL-NT, S7	2015	2024	113
Sandhill Rustic (Moth)	*Luperina nickerlii*	WSF-IN	2018	2019	2
Sandhill Rustic (Moth)	*Luperina nickerlii gueneei*	RL-VU, WSF-IN	2015	2015	28
Powdered Quaker (Moth)	*Orthosia gracilis*	UKBAP, S7	2016	2016	2
Cinnabar (Moth)	*Tyria jacobaeae*	UKBAP, S7	2018	2023	22
Other invertebrates					
Coastal Silver-stiletto (True Fly)	*Acrosathe annulata*	RDB-NS	2018	2022	4
N/A	*Argenna patula*	RDB-NS	2019	2019	1
Water Scavenger Beetle	*Cercyon littoralis*	RDB-NS	2024	2024	1
N/A	*Enoplognatha mordax*	RDB-NS	2021	2021	3
Pirate Spider	*Ero aphana*	RDB-NS	2019	2019	1

English name	Latin name	Status List/s	Earliest year	Latest year	Total records
Peus's Long-back Spider	*Mecopisthes peusi*	BAP, RDB-NS, S7	2019	2019	1
Dune Robberfly	*Philonicus albiceps*	RDB-NS	2018	2019	2
N/A	*Satilatlas britteni*	RDB-NS	2019	2019	1
N/A	*Silometopus ambiguus*	RDB-NS	2019	2019	2
N/A	*Styloctetor romanus*	RDB-NR	2019	2021	2
Common Darter (Dragonfly)	*Sympetrum striolatum*	RL-DD	2018	2023	12
Caddis Fly	*Trichostegia minor*	RDB-NS	2023	2023	2
Dune Villa (True Fly)	*Villa modesta*	RDB-NS	2018	2018	1
N/A	*Xerolycosa miniata*	RDB-NS	2019	2019	1

5.4.48. The 2021/22 surveys found several invertebrate species of conservation concern present within the dune habitat of the Survey Area. The sandhill moth and eastern sand wasp are both notified features of the Gronant Dunes and Talacre Warren SSSI.

5.4.49. As the habitats present within the Proposed Development Survey Area have not significantly changed since the 2021/22 surveys, they are still suitable for terrestrial invertebrates of conservation concern.

Higher Plants

5.4.50. Cofnod data included a total of 138 higher plant records which are either notable or are INNS. These species are summarised in Table 5-6. Notable higher plants are listed below by virtue of status conferred by inclusion on the following lists:

- LI-VP-51 (LR): Rare plant register for vice-county 51: Flintshire (Locally rare);
- LI-VP-51 (LS): Rare plant register for vice-county 51: Flintshire (Locally scarce);
- RDB-NR: Red data book-Nationally rare;
- RDB-NS: Red data book-Nationally scarce;
- RDB-DD: Red data book-Data deficient;
- WRL-VP (VU): Vascular plant red data list for Wales (Vulnerable);
- RL-NT: IUCN red list-Near threatened;

- RL-VU: IUCN red list-Vulnerable;
- UK Biodiversity Action Plan (UKBAP) species; and
- WCA8: Wildlife & Countryside Act 1981 Schedule 8 - Plants which are protected.

5.4.51. INNS are included on the following lists:

- WCA9: Wildlife & Countryside Act 1981 Schedule 9 - Plants which may not be released/planted or allowed to escape/grow in the wild;
- GBNNSIP: Great Britain non-native species inventory portal checklist of non-native species;
- INNS; and
- INNS-W: Invasive non-native species of Interest to Wales.

Table 5-6 – Notable & INNS higher plant species records within the study area, within last 10 years (2015-2025)

English name	Scientific name	Status list	Earliest year	Latest year	Total records
Notable Species					
Garden Asparagus	*Asparagus officinalis*	GBNNSIP, LI-VP-51	2017	2017	2
Box	*Buxus sempervirens*	RDB-NR, RL-DD	2018	2018	1
Seaside Centaury	*Centaurium littorale*	LI-VP-51(LR), RDB-NS	2015	2021	13
Mossy Stonecrop	*Crassula tillaea*	RDB-NS	2024	2024	1
Western Marsh-Orchid	*Dactylorhiza purpurella* subsp. *cambrensis*	UKBAP, LI-VP-51, RL-DD, S7, WRL-VP(VU)	2017	2017	2
Umbellate Hawkweed	*Hieracium umbellatum*	LI-VP-51	2015	2015	1
Bluebell	*Hyacinthoides non-scripta*	WCA8	2016	2021	11
Des Etangs' St John's-wort	*Hypericum perforatum x maculatum = H. x desetangsii*	LI-VP-51	2022	2022	2
Sharp Rush	*Juncus acutus*	RDB-NS	2022	2022	1
Welsh Poppy	*Meconopsis cambrica*	RDB-NS	2016	2017	2
Scots Pine	*Pinus sylvestris*	RDB-NS	2017	2022	2

English name	Scientific name	Status list	Earliest year	Latest year	Total records
Ray's Knotgrass	*Polygonum oxyspermum*	LI-VP-51	2018	2018	2
Annual Beard-grass	*Polypogon monspeliensis*	RDB-NS	2018	2018	1
Annual Pearlwort	*Sagina apetala*	LI-VP-51	2015	2015	1
Common Glasswort	*Salicornia europaea*	LI-VP-51	2017	2023	4
Creeping Willow	*Salix repens*	LI-VP-51	2015	2021	17
Saltwort	*Salsola kali*	LI-VP-51, RL-VU	2018	2019	12
Hybrid Woundwort	*Stachys sylvatica x palustris = S. x ambigua*	LI-VP-51	2018	2018	2
Spring Vetch	*Vicia lathyroides*	LI-VP-51	2016	2017	4
Smooth Tare	*Vicia tetrasperma*	LI-VP-51	2019	2021	4
Heath Dog-violet	*Viola canina*	LI-VP-51, RL-NT	2015	2017	4
Heath Dog-violet	*Viola canina* subsp. *canina*	LI-VP-51, RL-NT	2017	2017	4
	Viola tricolor x arvensis = V. x contempta	LI-VP-51	2016	2016	2
Dune Fescue	*Vulpia fasciculata*	LI-VP-51, RDB-NS	2017	2022	10
Horned Pondweed	*Zannichellia palustris*	LI-VP-51	2017	2017	2
INNS					
Wall Cotoneaster	*Cotoneaster horizontalis*	GBNNSIP, INNS, INNS-W, WCA9	2017	2022	3
Entire-leaved Cotoneaster	*Cotoneaster integrifolius*	GBNNSIP, INNS, INNS-W, WCA9	2022	2022	1
New Zealand Pigmyweed	*Crassula helmsii*	GBNNSIP, INNS, INNS-W, WCA9	2018	2018	1
Montbretia	*Crocosmia pottsii x aurea*	GBNNSIP, INNS,	2017	2022	5

English name	Scientific name	Status list	Earliest year	Latest year	Total records
	= C. x crocosmiiflora	INNS-W, WCA9			
Canadian Waterweed	*Elodea canadensis*	GBNNSIP, INNS, INNS-W, WCA9	2018	2018	1
Nuttall's Waterweed	*Elodea nuttallii*	GBNNSIP, INNS, INNS-IAS, INNS-W, WCA9	2018	2018	1
Sea-buckthorn	*Hippophae rhamnoides*	INNS, INNS-W, RDB-NS	2015	2018	4
Himalayan Balsam	*Impatiens glandulifera*	GBNNSIP, INNS, INNS-IAS, INNS-W, WCA9	2017	2018	3
Japanese Knotweed	*Reynoutria japonica*	GBNNSIP, INNS, INNS-W, WCA9	2018	2018	2
Rhododendron	*Rhododendron ponticum*	GBNNSIP, INNS, INNS-W, WCA9	2017	2017	1
Japanese Rose	*Rosa rugosa*	GBNNSIP, INNS, INNS-W, WCA9	2015	2024	9

Lower Plants and Fungi/Lichens

5.4.52. Cofnod data included a total of eight notable lower plant and fungi/lichen records. These species are summarised in Table 5-7. Notable fungi are listed below by virtue of status conferred by inclusion on the following lists:

- LI-FU-NW1: Rare fungi of North-west Wales (agarics and boletes);
- LI-FU-NW2: Rare fungi of North-west Wales (aphyllophorales);
- CHEGD: Grassland fungi (CHEGD) species; and
- WRL-SM(EN): Smut and allied fungi of Wales. A guide, red data list and census catalogue (Endangered).

5.4.53. Notable lower plants are listed below by virtue of status conferred by inclusion on the following lists:

- LI-VP-51 (LR): Rare plant register for vice-county 51: Flintshire (Locally rare);
- UK Biodiversity Action Plan (UKBAP) species;
- LI-BR-51 (LR): Bryophyte rarity list for vice-county 51: Flintshire (Locally rare);
- RL-EN: IUCN red list-Endangered;
- Environment (Wales) Act 2016 Section 7 (S7) species; and
- WRL-BR(EN): Bryophyte red data list for Wales (Endangered).

Table 5-7 – Notable lower plant & fungi/lichen records within the study area, within last 10 years (2015-2025)

English name	Scientific name	Status list	Earliest year	Latest year	Total records
Fungi					
Sandy Mushroom	*Agaricus devoniensis*	LI-FU-NW1	2020	2020	1
N/A	*Clavaria tenuipes*	CHEGD, LI-FU-NW2	2019	2019	1
Sea Holly Smut	*Entyloma eryngii*	WRL-SM(EN)	2020	2020	1
Dune Waxcap	*Hygrocybe conicoides*	CHEGD	2019	2020	2
Winter Stalkball	*Tulostoma brumale*	LI-FU-NW2	2019	2019	1
Lower plants					
Fragile Stonewort (An algae)	*Chara globularis*	LI-VP-51 (LR)	2016	2016	1
Sand Thread-moss	*Bryum warneum*	UKBAP, LI-BR-51 (LR), RL-EN, S7, WRL-BR(EN)	2017	2017	3

TERRESTRIAL ECOLOGICAL WALKOVER

5.4.54. The landscape surrounding the Proposed Development is a combination of rural, urban and coastal landscapes. The A548 is located approximately 1 km to the south of the Survey Area and is the closest major road. There are a number of small settlements located nearby, including Tanlan, Ffynnongroyw, Picton and Gwespyr to the south, and Tynymorfa to the west. The PoA colliery is located 1.4 km south/south-east of the Survey Area.

5.4.55. The Phase 1 and UKHab mapping is shown in Figure A.7 and Figure A.8, Annex A respectively.

Foredunes

5.4.56. The entire length of the front of the dunes within the Proposed Development Survey Area was walked (along the beach) to check for the presence of embryonic shifting dunes. This habitat type equates to UKHab s3a5 embryonic shifting dunes, Annex I embryonic shifting dunes (H2110) and NVC communities SD4 Elymus farctus ssp. boreali-atlanticus foredune community and SD5 Leymus arenarius mobile dune community. There is no separate classification to separate this habitat type from open dunes in Phase 1 methodology.

5.4.57. Embryonic shifting dunes were recorded along the seaward edge of the dunes in 2021/22 (with small amounts of the NVC SD4 Elymus farctus ssp. boreali-atlanticus foredune community being present) but were absent in 2025 during the walkover. Kim Norman of ENI informed the surveyors that large sections of foredunes had collapsed during storms over the winter of 2024/25, which accounted for the absence of embryonic shifting dunes.

Mobile dunes

5.4.58. The majority of habitat within the Survey Area was classified as s3a6 shifting dunes with marram (UKHab). This equates to H6.8 open dune in Phase 1 and constitutes the Annex I habitat; shifting dunes with marram (H2120).

5.4.59. The NVC communities SD6 Ammophila arenaria mobile dune community and SD7 Ammophila arenaria-Festuca rubra semi-fixed dune (NVC) were recorded during the NVC survey in 2021/22, both of which comprise shifting dunes with marram. The SD6 community is present across the younger dunes, nearer to the sea, with SD7 forming on more mature dunes, further back. The only constant species within the SD6 community is marram grass *Ammophila arenaria*, sometimes with sparse coverage and no other species present. The SD7 community normally has more dense coverage of marram and is far more species-rich than SD6, with a wide range of species growing between the marram shoots.

5.4.60. The shifting dunes with marram habitat (including SD6 and SD7) extended from the front of the dunes, south to the tarmac access track which runs parallel with the sand dunes. A species list with DAFOR scores for this habitat is presented in Annex C, Table C.3.

Dune slacks

5.4.61. Within the shifting dunes with marram/open dunes there were three well-defined dune slacks in the eastern half of the Survey Area. A

species list with DAFOR scores for this habitat is presented in Annex C, Table C.4. These were classified as humid dune slacks s3a3 within UKHab and dune slack H6.4 in Phase 1. This habitat constitutes the Annex I habitat, humid dune slacks (H2190). The middle slack was partially enclosed by a post and wire fence around its northern section, whilst the southern section was un-fenced. Consequently, the vegetation coverage was far thicker in the fenced section, at the time of the walkover, with a thick carpet of pointed spear-moss Calliergonella cuspidata present within the fenced area.

5.4.62. In the 2021/22 NVC survey, the SD14 Salix repens-Campylium stellatum dune slack community and the SD16 Salix repens-Holcus lanatus dune slack community were recorded within the dune slacks. Areas dominated by pointed spear-moss would also seem to indicate an affinity with the SD15 Salix repens-Calliergon cuspidatum dune-slack community.

5.4.63. A full NVC re-survey of the area would require further quadrat sampling to map the extent of the different NVC communities present, but annual dune slack vegetation monitoring surveys undertaken in August 2024 (Duffell, 2024) provided Modular Analysis of Vegetation Information System (MAVIS) similarity co-efficients, within sampling quadrats of over 50% for the SD14, SD15 and SD16 communities. The 2024 survey found that the SD16d Salix repens-Holcus lanatus dune-slack community-Agrostis stolonifera sub-community was present in the majority of quadrats, although some were transitional with SD14 Salix repens-Campylium stellatum dune-slack community. This is consistent with the findings of the 2021/22 NVC survey.

Dune grassland

5.4.64. A long, narrow strip of short grassland, which ran east to west across the middle of the shifting dunes with marram/open dunes and between two of the dune slacks was recorded during the walkover. This shorter grassland was dominated by red fescue Festuca rubra and was classified as s3a7 dune grassland in UKHab, which equates to H6.5 dune grassland in Phase 1 and comprises the Annex I habitat, dune grassland (H2130).

5.4.65. It appeared to resemble the NVC community; SD8 Festuca rubra-Galium verum fixed dune grassland, which was recorded during the 2021/22 NVC surveys. This short grassland strip included most of the locations that the Wildlife and Countryside Act 1981 (as amended) Schedule 8 liverwort: petalwort *Petalophyllum ralfsii* was last recorded in 2011. This species was searched for during 2022 NVC surveys and

during the 2025 walkover survey but was not re-found on either occasion.

5.4.66. Another strip of short dune grassland was recorded directly to the north of the tarmac access track, which was fenced for most of its length, due to it containing ten ponds which are managed for natterjack toads. A species list with DAFOR scores for the dune grassland habitat is presented in Annex C, Table C.5. Details of plant species growing within and around the natterjack ponds are given under 'other habitats' below.

Dense scrub

5.4.67. To the south of the access track, the habitat consisted predominantly of dense scrub classified as h3h mixed scrub in UKHab and A2.1 dense/continuous scrub in Phase 1. There were also some more open patches, dominated by false oat-grass *Arrhenatherum elatius* between less dense scrub patches and towards the north-east of the mapped dense scrub area. A species list with DAFOR scores for the dense scrub and patchy grassland habitat is presented in Annex C, Table C.7.

5.4.68. The scrub consisted mostly of bramble *Rubus fruticosus*, with frequent sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna* and grey willow *Salix cinerea*. Some individual larger trees or small tree groups were also present and were recorded and condition assessed separately for use during NBB assessment.

5.4.69. The habitat present during the 2025 walkover corresponded to habitat recorded during the NVC survey, with this area being classified in the 2022 NVC survey as a mosaic of MG1 Arrhenatherum elatius grassland, W24 Rubus-Holcus undershrub, W2 Salix-Betula-Phragmites woodland and W6 Alnus-Urtica woodland.

Modified grassland

5.4.70. To the south of the dense scrub, there was a large, pasture field at Warren Farm, classified as g4 modified grassland in UKHab and B4 improved grassland in Phase 1. It is not within the Site but is within the Survey Area.

5.4.71. The field was species-poor and dominated by perennial rye-grass *Lolium perenne* and white clover *Trifolium repens*, giving a close match to the NVC community MG7 Lolium perenne leys, as it did during the 2022 NVC survey. A species list with DAFOR scores for the modified grassland is presented in Annex C, Table C.6.

Intertidal habitat

5.4.72. Immediately to the north of the open dune/shifting dunes with marram, the Survey Area encompassed a strip of beach. This strip would be classified as t2d5 intertidal mudflats and sandflats in UKHab and as H1.1 intertidal mud/sand in Phase 1. This habitat constitutes Annex I intertidal mudflats and sandflats (H1140).

5.4.73. The mud and sand habitat extends northwards towards the sea covering most of the intertidal area within the Proposed Development. These habitats are covered in detail in the section Aquatic and Intertidal Ecology- walkover below.

Other habitats

5.4.74. Other habitats present included ten small ponds which have been excavated as breeding habitat for natterjack toads. They were located within a fenced area of short dune grassland, to the north of the tarmac footpath which runs east to west across the Survey Area. The ponds would be classified as r1 standing open water and canals in UKHab and G1 standing water in Phase 1.

5.4.75. The ponds were recorded and condition assessed separately for the NBB assessment, but aquatic/marginal plant species recorded in and around the ponds included creeping willow, stonewort (unidentified Charophyte species growing within some ponds), yellow iris *Iris pseudacorus*, pointed spear-moss, unidentified marsh orchids Dactylorhiza sp., blunt-flowered rush *Juncus subnodulosus*, soft rush *Juncus effusus*, hard rush *Juncus inflexus* and brookweed *Samolus valerandi*.

5.4.76. Other mapped habitats included a caravan site; u1 built-up areas and gardens in UKHab and J3.4 caravan site in Phase 1 and a tarmac footpath (u1b developed land; sealed surface in UKHab and hard standing in Phase 1).

Invasive Non-Native Species

5.4.77. INNS were also recorded and are highlighted in the species lists in Annex C. The only Wildlife and Countryside Act 1981 (as amended) Schedule 9 species recorded within the Site was montbretia *Crocosmia x crocosmiiflora*, which was present on the open dune/shifting dunes with marram. Japanese rose *Rosa rugosa* was widespread along dunes and grassland to the east of the Site but was not present within the Site.

5.4.78. Another nine non-native neophyte species which do not appear on Schedule 9 were recorded on the open dune/shifting dunes with marram and dune grassland, including:

- Snow-in summer *Cerastium tomentosum*;
- Spanish bluebell *Hyacinthoides hispanica*;
- Bearded iris *Iris germanica*;
- Red hot poker *Kniphofia uvaria*;
- Garden lupin *Lupinus polyphyllus*;
- Flowering currant *Ribes sanguineum*;
- Canadian goldenrod *Solidago canadensis*;
- Snowberry *Symphoricarpos albus*; and
- Lilac *Syringa vulgaris*.

AQUATIC AND INTERTIDAL ECOLOGICAL WALKOVER

5.4.79. The walkover survey undertaken on the 2nd April 2025 identified broadly similar habitats present to those identified within the April 2022 surveys (Talitrids on the upper shore and strand-line, Polychaete/bivalve-dominated muddy sand shores, Barren or amphipod-dominated mobile sand shores Macoma balthica and Arenicola marina in littoral muddy sand). Refer to Figure A.9, Annex A.

5.4.80. Potential changes were present along the base of the dunes, which had been previously recorded as having a berm and backshore present; this was absent during the 2025 visit and was replaced by a steep backshore and band of cobbles and pebbles which varied in width from 5-10 m. This was likely exposed during recent storms which resulted in the erosion of the embryo dunes recorded in the previous surveys. This area of exposed cobbles and pebbles is landward of the proposed HDD exit pit, therefore will not be impacted by the Proposed Development and is unlikely to change the conclusions of the Consented Development.

5.4.81. In addition to the habitats identified, the following species were identified during the validation survey:

- Blow lugworm *Arenicola marina*;
- bristle worm *Lagis koreni*;
- sand mason worms *Lanice conchilega*;
- nephtys worm;
- European mud scud *Corophium volutator*;
- common periwinkle *Littorina littorea*; and

- necklace shell *Euspira catena*.

5.4.82. In addition to the live specimens recorded, dead shells of a range of bivalve species were recorded including: Razor clam Ensis sp, blue mussel, common cockle, Baltic tellin and the crustacean green shore crab. None of the species recorded were classed as uncommon or protected and apart from the European mud scud, all were reported in the previous surveys undertaken in April 2022. A comparison of the habitats and species identified in the 2022 and 2025 surveys is shown in Table 5-8.

Table 5-8 Comparison of habitats and species between the 2022 survey and the 2025 validation survey

Habitat/species identified	2022 survey	2025 survey
Talitrids on the upper shore and strand-line;	✓▪	✓▪
polychaete/bivalve-dominated muddy sand shores;	✓▪	✓▪
barren or amphipod-dominated mobile sand shores; and,	✓▪	✓▪
Macoma balthica and *Arenicola marina* in littoral muddy sand	✓▪	✓▪
Shingle and pebble shores		✓▪
Green shore crab *Carcinus maenas*	✓▪	*✓▪
Blow lugworm *Arenicola marina*	✓▪	✓▪
Baltic Tellin *Macoma balthica*	✓▪	*✓▪
Thin tellin *Macomangulus tenius*	✓▪	
Bristle worm *Lagis koreni*	✓▪	✓▪
Sand mason worms *Lanice conchilega*	✓▪	✓▪
Tube worm *Owenia fusiformis*	✓▪	
Common cockle *Cerastoderma edule*	✓▪	*✓▪
Brown shrimp *Crangon crangon*	✓▪	
Juvenile flounder *Platuchthys flesus*	✓▪	
Common periwinkle *Littorina littorea*	✓▪	✓▪
Scrobicularia plana	✓▪	*✓▪
A single juvenile blue mussel *Mytillus edulis* and;	✓▪	*✓▪

Habitat/species identified	2022 survey	2025 survey
necklace shell *Polinices catenus* (now *Euspira catena*	✓▪	✓▪
European mud scud *Corophium volutator*		✓▪
Nephtys sp		✓▪
Razor clam		*✓▪

*Denotes dead shells/specimens were recorded.

5.4.83. Further details on the inter-tidal and aquatic ecology are covered within Water Framework Directive (WFD) assessment report (Document Reference: PF.3.4) submitted with the Application.

5.5. POTENTIAL ECOLOGICAL IMPACTS

5.5.1. This section describes potential adverse effects on ecological receptors. A Habitat Regulations Assessment (PF.3.3)and Net Benefit for Biodiversity assessment (PF.3.5) have also been undertaken in support of the new TCPA application. These contain further details on potential impacts on European protected sites and the ability of the Proposed Development to achieve Net Benefits to Biodiversity respectively.

CONSTRUCTION PHASE

5.5.2. The designated sites and Section 7 Priority Habitats within the Site will incur direct impacts during the construction phase, including temporary habitat loss, and damage and there exists further potential for disturbance to qualifying habitats and species due to construction of the temporary HDD exit pit and the cable burial in the intertidal area.

5.5.3. The designated sites and Section 7 Priority Habitats within and near the Site may also incur indirect impacts such as habitat degradation and disturbance to qualifying habitats and species (particularly at sensitive times of the year) due to vehicle movements and plant storage, pollution events, and noise and vibration.

5.5.4. However, with the implementation of best practice measures and project specific mitigation measures set out in Section 5.6 of this report and the CEMP, it is anticipated that the Proposed Development will have no significant effects on the designated sites and Section 7 Priority Habitats during the construction phase.

5.5.5. One possible consequence of the cable's shift eastwards is that it now brings the HDD directly beneath the dune slacks, which may impact upon hydrology within this area and the species this habitat supports.

However, given the depth and small diameter of the cable/conduit proposed, any impact is likely to be minimal and localised in extent.

OPERATIONAL PHASE

5.5.6. Given the nature of the Proposed Development, operation of the cables would lead to the generation of electromagnetic fields (EMF). EMF are generated by the current that passes through the cable. Many fish and benthic invertebrate species are known to be able to detect EMF. The following fish species that have been recorded within the Dee Estuary are known to exhibit a response to electric fields: thornback ray, sea lamprey, European eel, cod, plaice, and Atlantic salmon.

5.5.7. In a technical response to NRW during the determination of the Consented Development (FUL/000246/23), and Marine License application (Licence number: CML2365), it was demonstrated that for a DC cable similar to that for the Proposed Development (33kV, three core x 630 mm^2 cable with a current rating of 750 A (although that of the Proposed Development will be an even lower amperage)), with grounded metallic sheath, and buried at 1 m below surface, there will be no detectible electric fields external to the metallic sheath.

5.5.8. While the cable will generate static magnetic fields, which will not be screened by the metallic sheath, the EMF generated by the cables is likely to be ~0.1 µT, calculated for a cable buried at 1 m in depth. This is a magnetic field of extremely low values, and these values are much lower than any of those cited from the published literature on the matter where effects may occur on marine life. The Proposed Development will bury the cable at an even greater depth of 2.5 m. Consequently, the impacts associated with EMF will be negligible.

5.6. MITIGATION

5.6.1. The installation of the HDD Exit Pit on Talacre Beach is currently programmed to avoid most of the little tern breeding season by carrying out the HDD Conduit, and Exit Pit works during February and March 2026. The activities for the installation of the electrical cable on Talacre Beach will carry out the activities towards the end of the little tern breeding season from early July 2026. The installation works will also be carried out away from the main areas of foraging for the Little Tern and will be monitored throughout construction by an Ecological Clerk of Works.

5.6.2. The protected species located within the Gronant Dunes habitats, such as sand lizard, natterjack toad, and great crested newt will be avoided by installing the HDD conduit under these dunes.

5.6.3. Mitigation measures will be included within the CEMP and detailed in a Precautionary Working Method Statement (PWMS). An Ecological Clerk of Works (ECoW) will be present during construction (where required). A Biosecurity Risk Assessment (BRA) and invasive non-native species (INNS) Management Plan will be produced and implemented.

5.7. SUMMARY

5.7.1. Overall, the habitats recorded within the Survey Area in 2025 closely match the habitat types and extents recorded during the 2021/2022 NVC and intertidal phase 1 habitat survey; the Survey Area covered similar areas to the 2021/2022 NVC survey. Full condition assessments were made of each of the habitats for use within the NBB assessment, where they will be discussed further.

5.7.2. The habitats were observed as similar in condition to previous surveys, but more scrub was noted growing on the open dunes in 2025 than in 2021/2022. The scrub consisted mostly of hawthorn and sycamore.

5.7.3. Due to the similar habitat types present, it is reasonable to conclude that the habitat baseline has not changed sufficiently for there to be any impacts beyond those identified in the Consented Development.

5.7.4. One possible consequence of the cable's shift eastwards is that it now brings the HDD directly beneath the dune slacks, which may impact upon hydrology within this area and the species this habitat supports. However, given the small diameter of the cable/conduit proposed, any impact is likely to be minimal and localised in extent.

5.7.5. The updated desk study records and the 2025 survey of the Proposed Development show the habitats present are still suitable to support protected species to the same extent as those identified within the 2021 and 2022 species surveys with two exceptions:

- There is one tree within the RLB with features suitable for supporting small numbers of bats (which will be unaffected, due to the use of HDD in this area of the RLB); and
- There is no longer any suitable habitat for water vole within the RLB.

6. ARBORICULTURE

6.1. INTRODUCTION

6.1.1. This section outlines the baseline conditions of sensitive arboricultural receptors assessed for the Proposed Development and the methodology employed for updating and validating the baseline tree data.

6.2. METHODOLOGY

6.2.1. A desk study has been undertaken to review the existing tree data (collected for the Consented Development) and assess the impacts of the Proposed Development on individual trees and groups of trees.

6.3. BASELINE

6.3.1. The baseline data for the Consented Development was collected during 2022 with walkover surveys capturing information for individual trees and groups of trees in line with British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' (BSI, 2012).

6.3.2. The desk study undertaken for the Consented Development found no records for tree preservation orders, conservation areas, ancient woodland or veteran trees within the application boundary.

6.4. BASELINE VALIDATION

6.4.1. The tree data collected for the Consented Development has been remotely validated with no additional trees or groups of trees reported for the Proposed Development.

6.5. SUMMARY

6.5.1. The Proposed Development, as described in Section 3 of this report, has been assessed has having no additional impacts to trees.

6.5.2. If additional impacts to trees are identified post construction, the mitigation measures detailed in the Outline Arboricultural Method Statement (AMS) presented in Annex D should be adopted.

7. CONCLUSION

7.1.1. The desk-based studies and walkover surveys set out in this report have validated that the environmental baseline conditions for the Proposed Development are consistent with those of the Consented Development (focusing on Cultural Heritage, Biodiversity and Arboriculture).

CULTURAL HERITAGE

7.1.2. The desk-based studies and walkover surveys conducted for Cultural Heritage conclude that the archaeological potential remains consistent with the baseline established in the 2023 Historic Environment Desk-based Assessment.

7.1.3. The site is expected to have high archaeological survival, particularly within alluvial tidal flat deposits. Although two WWII aircraft crash sites are located nearby, the cable alignment avoids them by over 100 m, eliminating the need for a Ministry of Defence licence. The use of HDD will minimize disturbance to archaeological layers, and an archaeological watching brief will be conducted during excavation of the HDD exit pit. A PAD will also be in place to manage any unexpected archaeological findings in the inter-tidal area. Temporary minor impacts on the setting of the Point of Ayr Lighthouse are anticipated due to construction activities, but these are not considered significant due to mitigation measures outlined in the CEMP.

BIODIVERSITY

7.1.4. The baseline information gathered during the desk-based studies and walkover surveys conducted in 2025 show conditions similar to those recorded in 2021/2022, with only minor changes such as increased scrub growth. Protected species habitats remain largely unchanged, with the exception of one tree suitable for bats (which will be unaffected, due to the use of HDD in this area of the RLB) and the absence of water vole habitat. There is therefore considered to be no change to the baseline from that recorded for the Consented Development.

7.1.5. During construction, temporary habitat loss, disturbance to designated sites and Section 7 Priority Habitats, as well as protected species, have the potential to occur, but these will be mitigated through:

- the scheduling of works to avoid sensitive periods (such as the little tern breeding season);

- The use of the HDD method itself, as it allows the cable to pass beneath sensitive dune habitats, avoiding direct impacts on protected species;
- implementing a PWMS, BRA, and invasive species management plan; and
- An ECoW will also oversee construction activities, where necessary.

During operation, the cables would lead to the generation of EMF. However, this will not be sufficient to cause any adverse effects on marine receptors.

ARBORICULTURE

7.1.6. The arboriculture data collected for the Consented Development has been remotely validated, with no additional trees or groups of trees reported for the Proposed Development. This data (and surveys undertaken to inform Section 5) confirm the foreshore vegetation is identified as scrub. This also concludes that the proposed pipeline installation method is not expected to impact existing trees. If any unforeseen impacts arise post-construction, mitigation measures outlined in the Outline Arboricultural Method Statement will be implemented.

SUMMARY

7.1.7. In summary, overall, the environmental baseline recorded within the Site during this validation exercise closely matches that recorded during surveys and desk studies undertake to support the application for the Consented Development. It is therefore concluded that, across the environmental topics considered in this report, baseline has not changed sufficiently for there to be any impacts beyond those identified for the Consented Development. Moreover, the implementation of recommended mitigation measures will further ensure that adverse impacts on receptors do not occur.

7.1.8. As the new TCPA application for the Proposed Development is seeking re-authorisation of the same works already consented under application FUL/000246/23, it can be concluded that no significant adverse impacts will occur.

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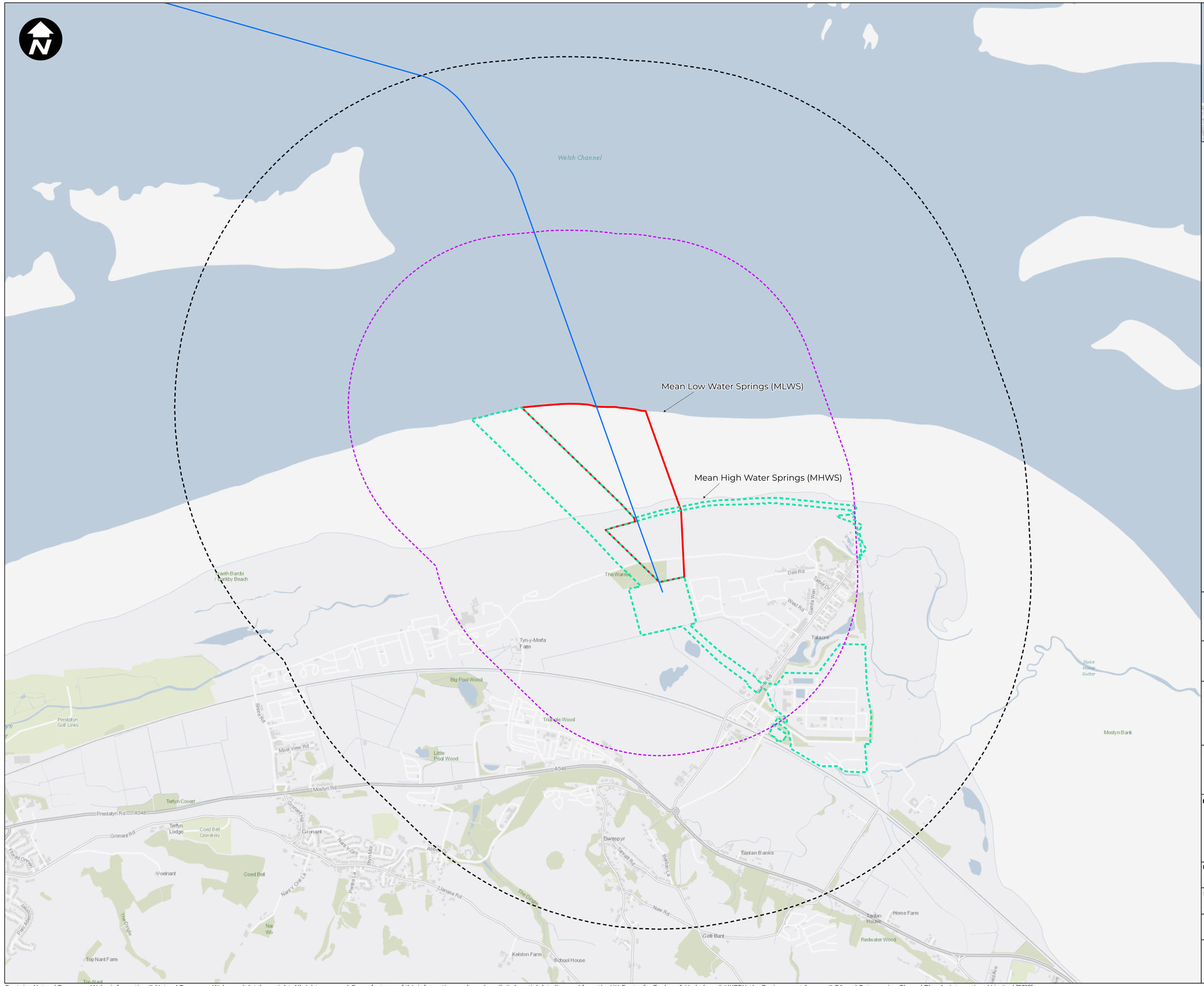
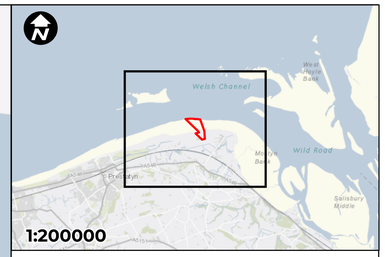
Annexures

Annex A

FIGURES





Key:

- Proposed Development Red Line Boundary
- Consented Development Red Line Boundary
- Foreshore Area Cable Alignment
- 1km Buffer
- 2km Buffer

SCALE: 1:10,000

0 250 500 750 Metres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure: A.1
Planning Application Boundary for the Proposed Development

DRAWING STATUS

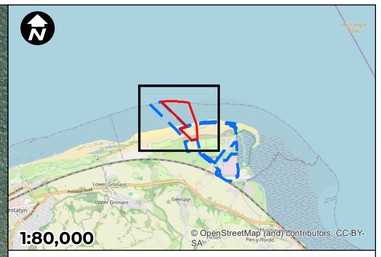
FOR REVIEW AND COMMENT

DRAWN	CHECKED	APPROVED	AUTHORISED
PB	AA	NH	MT

SCALE @ A1 SIZE	DATE	REVISION
1:10,000	02/06/2025	A

DRAWING NUMBER

UK0029984.4176- PF.3.2.1-ES- Sheet1



Key:

- Proposed Development Boundary
- Consented Development Boundary
- Aquatic and Intertidal Ecology Survey Area
- Terrestrial Ecology Survey Area

SCALE: 1:3,000

0 0.1 0.2 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.2: Development Boundaries and Survey Areas

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
1:3,000	02/06/2025	A

DRAWING NUMBER

UK0029984.4176- PF.3.2.2-ES- Sheet1

Liverpool Bay (SPA)

Mersey Narrows & North Wirral Foreshore (SPA and Ramsar)

The Dee Estuary (SAC, SPA and Ramsar)

Halkyn Mountain (SAC)

River Dee & Bala Lake / Afon Dwfrdwy a Llyn Tegid (SAC)

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

1:750,000

Key:

- Proposed Development Boundary
- 10km Study Area
- Special Protection Area (SPA)
- Special Areas of Conservation (SAC)
- Ramsar Site

SCALE: 1:65,000

0 2.25 4.5 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.3: Internationally Designated Sites

DRAWING STATUS

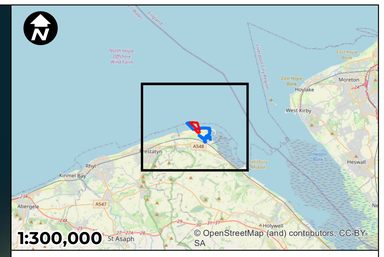
FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS/NC	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
1:65,000	02/06/2025	A

DRAWING NUMBER

UK0029984.4176- PF.3.2.3-ES- Sheet1



Key:

- Proposed Development Boundary
- 2km Study Area
- Site of Special Scientific Interest (SSSI)
- Local Nature Reserve (LNR)

SCALE: 1:15,000

0 0.5 1 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.4: Nationally Designated Sites

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
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DRAWING NUMBER

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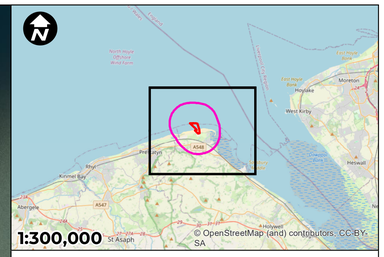

Key:

- Proposed Development Boundary
- 2km Study Area

Non-statutory designated sites

- Wildlife Sites for Flintshire (WSF)

Other designated sites

- North Wales Wildlife Trust (NWWT) Reserve
- Royal Society for the Protection of Birds (RSPB) Reserve

SCALE: 1:15,000

0 0.5 1 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.5: Non-statutory and Other Locally Designated Sites

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
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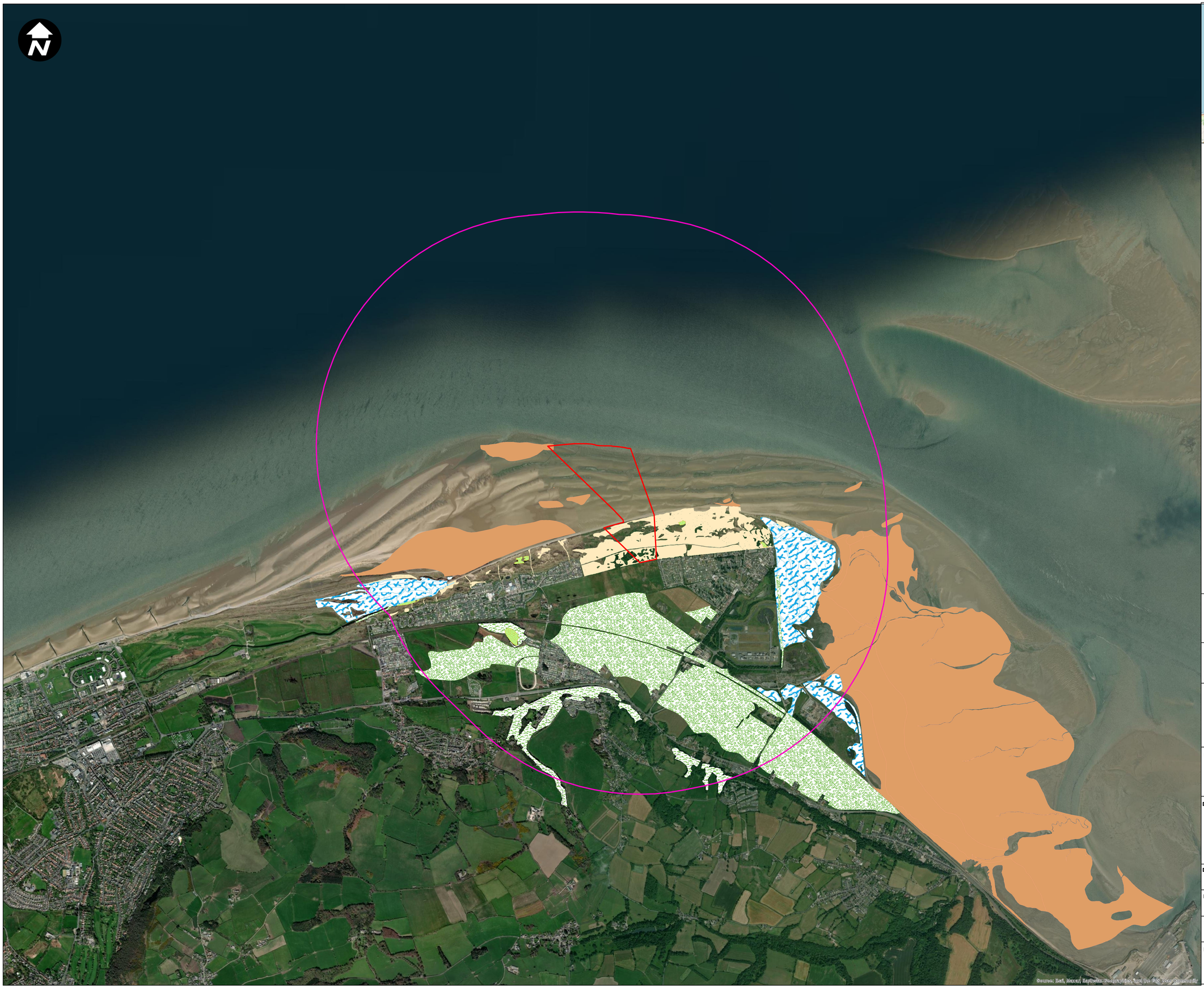
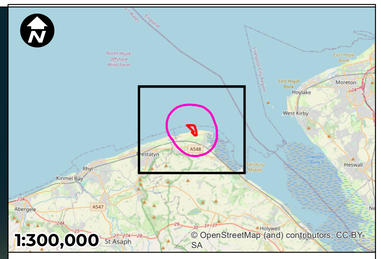
DRAWING NUMBER

UK0029984.4176- PF.3.2.5-ES- Sheet1





Key:

- Proposed Development Boundary
- 2km Study Area

Section 7 Habitats Terrestrial and Marine Habitats of Principal Importance

- Ancient Woodland
- Coastal Saltmarsh
- Coastal and Floodplain Grazing Marsh
- Intertidal mudflats
- Lowland fens and reedbeds
- Sand dunes

SCALE: 1:15,000

0 0.5 1 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.6: Section 7 Priority Habitats

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
1:15,000	02/06/2025	A

DRAWING NUMBER

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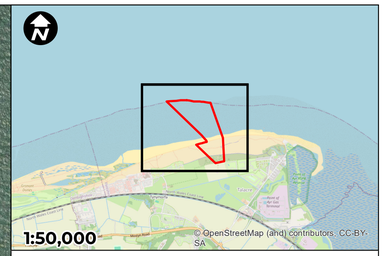


Key:

- Proposed Development Boundary
- Aquatic and Intertidal Ecology Survey Area
- Terrestrial Ecology Survey Area

Phase 1 Area Habitats

- Scrub - dense/continuous
- Improved grassland
- Standing water
- Intertidal - mud/sand
- Dune slack
- Dune grassland
- Open dune
- Hard standing
- Caravan site

Phase 1 Linear Features

- Fence

Phase 1 Point Features

- Individual trees/tree groups
- Scrub - scattered

SCALE: 1:2,500

0 0.075 0.15 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.7: Phase 1 Habitat Map of Survey Area

DRAWING STATUS

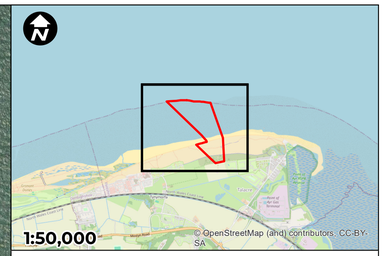
FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
1:2,500	02/06/2025	C

DRAWING NUMBER

UK0029984.4176- PF.3.2.7-ES- Sheet1



Key:

- Proposed Development Boundary
- Aquatic and Intertidal Ecology Survey Area
- Terrestrial Ecology Survey Area

UKHab Habitat Classification

- g4 - modified grassland
- h3 - dense scrub
- r1 - standing open water and canals
- s3a3 - humid dune slacks
- s3a6 - shifting dunes with marram
- s3a7 - dune grassland
- t2d5 - intertidal mudflats and sandflats
- u1 - built-up areas and gardens
- u1b - developed land, sealed surface
- u1e - built linear features
- Individual trees
- Scattered scrub (10)

SCALE: 1:2,500

0 0.075 0.15 Kilometres

liverpool bay ccs

PROJECT TITLE

Point of Ayr Cable Route Foreshore Works

DRAWING TITLE

Figure A.8: UKHab Map of Survey Area

DRAWING STATUS

FOR ISSUE

DRAWN	CHECKED	APPROVED	AUTHORISED
KS	SS	TB	TB

SCALE @ A1 SIZE	DATE	REVISION
1:2,500	02/06/2025	C

DRAWING NUMBER

UK0029984.4176- PF.3.2.8-ES- Sheet1

Annex B

CULTURAL HERITAGE CORRESPONDENCE

Details on Correspondence with Heneb

Outlook

Re: CML2365 HyNet Offshore Realignment cable route consultation by 25 March 2025

From Mark Walters <[redacted]>
Date Wed 2/12/2025 9:33 AM
To Alvarez, Maria <[redacted]>

You don't often get email from [redacted] Learn why this is important

Rhybudd: Deilliodd yr e-bost hwn o'r tu allan i'r sefydliad. Peidiwch â chlicio dolenni, atodiadau agored nac sganio codau QR oni bai eich bod yn cydnabod yr anfonwr ac yn gwybod bod y cynnwys yn ddiogel.

Caution: This email originated from outside of the organisation. Do not click links, open attachments or scan QR Codes unless you recognise the sender and know the content is safe.

Dear Maria

Thank you for the additional consultation on the cable realignment across Talacre Beach and offshore.

The mitigation for all potential archaeological impacts has been secured in the TCPA ES and through the production of an Outline Archaeological WSI which will drive the mitigation. The change to the alignment of the cable trench has not altered the ES conclusions, and we therefore have no additional requirements. Dr Julian Whitewright (RCAHMW) will comment separately on the offshore elements of the scheme as well as the intertidal zone.

Best regards

Mark Walters

Mark Walters
Senior Planning Archaeologist
Heneb: Clwyd-Powys Archaeology

Phone: [redacted] Mobile: [redacted]
Ebost/ Email [redacted]

Heneb
Mark Walters | Clwyd-Powys
Uwch Archaeolegydd Cynllunio | Senior Planning Archaeologist
[redacted]
www.heneb.org.uk

Ymddiriedolaeth Archaeoleg Cymru | The Trust for Welsh Archaelogy
Cadeirydd | Chair: Dr Carol Bell PSG | CEO: Richard Nicholls

Mae Heneb yn Sefydliad Cofrestredig gyda'r Chartered Institute for Archaeologists

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From: Alvarez, Maria <[redacted]>
Sent: Tuesday, February 11, 2025 5:08 PM
Subject: CML2365 HyNet Offshore Realignment cable route consultation by 25 March 2025

Dear consultee,

Please find attached an application for a Marine Licence and covering letter to carry out:

HYNET CARBON DIOXIDE TRANSPORTATION AND STORAGE PROJECT – OFFSHORE

Marine Licence Band 3 EIA

The Marine Licensing Team has received a request for a change to the application to undertake the above stated works from Liverpool Bay CCS Limited, for a Marine Licence under Part 4 of the Marine and Coastal Access Act 2009.

The application is for the repurpose the existing Eni offshore assets in Liverpool Bay, which will include the natural gas import pipeline from the Douglas platform to Point of Ayr (PoA) Gas Terminal to become an export pipeline to transport CO2 to a newly constructed Douglas Carbon Capture and Storage (CCS) platform. **A change to the approach cable route for the Welsh Channel and across Talacre Beach has been received, and it is out for consultation.**

All documents can be accessed through the Online Public Register using the case code CML2365. Attached you will find the documents submitted in support of this realignment to the cable route together with the consultation letter:

- CML2365 LB CCS-Cable Realignment Technical Note-07.02.2025
- CML2365 MC000025_ENI_Hynet_RevisedDevelopmentArea_WelshWaters_Coordinates_250206

Please submit any comments within **42 days**, this date being **25 March 2025**, referencing the cases number **CML2365**.

If you do not respond by this date, I will assume you have no comment to make.

Please assess the application on year time scale to highlight any potential seasonal effects/hazards.

If you have any queries regarding this application, please do not hesitate to contact myself.

Kind regards,

Maria Alvarez, MSc. PhD

Swyddog Arbenigol Arweiniol/ Lead Specialist Officer
Cyfarwyddiaeth Tystiolaeth, Polisi a Thrwyddedu | Evidence, Policy and Permitting Directorate
Rhif ffôn | Phone number [redacted]
Rhagenwau Hi/Hithau | Pronouns She/Her

Annex C

BIODIVERSITY TABLES

Table C.1 - Statutory designated sites within 2 km of the survey area

Site name	Distance and direction from red line boundary	Reasons for designation
Dee Estuary/Aber Afon Dyfrdwy SPA	0 km (within the Site)	The SPA qualifies under Article 4.1 of the Wild Birds Directive as it is used regularly by 1% or more of the Great Britain populations of the following species listed in Annex I in any season: • Common tern *Sterna hirundo* (breeding season) • Little tern *Sternula albifrons* (breeding season) • Sandwich tern *Thalasseus sandvicensis* (on passage) • Bar-tailed godwit *Limosa lapponica* (over winter) The SPA qualifies under Article 4.2 of the Wild Birds Directive 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 listed in Annex I) in any season: • Redshank *Tringa totanus* (on passage and over winter) • Shelduck *Tadorna tadorna* (over winter) • Teal *Anas crecca* (over winter) • Pintail *Anas acuta* (over winter) • Oystercatcher *Haematopus ostralegus* (over winter) • Grey plover *Pluvialis squatarola* (over winter) • Knot *Calidris canutus* (over winter) • Dunlin *Calidris alpina* (over winter) • Black-tailed godwit *Limosa limosa* (over winter) • Curlew *Numenius arquata* (over winter) The SPA also qualifies under Article 4.2 of the Wild Birds Directive as it is used regularly by over 20,000 waterbirds in any season (assemblage qualification).

Site name	Distance and direction from red line boundary	Reasons for designation
		In the non-breeding season, the area regularly supports 120,726 individual waterbirds, including great crested grebe *Podiceps cristatus*, cormorant (*Phalacrocorax carbo*), shelduck, wigeon *Mareca penelope*, teal, pintail, oystercatcher, grey plover, lapwing *Vanellus vanellus*, knot, sanderling *Calidris alba*, dunlin, black-tailed godwit, bar-tailed godwit, curlew and redshank.
Dee Estuary/Aber Afon Dyfrdwy SAC	0 km (within the Site)	Annex I habitats that are a primary reason for the selection of this site: • Mudflats and sandflats not covered by seawater at low tide • *Salicornia* and other annuals colonising 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* • Fixed coastal dunes with herbaceous vegetation • 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* • Petalwort *Petalophyllum ralfsii*
Dee Estuary/Aber Afon Dyfrdwy Ramsar	0 km (within the Site)	The site qualifies under Ramsar Criterion 1 because it contains a representative, rare, or unique example of a natural or near-natural

Site name	Distance and direction from red line boundary	Reasons for designation
		wetland type found within the appropriate biogeographical region. This includes the following Annex I Habitats: • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Annual vegetation of drift lines • Vegetated sea cliffs of the Atlantic and Baltic coasts • *Salicornia* and other annuals colonising mud and sand • Atlantic salt meadows *Glauco-Puccinellietalia maritimae* • Embryonic shifting dunes • Shifting dunes along the shoreline with *Ammophila arenaria* • Fixed dunes with herbaceous vegetation • Humid dune slacks The site qualifies under Ramsar Criterion 2 because it supports vulnerable, endangered, or critically endangered species or threatened ecological communities: • Natterjack toad *Bufo calamita* The site qualifies under Ramsar Criterion 5 because it supports an assemblage of waterbirds of international importance. In the non-breeding season, the area regularly supports 120,726 individual waterbirds (five-year peak mean 1994/95 - 1998/99). The site qualifies under Criterion 6 because it regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird: • Peak counts in spring/autumn: o Redshank • Peak counts in winter:

Site name	Distance and direction from red line boundary	Reasons for designation
		○ Teal ○ Shelduck ○ Oystercatcher ○ Curlew ○ Pintail ○ Grey Plover ○ Knot ○ Dunlin ○ Black-Tailed Godwit ○ Bar-Tailed Godwit
Liverpool Bay/ Bae Lerpwl SPA	0 km (adjacent to the Site)	Qualifying species – over the winter: • Red-throated diver *Gavia stellata* • Little gull *Hydrocoloeus minutus* • Common Scoter *Melanitta nigra* Breeding: • Little tern • Common tern The SPA also supports an article 4.2 qualification (79/409/EEC): An internationally important assemblage of birds. Over the winter the area regularly supports 120,726 waterfowl including Red-throated diver, common scoter, little gull, red-breasted merganser *Mergus serrator*, cormorant, black-headed gull *Chroicocephalus ridibundus*, common gull *Larus canus*, common eider *Somateria mollissima*, northern fulmar *Fulmarus glacialis*, great black-backed gull *Larus marinus*, great crested grebe, common guillemot *Uria aalge*, northern gannet *Morus bassanus*, Atlantic puffin *Fratercula arctica*, herring gull *Larus argentatus*, black-legged Kittiwake *Rissa tridactyla*, lesser black-

Site name	Distance and direction from red line boundary	Reasons for designation
		backed gull *Larus fuscus*, great northern diver *Gavia immer*, European shag *Phalacrocorax aristotelis*, razorbill *Alca torda*, velvet scoter *Melanitta fusca*.
Mersey Narrows and North Wirral Foreshore SPA	7 km north-east	Qualifying species – during the breeding season the area regularly supports: • Common tern Qualifying species – over the winter the area regularly supports: • Bar-tailed godwit • Knot Qualifying species – on passage: • Little gull The SPA also supports an article 4.2 qualification (2009/147/EC): An internationally important assemblage of birds in the non-breeding season including cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit and common redshank.
Mersey Narrows and North Wirral Foreshore Ramsar	7 km north-east	The site qualifies under Ramsar Criterion 4 because it regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions. During 2004/05 - 2008/09 the Mersey Narrows and North Wirral Foreshore Ramsar site supported important numbers of non-breeding little gulls and common terns. The site qualifies under Ramsar Criterion 5 because it regularly supports 20,000 or more waterbirds. During the winters 2004/05 - 2008/09, the Mersey Narrows and North Wirral Foreshore Ramsar site supported an average peak of 32,402 individual waterbirds.

Site name	Distance and direction from red line boundary	Reasons for designation
		The site qualifies under Ramsar Criterion 6 because it regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird in any season: • Knot • Bar-tailed godwit
Halkyn Mountain/Mynydd Helygain SAC	9.5 km south-east	Annex I habitats that are a primary reason for the selection of this site: • Calaminarian grasslands of the *Violetalia* calaminariae • European dry heaths • *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils *Molinion caeruleae* • Semi-natural dry grasslands and scrubland facies: on calcareous substrates *Festuco Brometalia* Annex II species present as a qualifying feature, but not a primary reason for site selection: • Great crested newt
Gronant Dunes and Talacre Warren SSSI	0 km	The dunes support a characteristic flora dominated by marram grass *Ammophila arenaria* with sand couch grass *Elytrigia juncea* and lyme grass *Leymus arenarius*. Other species include sea holly *Eryngium maritimum*, sea sandwort *Honkenya peploides* and pyramidal orchid *Anacamptis pyramidalis*. The nationally scarce dune fescue *Vulpia fasciculata*, Portland spurge *Euphorbia portlandica* and white horehound *Marrubium vulgare* are also present. The dune slacks support a rich flora which includes early marsh orchid *Dactylorhiza incarnata*, northern marsh orchid *Dactylorhiza purpurella*, southern marsh orchid *Dactylorhiza praetermissa*, and the nationally scarce seaside centaury *Centaurium littorale*. The rare liverwort *Petalophyllum ralfsii* also occurs in the dune slacks. Other coastal habitats present on the site include freshwater and brackish marshes, dominated by

Site name	Distance and direction from red line boundary	Reasons for designation
		common reed *Phragmites australis* and sea club-rush *Bolboschoenus maritimus* respectively. The site supports a rich invertebrate assemblage which comprises many nationally scarce species and five Red Data Book species, of which the most important are the sandhill rustic moth *Luperina nickerlii gueneei*, the sand wasp *Podalonia affinis* and the mining bee *Colletes cunicularius*. One of the shingle spits supports nationally important numbers, and the largest breeding colony in Wales, of the little tern. Other bird species which occur in nationally important numbers are sanderling which overwinter at Gronant, and cormorant which roost on the foreshore in summer. Of additional interest are the high tide wader roost and winter gull roost at Gronant. The foreshore in summer is also an important roosting and loafing area for terns on passage.
Dee Estuary/Aber Afon Dyfrdwy SSSI	0 km	The Dee Estuary is designated as a SSSI for its total populations of internationally important wintering waterfowl; its populations of individual waterfowl and tern species whose numbers reach national and in some cases, internationally important levels; its intertidal mud and sandflats, saltmarsh and transitional habitats; the hard rocky sandstone cliffs of Hilbre Island and Middle Eye with their cliff vegetation and maritime heathland and grassland; its assemblage of nationally scarce plants; its populations of sandhill rustic moth, a Red Data Book species of conservation concern; and its populations of diadromous fish, namely river lamprey, sea lamprey, and European smelt *Osmerus eperlanus*.
Gronant Dunes LNR	1.4 km west	No citation available. Covers same area as the western half of Gronant Dunes and Talacre Warren SSSI.

Table C.2 - Non-statutory designated sites and other designated sites within 2 km of the survey area

Site name	Distance and direction from red line boundary	Reasons for designation
Non-statutory designated sites		
Talacre Abbey and Woods WSF	500 m to the south-west	This site includes the overgrown abbey garden, marshy ponds and surrounding broadleaved woodland. The woodland canopy is dominated by sycamore *Acer pseudoplatanus* with some beech *Fagus sylvatica*, yew *Taxus baccata*, ash *Fraxinus excelsior* and sweet chestnut *Castanea sativa*. The understorey is diverse with wych elm *Ulmus glabra* and English elm *Ulmus procera* prevalent as well as many exotics in the gardens. Beneath these is a ground flora with abundant ivy *Hedera helix*, dog's mercury *Mercurialis perennis*, bluebell, hart's tongue fern *Asplenium scolopendrium*, soft shield fern *Polystichum setiferum* and great wood-rush *Luzula sylvatica*. The marshy pools contain species such as yellow iris *Iris pseudacorus*, great horsetail *Equisetum telmateia* and pendulous sedge *Carex pendula*. The site is subjected to vandalism and tipping. Designation Reason: Broadleaved woodland and scrub. Habitats: Broadleaved semi-natural woodland (21.5ha)
Tanlan Banks and Ffynnongroyw Woods WSF	1 km to the south-east	An elongated thin strip of broadleaved, ancient woodland along the terrace slopes of the Dee estuary. The canopy is variable in age and consists of mainly sycamore and ash, with some oak *Quercus* sp., beech and horse chestnut *Aesculus hippocastanum*. An often-dense understorey exists beneath the canopy, with wych elm, blackthorn *Prunus spinosa* and elder *Sambucus nigra* being most prevalent. The ground flora is diverse, and includes bluebell, giant fescue *Schedonorus giganteus*, wood speedwell *Veronica montana*, pendulous sedge, soft shield fern and giant horsetail.

Site name	Distance and direction from red line boundary	Reasons for designation
		Designation Reason: Broadleaved woodland and scrub. Habitats: Broadleaved semi-natural woodland (18.7ha).
Other designated sites		
Big Pool Wood NWWT reserve	1 km to the west	Big Pool Wood has a boardwalk and bird hide situated at a reed bed and woodland nature reserve. The ride edges of the woodland support abundant flowering bluebells *Hyacinthoides non-scripta* in spring and reed warblers *Acrocephalus scirpaceus* nest amongst the reed bed. In summer the locally rare giant bellflower *Campanula latifolia* grows amongst more typical woodland wildflowers. The site is part of the Dee Estuary SPA – a protected region that supports over 120,000 waterfowl and waders in the winter. Big Pool Wood both provides shelter and cover for some of these wetland birds and forms part of a wildlife corridor that stretches along the coast all the way to Anglesey; particularly important for migrating birds of all kinds.
Dee Estuary RSPB Reserve	1.2 km to the east	Wheatears, wagtails, warblers and pale-bellied brent geese *Branta bernicla hrota* all visit this site which is a mix of beach, sand dune, shingle and saltmarsh at different times of year, forming a mosaic of naturally-formed coastal habitats. There is a short nature trail along the sea wall, looking out to the saltmarsh with a nearby hide. The reserve is managed to create the ideal conditions for wildlife, by allowing the natural coastal processes, but the shingle ridge is protected with an electric fence during the bird breeding season to reduce disturbance from mammals and humans. This gives little terns, ringed plover and oystercatchers the best chance of nesting. In autumn and winter, a rope fence protects the same area, while

Site name	Distance and direction from red line boundary	Reasons for designation
		volunteer wardens patrol around high tides to protect wader roosts from disturbance.

Table C.3 – Dune slacks H6.4 / Humid dune slacks s3a3

Latin name	English name	DAFOR*
Vascular plants		
Agrostis stolonifera	Creeping Bent	F
Angelica sylvestris	Wild Angelica	R
Betula pendula	Silver Birch	R
Carex arenaria	Sand Sedge	O
Carex flacca	Glaucous Sedge	F
Chamaenerion angustifolium	Rosebay willowherb	R
Cirsium palustre	Marsh Thistle	R
Crataegus monogyna	Hawthorn	R
Dactylorhiza sp.	a Marsh-orchid species	R
Equisetum palustre	Marsh Horsetail	F
Festuca rubra	Red Fescue	R
Galium palustre	Marsh Bedstraw	R
Holcus lanatus	Yorkshire-fog	R
Hydrocotyle vulgaris	Marsh Pennywort	R
Juncus articulatus	Jointed Rush	O
Juncus effusus	Soft Rush	R
Juncus maritimus	Sea Rush	F
Lotus pedunculatus	Greater Bird's-foot Trefoil	R
Mentha aquatica	Water Mint	O
Plantago lanceolata	Ribwort Plantain	R
Populus sp.	a Poplar species	R
Potentilla anserina	Silverweed	R
Potentilla reptans	Creeping Cinquefoil	R

Latin name	English name	DAFOR*
Prunella vulgaris	Selfheal	O
Ranunculus flammula	Lesser Spearwort	O
Ranunculus repens	Creeping Buttercup	R
Sagina nodosa	Knotted Pearlwort	O
Salix cinerea	Grey Willow	R
Salix repens	Creeping Willow	A
Samolus valerandi	Brookweed	F
Bryophytes		
Aneura pinguis	Greasewort	R
Bryum pseudotriquetrum	Marsh Bryum	F
Calliergonella cuspidata	Pointed Spear-moss	A
Campylium stellatum	Yellow Starry Feather-moss	O
Dicranella varia	Variable Forklet-moss	R

*DAFOR: D-Dominant, A-Abundant, F-Frequent, O-Occasional, R-Rare

Table C.4 – Open dune H6.8 / Shifting dunes with marram s3a6

Latin name	English name	DAFOR*
Vascular plants		
Acer pseudoplatanus	Sycamore	O
Aira praecox	Early Hair-grass	R
Ammophila arenaria	Marram Grass	D
Bellis perennis	Common Daisy	R
Carlina vulgaris	Carline Thistle	R
Cerastium fontanum	Common Mouse-ear	O
Cerastium tomentosum	Snow-in-summer	O
Clematis vitalba	Traveller's Joy	O
Crataegus monogyna	Hawthorn	F
Crocosmia x crocosmiiflora	Montbretia	R
Erodium cicutarium	Stork's-bill	O
Eryngium maritimum	Sea Holly	R
Euphorbia paralias	Sea Spurge	O
Festuca rubra	Red Fescue	F
Glechoma hederacea	Ground-ivy	O
Hedera helix	Ivy	R
Hyacinthoides hispanica	Spanish Bluebell	R
Hyacinthoides non-scripta	Bluebell	R
Hypochaeris radicata	Cat's-ear	F
Iris germanica	Bearded Iris	R
Jacobaea vulgaris	Common Ragwort	F
Kniphofia uvaria	Red Hot Poker	R
Ligustrum vulgare	Wild Privet	R
Lupinus polyphyllus	Garden Lupin	R

Latin name	English name	DAFOR*
Luzula campestris	Field Woodrush	O
Myosotis ramosissima	Early Forget-me-not	R
Oenothera biennis	Evening Primrose	O
Ononis repens	Common Rest-harrow	R
Pilosella officinarum	Mouse-ear Hawkweed	R
Plantago lanceolata	Ribwort Plantain	R
Polypodium sp.	a Polypody Fern	F
Populus sp.	A Poplar species	R
Potentilla reptans	Cinquefoil Creeping	R
Ribes sanguineum	Flowering Currant	R
Rubus fruticosus agg.	Bramble	R
Rumex crispus	Curled Dock	O
Ruscus aculeatus	Butcher's Broom	R
Senecio vulgaris	Groundsel	R
Solidago canadensis	Canadian Goldenrod	R
Sonchus oleraceus	Common Sow-thistle	R
Symphoricarpos albus	Snowberry	O
Syringa vulgaris	Lilac	O
Taraxacum sp.	Dandelion	F
Taxus baccata	Yew	R
Urtica dioica	Common Nettle	R
Valerianella locusta	Common Cornsalad	R
Vicia cracca	Tufted Vetch	O
Viola riviniana	Common Dog-violet	O
Bryophytes / Lichens		

Latin name	English name	DAFOR*
Brachythecium albicans	Whitish Feather-moss	O
Brachythecium rutabulum	Rough-stalked Feather-moss	R
Hypnum lacunosum	Great Plait-moss	O
Kindbergia praelonga	Common Feather-moss	R
Peltigera sp.	a Dog Lichen	O
Pseudoscleropidium purum	Neat Feather-moss	O
Rhytidiadelphus squarrosus	Springy Turf-moss	R
Syntrichia ruraliformis	Sand-hill Screw-moss	O

*DAFOR: D-Dominant, A-Abundant, F-Frequent, O-Occasional, R-Rare

Species in yellow are INNS but not listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

Species in red are INNS listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

Table C.5 – Dune grassland H6.5 / s3a7

Latin name	English name	DAFOR*
Vascular plants		
Ammophila arenaria	Marram Grass	R
Agrostis capillaris	Common Bent	A
Anthoxanthum odoratum	Sweet Vernal-grass	O
Arrhenatherum elatius	False Oat-grass	O
Bellis perennis	Silverweed	R
Betula pendula	Silver Birch	R
Capsella bursa-pastoris	Shepherd's-purse	R
Carex arenaria	Sand Sedge	O
Carex flacca	Glaucous Sedge	F
Chamaenerion angustifolium	Rosebay Willowherb	O
Cynosurus cristatus	Crested Dogs' tail	O
Dactylorhiza sp.	a Marsh-orchid	R
Dactylis glomerata	Cock's-foot	O
Festuca rubra	Red Fescue	A
Galium verum	Ladies' Bedstraw	O
Geranium molle	Dove's-foot Cranesbill	O
Glechoma hederacea	Ground-ivy	R
Heracleum sphondylium	Hogweed	R
Holcus lanatus	Yorkshire-fog	F
Hyacinthoides hispanica	Spanish Bluebell	R
Hypochaeris radicata	Common Cats-ear	F
Juncus effusus	Soft Rush	R
Juncus inflexus	Hard Rush	R
Lathyrus pratensis	Meadow Vetchling	O

Latin name	English name	DAFOR*
Leontodon hispidus	Rough Hawkbit	R
Linum catharticum	Fairy Flax	R
Lolium perenne	Perennial Rye-grass	O
Lotus corniculatus	Common Bird's-foot Trefoil	O
Luzula campestris	Field Wood-rush	O
Oenothera biennis	Evening Primrose	F
Ononis repens	Common Rest-harrow	F
Poa pratensis	Smooth Meadow-grass	O
Polypodium sp.	a Polypody Fern	R
Pilosella officinarum	Mouse-ear Hawkweed	O
Plantago lanceolata	Ribwort Plantain	F
Plantago media	Hoary Plantain	F
Potentilla anserina	Silver Weed	O
Potentilla reptans	Cinquefoil Creeping	F
Prunella vulgaris	Selfheal	F
Ranunculus acris	Meadow Buttercup	O
Rubus fruticosus agg.	Bramble	O
Rumex acetosa	Common Sorrell	R
Salix cinerea	Grey Willow	R
Silene dioica	Red Campion	R
Solidago canadensis	Canadian Goldenrod	R
Taraxacum officinale agg.	Dandelion	O
Trifolium repens	White Clover	F
Trifolium pratense	Red Clover	O
Urtica dioica	Common Nettle	R

Latin name	English name	DAFOR*
Vicia cracca	Tufted Vetch	O
Viola riviniana	Common Dog-violet	R
Bryophytes / Lichens		
Aulacomnium palustre	Bog Groove-moss	R
Brachythecium albicans	Whitish Feather-moss	O
Brachythecium rutabulum	Rough-stalked Feather-moss	F
Bryum pseudotriquetrum	Marsh Bryum	R
Dicranum scoparium	Broom Fork-moss	R
Homalothecium lutescens	Yellow Feather-moss	O
Hypnum lacunosum	Great Plait-moss	R
Kindbergia praelonga	Common Feather-moss	F
Peltigera sp.	a Dog Lichen	O
Pseudoscleropidium purum	Neat Feather-moss	R
Rhytidiadelphus squarrosus	Springy Turf-moss	F

*DAFOR: D-Dominant, A-Abundant, F-Frequent, O-Occasional, R-Rare

Species in yellow are INNS but not listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

Table C.6 – Improved grassland B4 / Modified grassland g4

Latin name	English name	DAFOR*
Vascular plants		
Agrostis capillaris	Common Bent	O
Agrostis stolonifera	Creeping Bent	R
Cerastium fontanum	Common Mouse-ear	R
Cirsium arvense	Creeping Thistle	R
Holcus lanatus	Yorkshire-fog	O
Lolium perenne	Perennial Rye-grass	A
Rubus fruticosus agg.	Bramble	R
Rumex acetosa	Common Sorrell	O
Rumex obtusifolius	Broadleaved Dock	O
Taraxacum officinale agg.	Dandelion	R
Trifolium repens	White Clover	F
Urtica dioica	Common Nettle	O
Bryophytes		
Brachythecium rutabulum	Rough-stalked Feather-moss	R
Rhytidiadelphus squarrosus	Springy Turf-moss	O

Table C.7 – Dense/continuous scrub A2.1 / Mixed scrub h3

Latin name	English name	DAFOR*
Acer pseudoplatanus	Sycamore	F
Alnus glutinosa	Alder	O
Angelica sylvestris	Wild Angelica	R
Arum maculatum	Lords-and-ladies	R
Betula pendula	Silver Birch	O
Cirsium vulgare	Spear Thistle	R
Crataegus monogyna	Hawthorn	F
Dryopteris filix-mas	Male-fern	R
Galium aparine	Cleavers	R
Geranium robertianum	Herb-robert	R
Hedera helix	Ivy	O
Iris pseudacorus	Yellow Iris	R
Juncus effusus	Soft Rush	R
Phragmites australis	Common Reed	R
Quercus robur	Pedunculate Oak	O
Rosa sp.	a Rose species	R
Rubus fruticosus agg.	Bramble	A
Rumex sanguineus	Wood Dock	R
Salix caprea	Goat Willow	O
Salix cinerea	Grey Willow	F
Silene dioica	Red Campion	R
Urtica dioica	Common Nettle	O

Annex D

OUTLINE ARBORICULTURE METHOD STATEMENT

This Outline AMS describes arboricultural protection measures to protect retained trees as part of the Proposed Development. An AMS is a dynamic document that shall be reviewed prior to the issuing of any tender documentation. It shall be revised to accommodate any design amendments or known construction methodologies and must be read in conjunction with the Tree Protection Plan submitted for the Consented Development.

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural supervision. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

An Arboricultural Clerk of Works (ACoW) shall be appointed to oversee the tree protection during the enabling and construction phases.

The role of the ACoW is to:

- Advise the client and principal contractor on tree protection issues;
- Attend site as required to advise on variations;
- Supervise works undertaken within construction exclusion zones (CEZ); and
- Inspect and report on the status of tree protection measures in place during the construction phase.

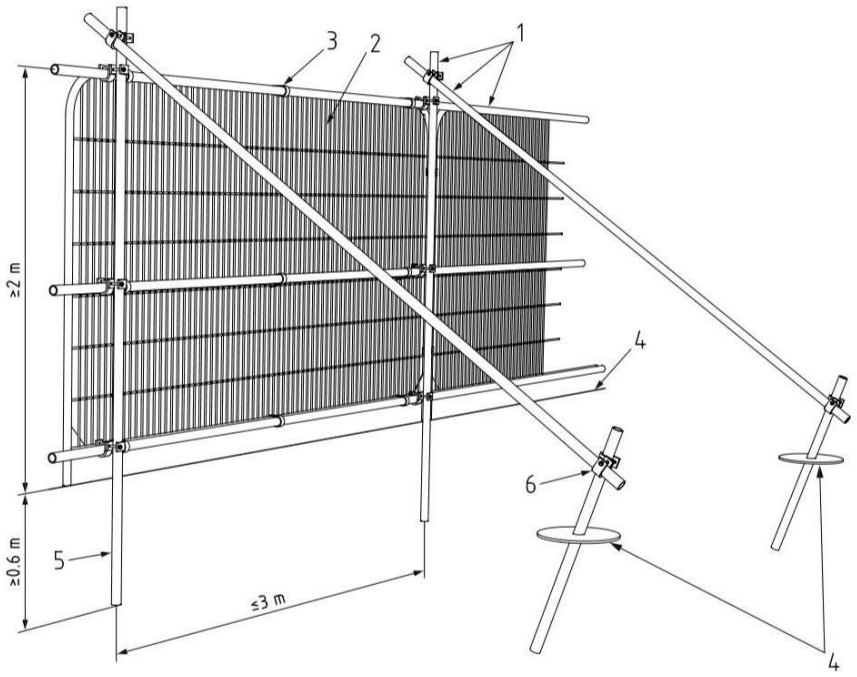
The ACoW shall attend site:

- Prior to commencement of works to ensure tree protection fencing is in place; and
- Periodically during the construction phase.

Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place.

Tree protection fencing will be used to prevent access to the root protection areas (RPAs) of retained trees and this will form the construction exclusion zone and should be erected prior to works on site.

An example of the type of tree protection fencing which may be required is included in Figure D.1.



Key:

1. Standard scaffold poles
2. Heavy gauge 2 m tall galvanised tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6 m)
6. Standard scaffold clamps

Figure D.1- Example of appropriate tree protection fencing