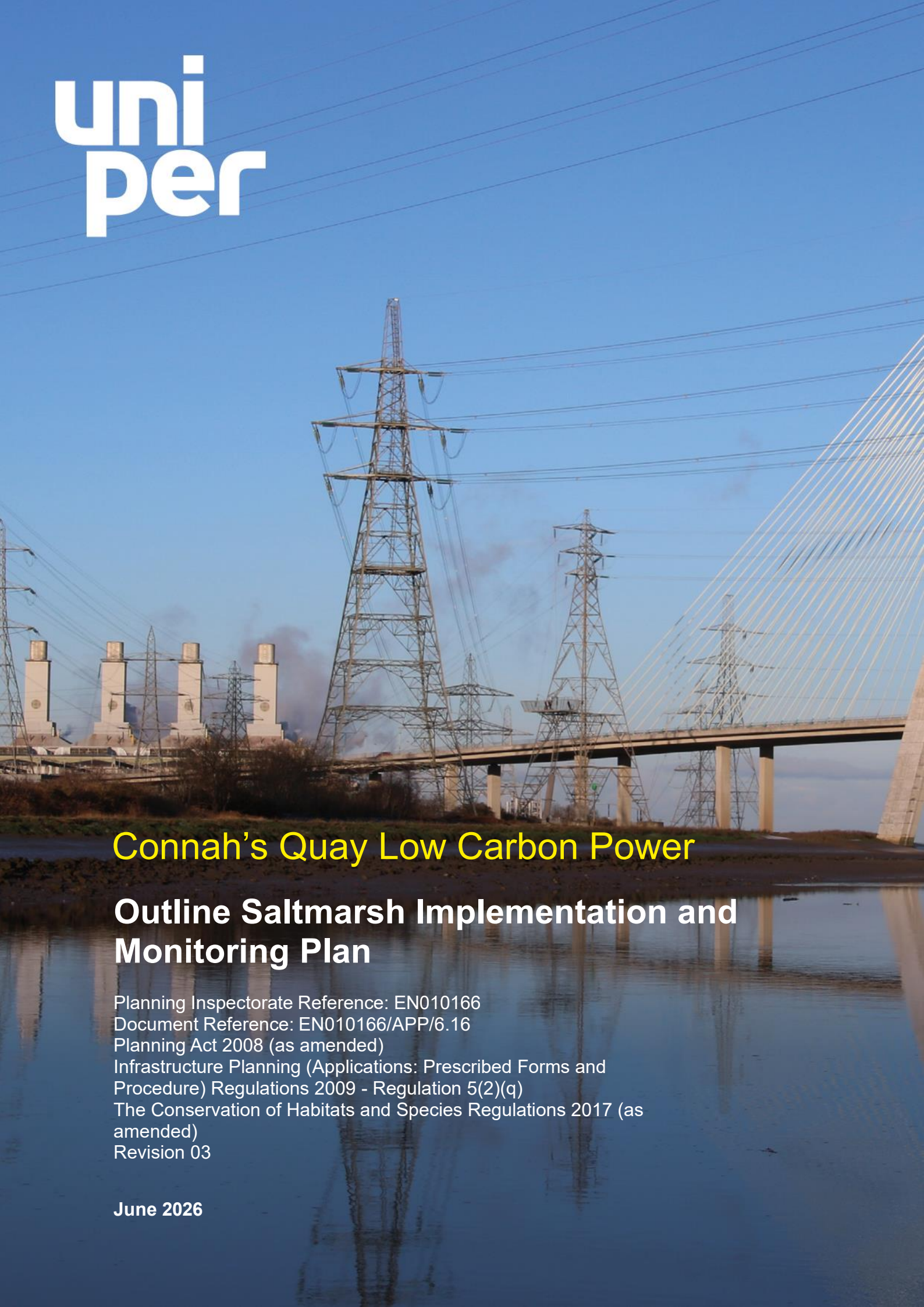

Connah's Quay Low Carbon Power

Outline Saltmarsh Implementation and Monitoring Plan

Planning Inspectorate Reference: EN010166
Document Reference: EN010166/APP/6.16
Planning Act 2008 (as amended)
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(q)
The Conservation of Habitats and Species Regulations 2017 (as amended)
Revision 03

June 2026

Prepared for:
Uniper UK Limited

Prepared by:
AECOM Limited

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Plates

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1. Introduction

1.1 Overview

1.1.1 This Outline Saltmarsh Implementation and Monitoring Plan (hereafter referred to as the Plan) provides details of the offsetting measures for loss of saltmarsh associated with the Dee Estuary / Aber Special Area of Conservation (SAC) / Special Protection Area (SPA) / Ramsar site. These offsetting measures are required to address the permanent loss of saltmarsh within the Order limits (and more specifically the Surface Water Outfall Area) associated with the creation of a new headwall.

1.1.2 A Saltmarsh Implementation and Monitoring Plan, prepared in general accordance with this Plan, would be submitted to the relevant discharging authority if it is confirmed through the detailed drainage design that the Proposed Surface Water Outfall (Work No. 5) is required. In the event that the Proposed Surface Water Outfall (Work No. 5) is not required, the measures outlined in this Plan would not be implemented because the effects being mitigated would not arise.

1.1.3 This Plan provides details of the location of an area of land within the Order limits where a series of earthworks and land management actions are required to create suitable conditions to allow an existing area of saltmarsh to naturally retreat inland, rather than being progressively lost to sea level rise, as would otherwise occur. The proposals in this Plan do not duplicate or conflict with anything proposed in the Shoreline Management Plan (SMP) (Ref 1) for this frontage.

1.2 Structure of the Plan

1.2.1 The remainder of the Plan is structured as follows:

- Section 2 sets out:
  - the aims and objectives of the Plan;
  - details of the existing saltmarsh communities that need to establish; and
  - details how the proposed measures would provide optimal conditions.
- Section 3 sets out:
  - information on the consideration of suitable mitigation locations;
  - details on why the sites are ecologically suitable for the proposed mitigation; and
  - details regarding access.
- Section 4 sets out:
  - the location and context of the Order limits; and
  - summarises baseline surveys undertaken to date.
- Section 5 sets out:

  - an implementation timetable and programme;
- Section 6 sets out:
  - the surveys required to inform the design of the Saltmarsh Creation Area;
  - the approach to defining the final Saltmarsh Creation area; and
  - outlines the two design options which will be considered further at the detailed design stage and notes that detailed cross-sections will be provided for the confirmed design.
- Section 7 sets out:
  - management and maintenance activities;
  - methodologies for post-implementation monitoring;
  - details of biosecurity measures; and
  - details of the success criteria, including thresholds for determining success and the trigger thresholds for adaptive management measures.
- Section 8 sets out:
  - details of the Saltmarsh Steering Group.
- Appendix A identifies:
  - other relevant consents, licenses and agreements required for baseline surveys that fall outside of the Order limits.

1.2.2 This document should be read in conjunction with the latest version of the **Report to Inform Habitats Regulations Assessment (HRA)** (**EN010166/APP/6.12**), **Notice of a proposed without prejudice HRA derogation in Wales (EN010166/APP/9.2)**, **Green Infrastructure Statement** (**EN010166/APP/6.11**) and **Chapter 11: Terrestrial and Aquatic Ecology** (**EN010166/APP/6.2.11**) of the Environmental Statement (ES).

1.2.3 The measures set out in this document are secured via Part 2 of Schedule 16 of the **Draft Development Consent Order** (**DCO**) (**EN010166/APP/3.1**). Part 2 of Schedule 16 identifies that a Saltmarsh Implementation and Monitoring Plan must be developed by the undertaker in general accordance with this Plan. This will include an implementation timetable demonstrating how and when the managed retreat will be created before any loss of saltmarsh, and a management and monitoring programme to ensure the retreat will be effective at meeting the aims and objectives of the plan.

1.3 The Proposed Development

1.3.1 Uniper UK Limited (the Applicant) is seeking a DCO for the construction, operation (including maintenance) and decommissioning of a proposed low carbon Combined Cycle Gas Turbine (CCGT) Generating Station fitted with Carbon Capture Plant (CCP) (the Connah's Quay Low Carbon Power (CQLCP) Abated Generating Station) and supporting infrastructure (collectively the Proposed Development).

1.3.2 The CQLCP Abated Generating Station would comprise up to two CCGT with CCP units (and supporting infrastructure) achieving a net electrical output

capacity of more than 350 megawatts (MW; referred to as MWe for electrical output) and up to a likely maximum of 1,380 MWe (with CCP operational) onto the national electricity transmission network.

1.3.3 Through a carbon dioxide (CO_2) pipeline, comprising existing and new elements the Proposed Development would make use of CO_2 transport and storage networks owned and operated by Liverpool Bay CCS Limited, currently under development as part of the HyNet Carbon Dioxide Pipeline project (referred to as the HyNet CO_2 Pipeline Project), that will transport CO_2 captured from existing and new industries in North Wales and North West England, for offshore storage. The captured CO_2 would be permanently stored in depleted offshore gas reservoirs in Liverpool Bay.

1.3.4 For the purposes of the electrical connection, National Grid Electricity Transmission plc (NGET), which builds and maintains the electricity transmission networks, is responsible for the operation and maintenance of the existing 400 kV NGET Substation.

1.3.5 A description of the Proposed Development, including details of maximum parameters, is set out in **Chapter 4: The Proposed Development** (**EN010166/APP/6.2.4**) of the **ES**. At this stage in the development, the design of the Proposed Development incorporates a necessary degree of flexibility to allow for ongoing design development.

1.4 Legislative Context

1.4.1 As part of the assessment of a development, it is necessary to consider whether the development is likely to have a significant effect on areas that have been internationally designated for nature conservation purposes (i.e., European Sites). European sites are protected under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations). The United Kingdom (UK) left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 (the Withdrawal Act).

1.4.2 However, the most recent amendments to the Habitats Regulations – the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (2019 Regulations) – make it clear that the need for HRA continues to apply. Whilst those 2019 Regulations make changes to the Habitats regime and terminology; much of the impact of those changes does not yet have a practical effect, particularly the introduction of the term 'national site network', given the short passage of time since the end of the transition period. As such, this document continues to use the term 'European sites' to refer to all Natura 2000 (National Site Network) sites potentially affected by the Proposed Development.

1.4.3 A detailed **Report to Inform Habitats Regulations Assessment** (**EN010166/APP/6.12**) has been prepared. A without prejudice **Derogations Report (EN010166/APP/9.2)** has also been submitted into the Examination.

2. Aim and Objectives

2.1 Need

2.1.1 This Outline Saltmarsh Implementation and Monitoring Plan has been prepared to address the permanent loss of saltmarsh within the Order limits (and more specifically the Surface Water Outfall Area) associated with the creation of a new headwall. Should it be determined that Proposed Surface Water Outfall is not required as part of the drainage strategy, a Saltmarsh Implementation and Mitigation Plan will not be required because the effects being mitigated by such plan would not arise and the measures are not needed to address operational air quality impacts (mitigation has been identified for air quality impacts in the form of a financial payment to Flintshire County Council to address any additional saltmarsh management requirements that may arise from the elevated nitrogen deposition due to the Proposed Development).

Saltmarsh Habitat Loss

2.1.2 As summarised in the **Outline Surface Water Drainage Strategy (EN010166/APP/6.4)** consideration has been given to implementing a drainage design that would not result in the loss of saltmarsh within the Dee Estuary SAC. At this stage of design, it is not possible to confirm a solution that would achieve no loss of saltmarsh and, therefore, as a worst case, the **RIHRA** (**EN010166/APP/6.12**) considers the permanent loss of 5 m^2 and a temporary loss of 650 m^2 of saltmarsh. The Applicant is committed to further exploring the alternative drainage solutions outlined within the **Outline Surface Water Drainage Strategy (EN010166/APP/6.3)** throughout the detailed design process.

2.1.3 In defining an adequate area for offsetting, the Applicant is only required to achieve a no net loss in saltmarsh and, therefore, the identified area provides more than adequate provision for this.

2.2 Objective

2.2.1 The offsetting objective is to ensure no overall loss of saltmarsh habitat within the Dee Estuary / Aber Dyfrdwy SAC / SPA / Ramsar site as a result of the Proposed Development by allowing natural coastal processes to resume south of the existing Connah's Quay Power Station along a currently defended frontage and in an area not otherwise proposed for managed realignment as part of other strategies. This will allow part of the area known as Station Saltings to retreat inland as sea levels rise.

2.2.2 The Station Saltings comprises a flat expanse of saltmarsh, saltpans, creeks and mudflats at the level of the estuary foreshore, approximately 2-3 metres below the level of the land lying immediately to the west (where the retreat area will be created), and above the adjacent intertidal flats. The vegetation in this area has changed little since management was first introduced. Previous NVC surveys have indicated a small amount of SM28 *Elymus repens* saltmarsh community to be present at the eastern end of the compartment with the majority of the area occupied by SM13 *Puccinellia maritima* saltmarsh. The communities are typically species-poor, with wild celery *Apium*

graveolens in the SM28 vegetation and hard-grass *Parapholis strigosa* in SM13a vegetation being probably the most interesting records.

2.2.3 Since the habitat within the location of the new outfall is species-poor grass-dominated saltmarsh (SM28 *Elytrigia repens* dominated grassland) the specific purpose of the retreat will be to ensure this, or a more diverse saltmarsh community, are established. The works to create the retreat will take place prior to any loss of saltmarsh due to construction of the new outfall, although the actual process of saltmarsh development in the retreat area will be incremental over several years.

2.2.4 The Saltmarsh Implementation and Monitoring Plan will be effective at meeting the aims and objectives identified in this Strategy provided the retreat has been created and the conditions for saltmarsh expansion have been created prior to the outfall works being commenced. That will be sufficient to enable the construction of the outfall to commence.

2.2.5 This will ensure compliance with the most relevant conservation objectives of the Dee Estuary / Aber Dyfrdwy SAC as expressed in the European Marine Site Regulation 33 Report (Ref 4):

- the aggregate total extent of all estuarine communities within the site is maintained;
- the spatial distribution of estuarine communities within the site is maintained;
- the total extent of Atlantic salt meadow vegetation communities within the site is maintained;
- the proportions of individual Atlantic salt meadow vegetation communities within the site are maintained;
- the zonation of Atlantic salt meadow vegetation communities and their transitions to fresh water and terrestrial vegetation are maintained; and
- the morphology of saltmarsh creeks and pans and the process of their evolution are maintained.

2.3 Target Species

2.3.1 Target species will be representative of pioneer saltmarsh (1310 *Salicornia* and other annuals colonizing mud and sand) maturing to Atlantic salt meadow (1330 Atlantic salt meadows) (such as presence of key species, absence of undesirable species, and suitable substrate and wetness conditions) in the long term.

2.3.2 Pioneer saltmarsh is represented by the following National Vegetation Classification (NVC) communities:

- SM7 *Arthrocnemum perenne* stands;
- SM8 *Annual Salicornia* salt-marsh community;
- SM9 *Suaeda maritima* salt-marsh community; and
- SM27 Ephemeral salt-marsh vegetation with *Sagina maritima.*

2.3.3 Atlantic salt meadow is represented by the following NVC communities:

- SM10 Transitional low-marsh vegetation;
- SM11 *Aster tripolium var. discoideus* salt-marsh community;
- SM12 *Rayed Aster tripolium* salt-marsh community;
- SM13 *Puccinellia maritima* salt-marsh community;
- SM14 *Halimione portulacoides* saltmarsh community;
- SM15 *Juncus maritimus – Triglochin maritima* salt-marsh community;
- SM16 *Festuca rubra* salt-marsh community (coastal examples only);
- SM17 *Artemisia maritima* salt-marsh community;
- SM18 *Juncus maritimus* salt-marsh community;
- SM19 *Blysmus rufus* salt-marsh community; and
- SM20 *Eleocharis uniglumis* salt-marsh community.

2.3.4 A specific target species list of indicators of adequate saltmarsh development will be developed and agreed with Saltmarsh Steering Group for the detailed Saltmarsh Implementation and Monitoring Plan but it is likely to be based on JNCC Common Standards Monitoring guidance for saltmarsh (Ref 5) and particularly the parameters and species lists in Table 1 and Box 1 on pages 19 and 20 of the document.

2.3.5 Typical indicator species drawn from this guidance are expected to include, but are not limited to:

- *Salicornia* spp.*;*
- *Suaeda maritima;*
- *Spartina anglica;*
- *Atriplex* spp.*;*
- *Puccinellia maritima;*
- *Aster tripolium;*
- *Plantago maritima;*
- *Triglochin maritima;*
- *Festuca rubra;*
- *Juncus gerardii;*
- *Halimione portulacoides;*
- *Limonium vulgare;*
- *Glaux maritima;* and
- *Parapholis strigosa.*

3. Identifying Location for Saltmarsh Creation

3.1 Introduction

3.1.1 This section sets out the approach taken to identify a suitable location for saltmarsh creation. The selection process has considered ecological suitability, including tidal regime and connectivity with existing habitats, alongside technical and practical constraints such as land availability and existing infrastructure.

3.2 Saltmarsh Creation Area

3.2.1 The Applicant has given consideration to potential areas of habitat creation to offset the 5 m^2 permanent loss, and 650 m^2 of temporary loss of saltmarsh associated with the construction and physical presence of the Proposed Surface Water Outfall. This has included consideration of the following:

- land ownership;
- The SMP (Ref 1); and
- technical constraints (such as location of buried services).

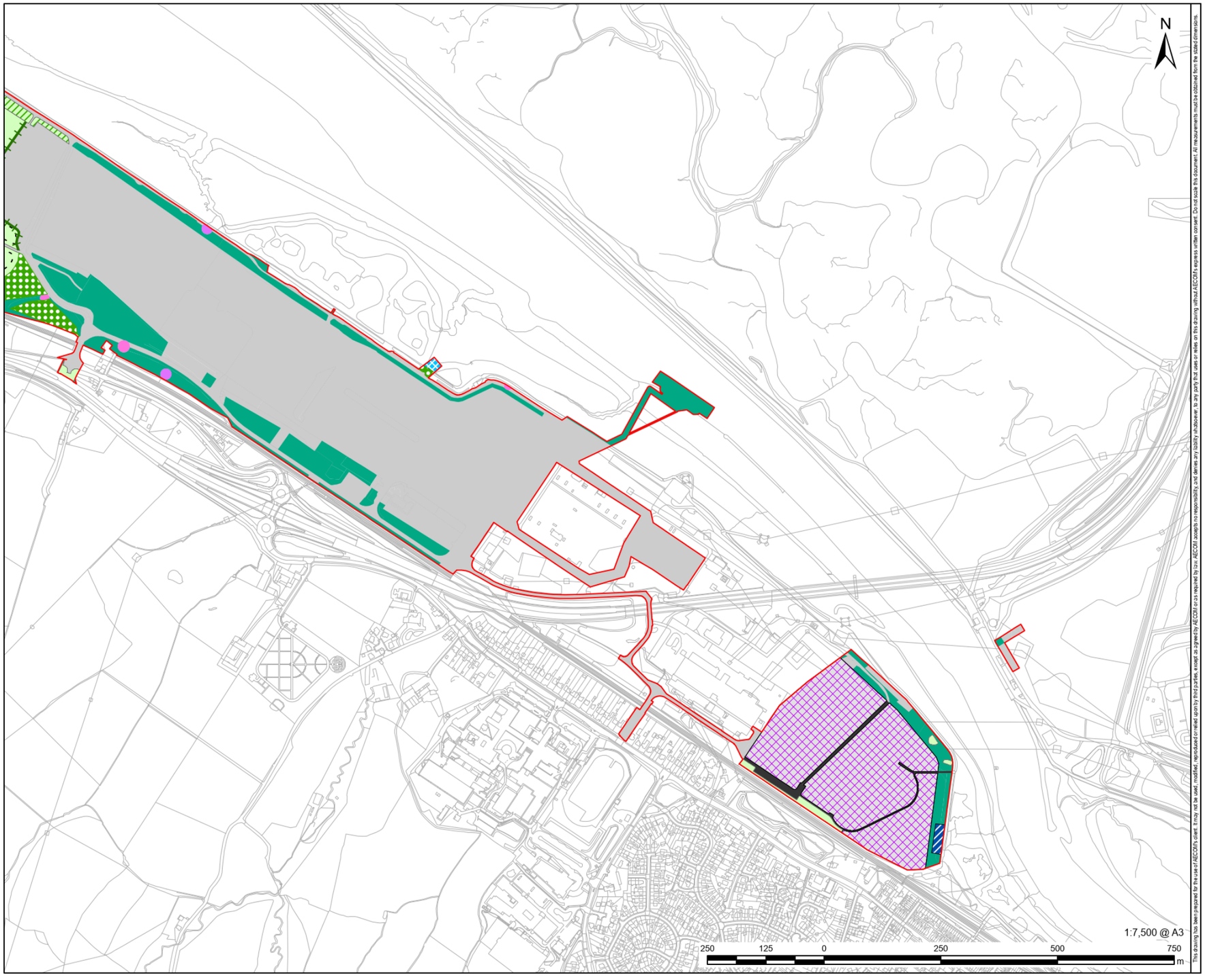
3.2.2 The Applicant has identified potential for saltmarsh creation within the Construction and Indicative Enhancement Area (C&IEA), noting its proximity to existing areas of saltmarsh. An area around the eastern and northern perimeter of the C&IEA has been identified as an ecological safeguarding zone, excluded from use as a temporary laydown area. The area is also noted within the SMP as 'hold the line'. All areas of this ecological safeguarding zone have been considered for their suitability for saltmarsh creation.

3.2.3 The northern perimeter of the C&IEA was not deemed suitable noting the unregistered asbestos tip and the presence of 400kV pylons and, therefore, the eastern perimeter was favoured.

3.2.4 The preference for the saltmarsh creation was to provide this as far north as possible. However, due to the presence of below ground infrastructure it was deemed not viable as excavation would be required to lower the existing ground levels.

3.2.5 On this basis, the only remaining viable option is to create saltmarsh in the area to the south of these below ground cables. This area is shown indicatively in the Indicative Landscape Plan which is replicated in **Plate 1** and will evolve through design development, as outlined in **Section 5**. The final proposals will be outlined within the Saltmarsh Implementation and Monitoring Plan to be submitted in accordance with Part 2 of Schedule 16 of the **Draft DCO** (**EN010166/APP/3.1**).

Plate 1: Saltmarsh Creation Area (Outline Landscape and Ecology Management Plan (EN010166/APP/6.9))



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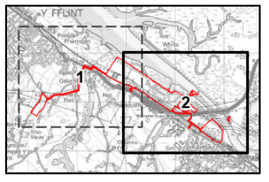
LEGEND

- Construction and Operation Area
- Operational Footprint / Hardstanding
- Retained Habitat - Not Affected by Development
- Retained Habitat - Ancient Tree Root Protection Area (RPA)
- Retained Habitat - Veteran Tree Root Protection Area (RPA)

Indicative Landscape Plan

- Species Rich Hedgerow
- Access Track / Hardstanding
- Grassland
- Grassland enhanced as species-rich, wildflower
- Hardstanding within Main Development Area
- Saltmarsh Habitat Creation
- Saltmarsh Habitat Reinstated
- Woodland
- Indicative Tree Planting Area



NOTES

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Outline Saltmarsh Implementation and Monitoring Plan

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FIGURE TITLE

Indicative Landscape Plan
Sheet 2 of 2

FIGURE NUMBER

Figure 1

Other enhancements

3.2.6 The Applicant has also considered opportunities to remove man-made features within their landholding and has identified the possibility to remove an area of hard standing equating to 5 m^2.

3.3 Suitability of the Location for Saltmarsh Creation

3.3.1 Under current circumstances, the saltmarsh within Conservation Area 3 of the Conservation Areas Management Plan (Ref 6) (known as Station Saltings, south-east of the existing Connah's Quay Power Station) will reduce in extent due to sea level rise and presence of the landward defences, resulting in coastal squeeze. By creating an inlet or relocating part of the existing defences inland and lowering the existing ground level, the saltmarsh would be able to naturally retreat. This would not avoid coastal squeeze altogether as that would require the removal of such defences, but it would substantially delay the rate of squeeze and the period at which any reduction in saltmarsh extent due to sea level rise would occur.

3.3.2 Subject to detailed design, the Saltmarsh Implementation and Monitoring Plan will detail how the coastal defences south-east of the existing Connah's Quay Power Station adjacent to Compartment 3 would be adapted to create a 1,300 m^2 area into which the saltmarsh in Conservation Area 3 can expand.

3.3.3 The Conservation Areas Management Plan indicates that between 2010 and the date of the Management Plan (2015) some previously exposed mud around Compartment 3 had been colonised by common saltmarsh grass (*Puccinella maritima*) indicating natural saltmarsh colonisation and extension can occur in this area if suitable conditions are created.

3.3.4 Creating an inlet, or setting back the embankment would reduce long-term losses of saltmarsh in the Dee Estuary due to coastal squeeze and thus ensure no net loss of grass dominated SM16 or SM28 saltmarsh in the Dee Estuary by enabling the saltmarsh in the existing area to expand landwards. Provided this is done before the existing area of saltmarsh is lost it would allow the saltmarsh (which would be a naturally shifting community without hard defences) to move naturally inland to a greater extent by managed realignment than the loss due to the new outfall and therefore avoid a net loss. It would, therefore, not conflict with the conservation objectives regarding extent or proportions.

3.4 Access to the Saltmarsh Creation Area

3.4.1 Access to the Saltmarsh Creation Area will be provided from Kelsterton Road through the Access to the C&IEA and the C&IEA itself. No access would be obtained from the existing areas of Saltmarsh to the east of the Saltmarsh Creation Area.

4. Baseline

4.1 Overview

4.1.1 This section provides an overview of the location of the relevant components of the Proposed Development and provides baseline information in relation to the relevant designated sites and saltmarsh features.

4.2 Location and Context

Location of the Proposed Development

4.2.1 The Order limits are located within Flintshire, Wales. **Figure 3-3: Areas identified in the ES** (**EN010166/APP/6.3**) provides an overview of the different components of the Proposed Development, within the Order limits, which are referenced throughout the Application. These comprise:

- The Construction and Operation Area:
  - Main Development Area;
  - C&IEA;
  - Water Connection Corridor;
  - Surface Water Outfall Area;
  - Proposed CO_2 Connection Corridor;
  - Repurposed CO_2 Connection Corridor;
  - Electrical Connection Corridor; and
  - Access to the Main Development Area.
- The Accommodation Work Areas.

4.2.2 The areas of relevance to this document are the C&IEA and the Surface Water Outfall Area.

4.3 Order Limit Context

Main Development Area

4.3.1 The Main Development Area is located on land at, and in the vicinity of, the existing Connah's Quay Power Station (Kelsterton Road, Connah's Quay, Flintshire, CH6 5SJ), North Wales.

4.3.2 The Main Development Area which has an indicative area of approximately 56.5 ha includes operational parts of the Applicant's existing Connah's Quay Power Station site to the south-east and agricultural fields to the north-west. It is these fields that are the focus of this document.

4.3.3 There are nine international and 30 national statutory designated sites within 15 km of the Main Development Area as shown on **Plate 2**. The Main Development Area is adjacent to the Dee Estuary /Aber Dyfrdwy SAC / SPA / Ramsar site.

Surface Water Outfall Area

4.3.4 The Surface Water Outfall Area is located adjacent to the northern extent of the Main Development Area, including and surrounding the existing artificial outfall for surface water drainage (the 'Existing Surface Water Outfall') from the existing Connah's Quay Power Station into the River Dee.

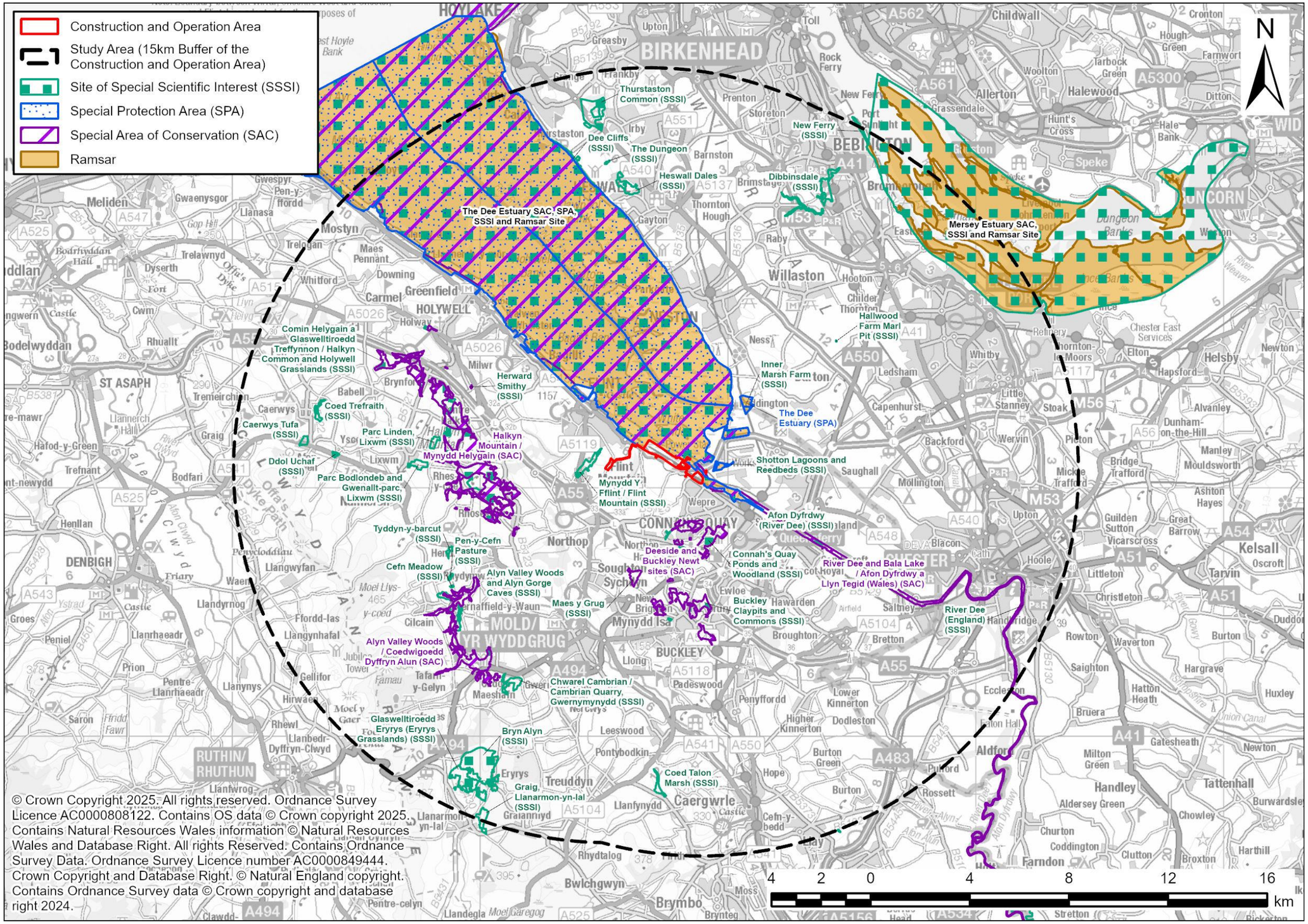
4.3.5 This area is a maximum of 650 m^2 in extent (this being the maximum potential temporary works footprint for the construction of the new outfall) and is located within the Dee Estuary /Aber Dyfrdwy SAC / SPA / Ramsar site.

C&IEA

4.3.6 The C&IEA is located north of the A548 (Flintshire Bridge), west and southwest of the Dee Estuary, north-east of the North Wales Main Line railway, and south-east of the NGET 400 kV Substation. The C&IEA is approximately 12.58 ha in area.

4.3.7 Existing land-use within the western and northern extents of the C&IEA comprises derelict hardstanding with scrub / grass vegetation regrowth, while the southern and eastern extents comprise open grassland with scattered shrubs and small trees. The divide between these two areas is partially indicated by a combination of a row of trees and one side of the footprint of the demolished Connah's Quay 'A' Power Station, which is recessed relative to ground level and itself also lined by vegetation. Two existing electrical pylons and a building foundation are located near to the eastern boundary of the C&IEA and a further existing electrical pylon is located on the southern border.

Plate 2: Designated Site



4.4 Baseline Surveys

National Vegetation Classification Survey

4.4.1 A National Vegetation Classification (NVC) survey of the saltmarsh within the Surface Water Outfall Area was surveyed as part of a wider NVC survey undertaken on 1st and 2nd July 2024 by two suitably experienced ecologists/ botanists. The survey followed the methodology outlined in the National Vegetation Classification Users' Handbook (Ref 2).

4.4.2 Analysis of the NVC survey data showed that the saltmarsh within the Surface Water Outfall Area to be representative of the SM28 *Elymus repens* saltmarsh community, as shown on **Plate 3**and **Plate 4**. This is a species-poor community and of relatively low sensitivity compared to other community types.

4.4.3 A small amount of SM16d *Festuca rubra* saltmarsh community - *Juncus gerardii* sub-community with tall *Festuca rubra* dominant is also present within the Surface Water Outfall Area. SM16d is a mid - upper marsh community and SM28 is a drift-line community.

4.4.4 An updated NVC survey of the Surface Water Outfall Area and adjacent areas will be undertaken between June and August 2026.

Plate 3: Saltmarsh within the location of the Proposed Surface Water Outfall. (Taken on 02/07/2024 using an Apple iPhone SE. Facing west towards the Existing Surface Water Outfall Structure)

UK Habitat Classification Survey

4.4.5 An initial site walkover of the Construction and Operation Area undertaken in November 2023 identified the proposed saltmarsh creation area, which is located within the Construction and Indicative Enhancement Area, to be

'Grassland – other neutral' **(Preliminary Environmental Information Report Volume IV, Appendix 11-C: Preliminary Ecological Appraisal).**

4.4.6 Following the initial site walkover surveys in 2023, all habitats within 50 m of the Construction and Operation Area were mapped and categorised in accordance with the UK Habitat (UKHab) classification (Ref 3). The survey was completed in June and October 2024 and classified the proposed saltmarsh creation area as *'other neutral grassland'* with a strip of bracken *Pteridium aquilinum* running along the eastern boundary.

4.4.7 The results of the Uk Hab survey results are shown in **Figure 11C-2 (EN010166/APP/6.3)**, which has been replicated as **Plate 6.**

4.5 Geomorphological Walkover Survey

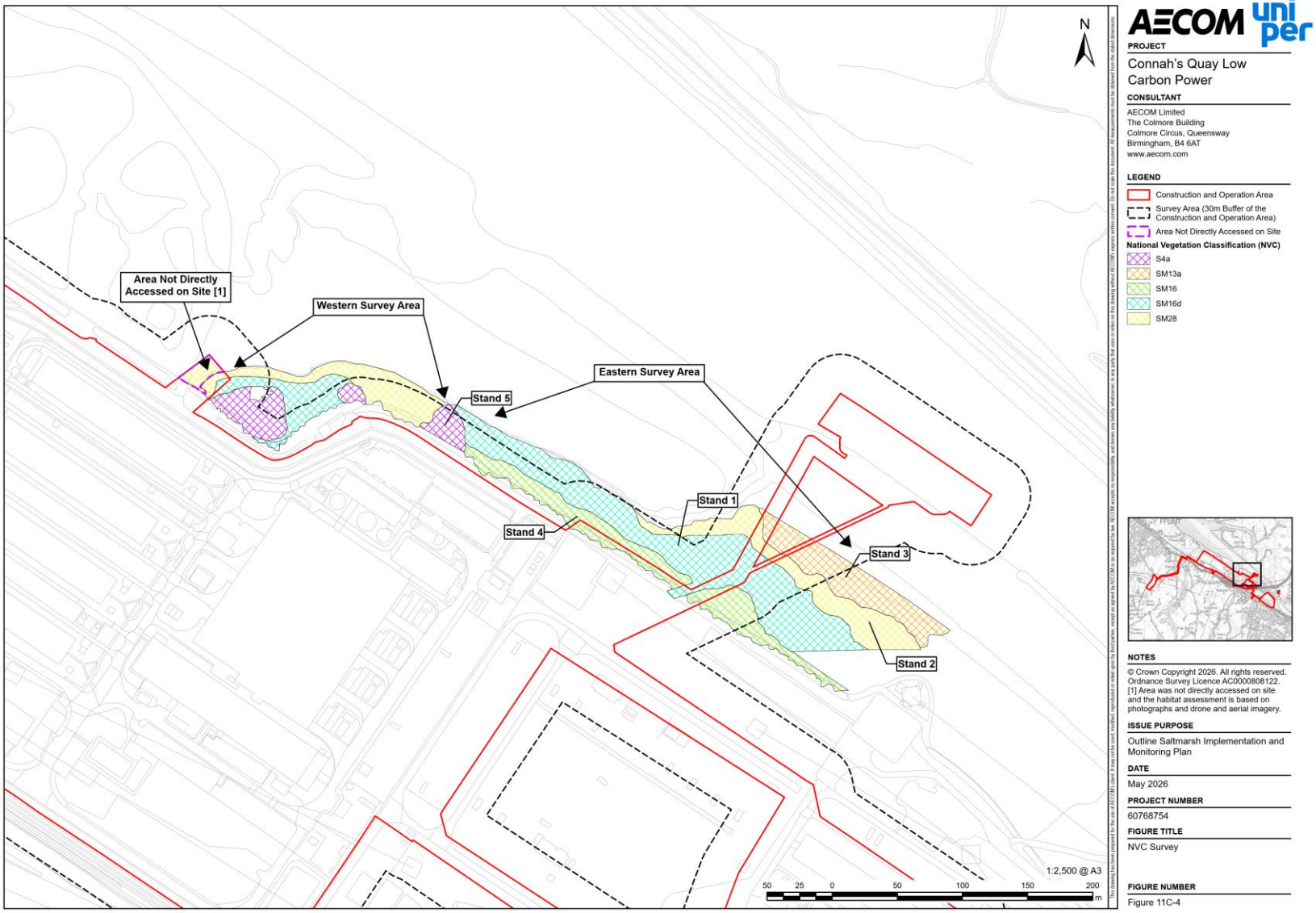
4.5.1 As detailed in the **Geomorphological Walkover Survey Report (EN010166/APP/9.12),** a geomorphological walkover survey was undertaken by a suitably qualified coastal geomorphologist on 23 January 2026 between the hours of 0900 and 1600.

4.5.2 The walkover survey was focused on the location of the proposed surface water outfall and the adjacent areas of saltmarsh habitat within the Connah's Quay Nature Reserve.

4.5.3 A photograph showing the existing Surface Water Outfall is included as **Plate 4** while a map showing the location is contained in **Plate 5**. These show species-poor saltmarsh habitat, consistent with the findings of the NVC survey (further details provided in **Appendix 11-C: Botany Technical Appendix (EN010166/APP/6.4)**) which are shown in **Figure11C-4 (EN010166/APP/6.3)**, replicated in **Plate 5**.

Plate 4: Saltmarsh within the location of the Proposed Surface Water Outfall (taken on 23/01/2026). Facing east away from the Existing Surface Water Outfall Structure)

Plate 5: 2024 NVC Survey (Figure 11C-4 (EN010166/APP/6.3))



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LEGEND
- Construction and Operation Area
- Survey Area (30m Buffer of the Construction and Operation Area)
- Area Not Directly Accessed on Site

National Vegetation Classification (NVC)
- S4a
- SM13a
- SM16
- SM16d
- SM28

NOTES

[1] Area was not directly accessed on site and the habitat assessment is based on photographs and drone and aerial imagery.

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Outline Saltmarsh Implementation and Monitoring Plan

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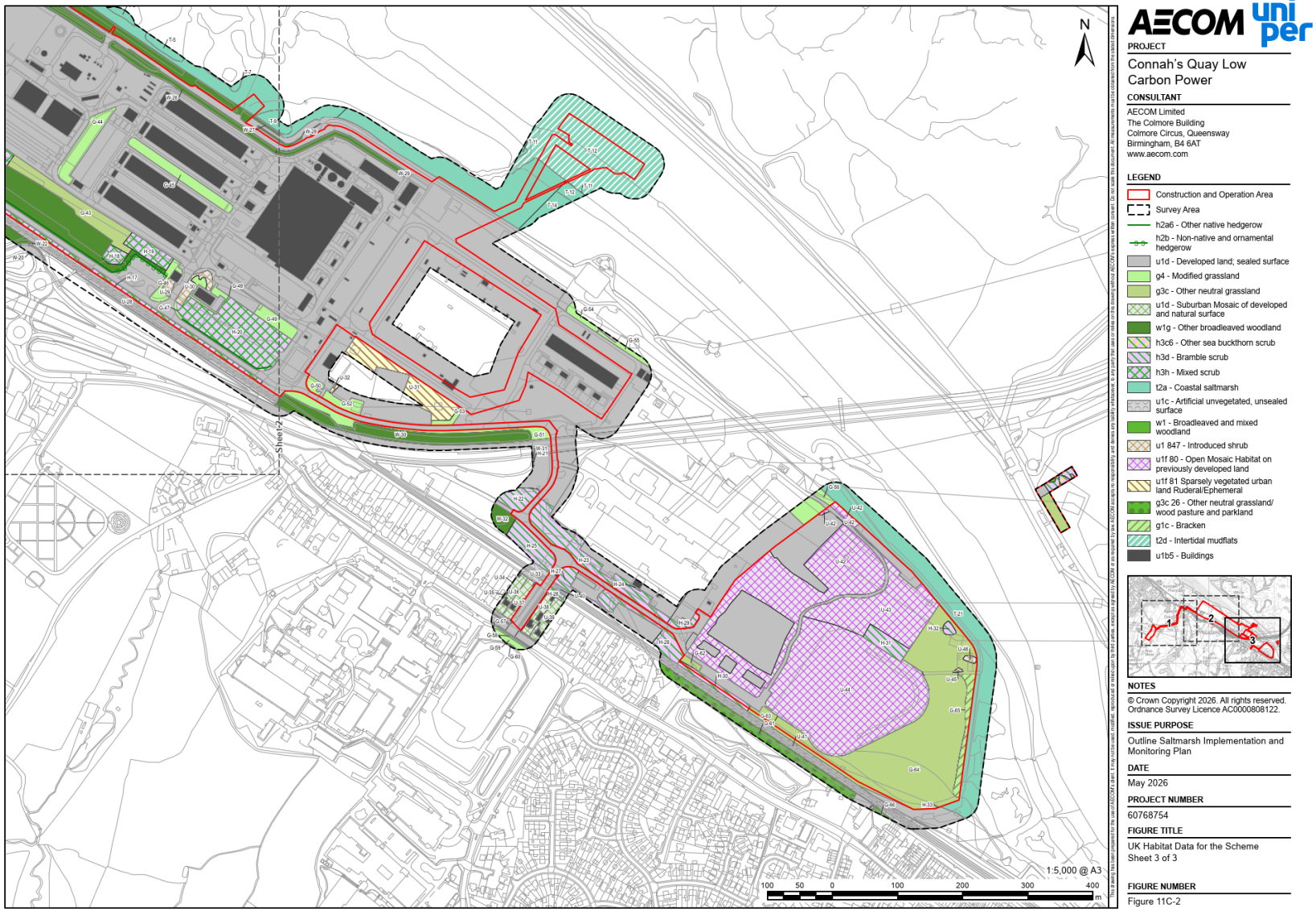
FIGURE TITLE
NVC Survey

FIGURE NUMBER
Figure 11C-4

Plate 6: UK Habitat Data (Figure 11C-2 (EN010166/APP/6.3))



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LEGEND
- Construction and Operation Area
- Survey Area
- h2a6 - Other native hedgerow
- h2b - Non-native and ornamental hedgerow
- u1d - Developed land; sealed surface
- g4 - Modified grassland
- g3c - Other neutral grassland
- u1d - Suburban Mosaic of developed and natural surface
- w1g - Other broadleaved woodland
- h3c6 - Other sea buckthorn scrub
- h3d - Bramble scrub
- h3h - Mixed scrub
- t2a - Coastal saltmarsh
- u1c - Artificial unvegetated, unsealed surface
- w1 - Broadleaved and mixed woodland
- u1 847 - Introduced shrub
- u1f 80 - Open Mosaic Habitat on previously developed land
- u1f 81 Sparsely vegetated urban land Ruderal/Ephemeral
- g3c 26 - Other neutral grassland/ wood pasture and parkland
- g1c - Bracken
- t2d - Intertidal mudflats
- u1b5 - Buildings

NOTES

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Outline Saltmarsh Implementation and Monitoring Plan

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FIGURE TITLE
UK Habitat Data for the Scheme
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FIGURE NUMBER
Figure 11C-2

5. Implementation Timetable and Programme

5.1.1 No stage of Work No. 5 may be commenced until the earthworks required to enable the retreat of saltmarsh have been completed.

5.1.2 The earthworks, or other enhancements, would be undertaken between the months of April to September (inclusive) in any given year to avoid the over-wintering season.

5.1.3 At this stage it is not possible to provide further detail on the indicative programme, however the Saltmarsh Implementation and Monitoring Plan will provide further information of the required activities.

5.1.4 Details of monitoring and management, including their timescales, are included in Section 7.

6. Design Development and Baseline Surveys

6.1 Overview

6.1.1 The section identifies the surveys required to inform the design development of the Saltmarsh Creation Area.

6.1.2 The Saltmarsh Creation Area along the south-eastern boundary of the C&IEA requires a high-resolution terrestrial survey to accurately map the area and the deployment of a tide gauge (pressure sensor) to resolve the tidal regime. It is critical when calculating the correct elevation of the Saltmarsh Creation Area that there are an accurate terrain model and coincident tidal levels. Saltmarsh only develops and maintains itself within a specific tidal range, usually between mean high water neap tides at the lowest level and the highest astronomical tide, and this range must be accurately determined.

6.2 Terrestrial Survey

6.2.1 The Yr Careg nature reserve is a complicated site in relation to elevation. Whilst the saltmarsh is mature, the variation in elevation across the nature reserve is subtle with only sharp relief associated with the minor creeks. The total elevation range of the saltmarsh from the mouth of creek 1 and the top of the seaward berm is 2.4 m and a total elevation range between creek 1 and the current surface elevation of the Saltmarsh Creation Area is 3.86 m.

6.2.2 Surveys are undertaken to prepare:

- A digital terrain model; and
- A digital surface model.

6.3 Tide Gauge

6.3.1 A tide gauge survey is proposed to characterise the tide levels within Creek 1 to aid the definition of suitable ground levels within the Saltmarsh Creation Area. The desired output from this survey will be a time-series of tide height reduced to Ordnance Datum Newlyn over a four to eight week period.

6.3.2 Further to this, an additional gauge would be installed over the same period to collect tidal current velocity data within Creek 1.

6.4 Final Saltmarsh Creation Area

6.4.1 Following the completion of the surveys outlined above, the final location of the Saltmarsh Creation Area would be determined and plans developed in discussion with Natural Resources Wales (NRW). The final saltmarsh creation area will be set out within the Saltmarsh Implementation and Monitoring Plan.

6.4.2 The Saltmarsh Implementation and Monitoring Plan must include details of:

- the amount of sediment that will need to be removed to create the required elevation for the Saltmarsh Creation Area;
- the location of where the material is to be deposited after altering the topography of the Saltmarsh Creation Area;
- whether an artificial creek system is needed within the Saltmarsh Creation Area; and
- whether the sediment at the Saltmarsh Creation Area is compacted and any decompaction is required prior to a breach.

Ground Investigations

6.4.3 Ground investigation will be undertaken within the final Saltmarsh Creation Area to identify any potential contamination risks. The scope of ground investigations will be developed once the location of the Saltmarsh Creation Area has been finalised and would be discussed with NRW.

6.5 Design Options to be Considered Further

6.5.1 Currently in the options design phase, there are two potential options under consideration:

- Modified "set-back" defence embankment. Whereby, the current defence embankment is re-routed around the Saltmarsh Creation Area leaving it dynamically open to the existing saltmarsh and Dee Estuary. This is the proposed method to allow for natural retreat of the saltmarsh due to sea level rise associated with coastal squeeze. This option modifies the defence structure by setting back a portion of the defensive embankment; or
- Retained defence embankment and culvert. Whereby, the existing coastal defence remains in its current position and a culvert is installed through to the Saltmarsh Creation Area to allow the flow of tidal water into the Saltmarsh Creation Area. This is a semi-closed option as the Saltmarsh Creation Area is not open to the existing saltmarsh or Dee Estuary.

6.5.2 The final design to be detailed in the Saltmarsh Implementation and Monitoring Plan would include detailed cross sections of the Saltmarsh Creation Area and the surrounding areas.

6.6 Saltmarsh Establishment

6.6.1 Following realignment of the existing embankment and associated elevation changes, it is envisaged that no further active intervention will be taken. The Area would be left to colonise naturally. However, monitoring will be necessary to ensure that saltmarsh development is occurring as expected, that the water levels and inundation are appropriate, to inform any adjustments to facilitate colonization, and to identify any need for management.

7. Monitoring and Management

7.1 Overview

7.1.1 This section outlines indicative monitoring and management arrangements that will be confirmed within the Saltmarsh Implementation and Monitoring Plan.

7.2 Monitoring

7.2.1 In order to determine if the elevation is increasing sufficiently for stable marsh to develop and whether pioneer vegetation is establishing and expanding, the strongest monitoring option would be to combine ground-based vegetation surveys with remote sensing. This combination would capture marsh elevation, vegetation establishment, zonation shifts, and accretion rates which are the core indicators of saltmarsh development and stability.

7.2.2 A summary of the monitoring, including frequency and associated timescales, is provided in **Table 1.**

Recommended Monitoring Package

7.2.3 For the newly forming saltmarsh the following will be undertaken:

- Unmanned Aerial Vehicle (UAV) orthomosaic + elevation model;
- Real-time Kinetmatic – Global Navigation Satellite System (RTK-GNSS) ground control & transects;
- Quadrat-based vegetation survey;
- Sediment elevation monitoring (marker horizons / pins); and
- Creek network mapping from UAV.

7.2.4 Survey frequency will depend on how fast the saltmarsh is likely to develop and the purpose of the monitoring, but there are well accepted norms used across the UK for habitat creation, managed realignment, and natural regeneration.

7.2.5 For newly developing saltmarsh associated with habitat creation or coastal realignment, monitoring should continue for:

- Minimum: 5 years (typical regulatory requirement);
- Standard: 10 years for habitat creation success criteria; and
- Optimal: Long-term (up to 20 years) or after geomorphological stability is achieved.

7.2.6 It is considered that the initial five-year period will identify whether the saltmarsh colonisation process is proceeding as expected, and this is the period when any remedial works (e.g. managing inundation flow rates or levels, installing brushwood revetments or similar to manage sediment accretion) are most likely to need introduction. Subsequent monitoring should not be required so frequently. The precise subsequent monitoring frequencies can be agreed with the Saltmarsh Steering Group (See Section 8), but it is likely that periodic botanical monitoring will be required to track the

development of pioneer saltmarsh to mature Atlantic salt meadow habitat, on a three-year basis until the Proposed Development is decommissioned.

7.2.7 Once created and established, the retreat area would be included within the existing management regime of Station Saltings, to which it would form an extension.

RTK-GPS / RTK-GNSS Elevation Surveys

7.2.8 Saltmarsh development is fundamentally tied to elevation relative to tidal frame. Accurate elevation surveys (±2–3 cm) detects accretion and can predict habitat transitions.

7.2.9 This survey method is best for:

- Identifying sedimentation/accretion changes over time;
- Establishing baseline topography for newly forming marsh; and
- Calibrating remote sensing data.

7.2.10 These surveys should be carried out 1 to 2 times per year as accretion and elevation changes happen gradually; annual or biannual measurement is usually sufficient:

- Annually, ideally late summer (stable vegetation + good access); and
- Biannually during the first 2–3 years if the site is evolving rapidly (e.g., new managed realignment).

Drone Surveys (RGB + multispectral)

7.2.11 UAVs deliver very high resolution (2–10 cm) imagery for mapping vegetation colonisation, creek evolution, and surface moisture. This method provides:

- Orthomosaics;
- NDVI/NDSI maps;
- Digital Surface/ Terrain Models (DSM/DTM); and
- Creek network mapping.

7.2.12 These surveys should be carried out 2 to 4 times per year in order to capture rapid seasonal changes, pioneer vegetation establishment, and creek formation:

- Early growing season (May–June) – initial vegetation development;
- Peak growing season (July–August) – maximum biomass for mapping;
- Autumn (Sept–Oct) – end-of-season mapping and elevation model update; and
- Optional winter flight if sedimentation or storm impacts are important.

Quadrat Vegetation Surveys / NVC / Species Composition

7.2.13 Vegetation surveys are necessary to confirm pioneer species establishment (e.g., *Salicornia, Spartina, Puccinellia*), biodiversity changes, and habitat condition. Vegetation surveys are best for:

- Ground truthing UAV/satellite classifications;
- Condition assessments (e.g., NVC SM types); and
- Monitoring colonisation thresholds.

7.2.14 These surveys should be carried out once per year: during the optimal growing season:

- Late July to early September (NVC window).

7.2.15 The survey should be repeated annually for the first 5 years of establishment, then every three years once the marsh stabilises.

Sediment Pins / Marker Horizons (Feldspar)

7.2.16 This is valuable as it valuable provides direct measurements of vertical accretion, independent of elevation change due to compaction. It is best for:

- Managed realignment projects;
- Estimating long-term marsh stability; and
- Understanding sediment supply dynamics.

7.2.17 These surveys should be 2 to 4 times per year to capture short-term accretion variation, especially after storms or high sediment delivery periods.

7.2.18 This should be done quarterly for the first 2 years and then biannually thereafter.

7.2.19 **Creek Network Mapping** should be done annually and is best captured via drone imagery. This should be repeated annually, or biannually if creek evolution is a key success criterion.

7.2.20 **Table 1** provides a summary of the proposed monitoring schedule

Table 1: Summary Monitoring Schedule

Survey Type	Frequency Years		Additional Comments
UAV imagery + DTM	2–4 × per year	Annual for five years	Key for vegetation and geomorphology
RTK GNSS elevation	1–2 × per year	Annual for five years	More frequent in first 2–3 years
Vegetation (quadrats/NVC)	1× per year (Jul–Sep)	Annual for five years; every three years thereafter.	Peak biomass
Sediment pins / marker horizons	2–4 × per year	Quarterly for the first two years, biannually thereafter	Higher frequency early on
Creek network mapping	1 × per year	Annual for five years	Via UAV

7.2.21 An annual monitoring report should be provided to the Saltmarsh Steering Group in Q4 of each calendar year.

7.2.22 Following the successful establishment of pioneer saltmarsh, as agreed by the Saltmarsh Steering Group, monitoring of the Saltmarsh Creation Area will be added to the Connah's Quay Power Station Conservation Areas Management

Plan. This will require monitoring to be undertaken throughout the operation of the Proposed Development.

7.3 Management

7.3.1 The Applicant has extensive experience in the management of saltmarsh habitat with existing practices set out within the Connah's Quay Power Station Conservation Areas Management Plan. Based on the experience of the Applicant, the management of this area would need to be adaptive and could include a cutting regime if a dense cover of grasses develops within the area. However, it is envisaged that the management perspectives would be driven by the results of the monitoring. It is proposed that the results of the monitoring identified in **Table 1** are shared with a Saltmarsh Steering Group (see Section 8) annually to agree the management activities.

7.3.2 Following the successful establishment of the saltmarsh, as agreed by the Saltmarsh Steering Group, management of the Saltmarsh Creation Area will be added to the Connah's Quay Power Station Conservation Areas Management Plan. This will require management to be undertaken throughout the operation of the Proposed Development.

7.4 Biosecurity Measures

7.4.1 Biosecurity measures to be followed during the establishment of the Saltmarsh Creation Area will be detailed in the Invasive Species Management Plan (ISMP) secured by the **Framework Construction Environmental Management Plan (EN010166/APP/6.5)**.

7.5 Corrective Actions

7.5.1 Provision will be made for potential corrective actions to be taken to encourage the development of saltmarsh should natural colonisation of the Saltmarsh Creation Area be unsuccessful.

7.5.2 Potential corrective actions include:

- Further changes to levels within the Saltmarsh Creation Area;
- Structures to manage velocity or sediment accretion;
- Adjustment of breach/culvert design to manage velocity/sediment accretion;
- Seeding the area with target species; and
- Translocation of turves within other areas of the Connah's Quay Nature Reserve threatened by erosion associated with the tidal regime within the wider reserve.

7.5.3 It is proposed that the results of the monitoring identified in **Table 1** are shared with a Saltmarsh Steering Group annually to agree any corrective actions so far as these are necessary.

7.6 Success Criteria

7.6.1 The success criteria will incorporate two elements: The presence of the target (positive) species outlined in Section 2.3, and the absence of negative

indicators as defined by published JNCC Common Standards Monitoring guidance. Negative indicators include, but are not limited to, obvious signs of pollution and poaching damage caused by livestock or horses exceeding 25% cover.

7.6.2 The target quantum of established saltmarsh would be twice the area of the confirmed temporary and permanent loss of saltmarsh associated with the construction of the Proposed Surface Water Outfall. The temporary and permanent loss will be confirmed following the NVC survey of the Surface Water Outfall Area and adjacent areas will be undertaken between June and August 2026 (see Section 4.4). The NVC survey report will be provided to the Saltmarsh Steering Group on completion of the survey.

8. Saltmarsh Steering Group

8.1.1 A Saltmarsh Steering Group (SSG) will be formed to review the results of monitoring and to agree any management or corrective actions on an annual basis.

8.1.2 It is envisaged that the SSG would be a subgroup of the existing management group for the Conservation Areas Management Plan and would comprise at least one member of each of the following parties:

- the undertaker;
- Natural Resources Wales; and
- Flintshire County Council.

8.1.3 Part 2 of Schedule 16 of the **Draft DCO (EN010166/APP/3.1)** states that no stage of Work No. 5 may be commenced until a plan for the work of the SSG has been submitted to and approved by the relevant discharging authority.

8.1.4 The plan must include:

- terms of reference of the SSG;
- the membership of the SSG;
- details of the schedule of meetings, timetable for preparation of the SIMP and reporting and review periods; and
- the dispute resolution mechanism.

8.1.5 The SSG will cease to exist once all parties are agreed that the saltmarsh has successfully established. Future discussions on management would be discussed and agreed under the existing management group for the Conservation Areas Management Plan.

References

Ref 1. North West England and North Wales Coastal Group (2016), Shoreline Management Plan 22 – The Great Orme [Online]. Available at: https://www.mycoastline.org.uk/shoreline-management-plans/ (Accessed 25/07/2025).

Ref 2. Rodwell J.S. (2006) National Vegetation Classification: Users' Handbook. Available at: National Vegetation Classification: Users' handbook (Accessed 28/01/2026).

Ref 3. UKHab Ltd (2023). The UK Habitat Classification Version 2.0. UKHab Ltd.

Ref 4. Natural England (2010). Dee Estuary EMS: Conservation Advice for European Marine Sites. Natural England. [Online]. Available at: https://publications.naturalengland.org.uk/publication/2986296?category=3212324 (Accessed 27/02/2026).

Ref 5. Joint Nature Conservation Committee (2004). Common Standards Monitoring Guidance for Saltmarsh Habitats. Joint Nature Conservation Committee. [Online]. Available at: https://data.jncc.gov.uk/data/0ba59dfe-9f06-4c7b-bd69-24b6de6db6da/CSM-saltmarsh.pdf (Accessed 28/01/2026).

Ref 6. Connah's Quay Power Station - Conservation Areas Management Plan Final Issue. (July 2015). Bellinger Design and Richard Tofts Ecology. 338pp.

Appendix A – Consents and Agreements Positions Statement

The Saltmarsh Creation Area is entirely within the Order limits. No additional consents licences and permits beyond those identified within the **Consents and Agreements Position Statement (EN010166/APP/3.3)** are required to enable the establishment of the Saltmarsh Creation Area.

It is noted that as the baseline surveys identified in Section 6 will be undertaken within the Dee Estuary SSSI, the Applicant will be required to obtain SSSI Assent/Consent for the installation of monitoring equipment pursuant to Section 28 of the Wildlife and Countryside Act 1981.

Abbreviations

Term	Definition
C&IEA	Construction and Indicative Enhancement Area
CCP	Carbon Capture Plant
CCGT	Combined Cycle Gas Turbine
CO_2	Carbon dioxide
CQLCP	Connah Quay Low Carbon Power
DCO	Development Consent Order
EU	European Union
FCC	Flintshire County Council
HAT	Highest astronomical tide
kV	kilovolt
MW	Megawatt
NGET	National Grid Electricity Transmission
NRW	Natural Resources Wales
NVC	National Vegetation Classification
RTK-GNSS	Real-time Kinetmatic – Global Navigation Satellite System
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
UKHab	UK Habitat Classification