OSSIAN OFFSHORE WIND FARM: TRANSMISSION INFRASTRUCTURE

EIA SCOPING REPORT: PART 3 (OF 5)

794-PLN-ESH-00043
Ossian Transmission Infrastructure
EIA Scoping Report
Final
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7. ASSESSMENT OF EFFECTS - ONSHORE ENVIRONMENT

7.1. Introduction

7.1.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for those topics that consider the onshore elements of the Ossian Transmission Infrastructure.

7.2. Geology, Hydrogeology and Ground Conditions

7.2.1 Introduction

7.2.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for geology, hydrogeology and ground conditions. The geology, hydrogeology and ground conditions assessment will consider the likely significant effects of the Ossian Transmission Infrastructure (landward of MHWS) on ground conditions, including land and groundwater contamination, ground instability and minerals resources. **Section 6.1** of this EIA Scoping Report (physical processes) addresses the impacts seaward of MHWS.

7.2.1.2 Surface waters will be considered as a sensitive receptor in terms of potential contamination arising from current and historical land uses. All other potential impacts to surface waters are considered within **section 7.3** of this EIA Scoping Report.

7.2.1.3 Impacts on soils, in terms of their agricultural use, resource value and peat, are addressed within **section 7.7** of this EIA Scoping Report.

7.2.2 Proposed Study Area for the Assessment

7.2.2.1 The study area for the assessment of geology, hydrogeology and ground conditions will comprise a buffer of 250 m around the land to be temporarily or permanently required for the Ossian Transmission Infrastructure landward of MHWS (i.e. the Onshore Transmission Infrastructure and those parts of the Landfall located above MHWS). This study area enables the identification of on-site sources (i.e. within the study area) and off-site sources (i.e. outside the study area) of potential contamination and other factors which may influence ground conditions.

7.2.3 Baseline Environment

7.2.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary based on publicly available information. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 7.2.9**.

7.2.3.2 The geological and environmental setting is provided in **Table 7.2.1** to **Table 7.2.8** below. Where relevant, baseline features are identified by their corresponding ID reference as indicated in **Figure 7.2.1** to **Figure 7.2.9**.

Designated Sites

7.2.3.3 Designated geological sites located within the Onshore Scoping Boundary are summarised within **Table 7.2.1** and presented in **Figure 7.2.1**.

Table 7.2.1: Environmental Designations Relevant to Geology

ID	Site	Interest
GS01	Dalby Hill Site of Special Scientific Interest (SSSI)	Geological
GS02	Hundleby Clay Pit SSSI	Geological

Local Geological Sites

7.2.3.4 Local geological sites within the Onshore Scoping Boundary are summarised in **Table 7.2.2** and presented in **Figure 7.2.1**.

Table 7.2.2: Local Geological Sites

ID	Site
LGS01	South Thoresby Quarry
LGS02	Welton le Marsh Chalk Quarry
LGS03	Claxby Spring
LGS04	East Keal Brick Pit
LGS05	Sandstone Bluff, Hagworthingham
LGS06	Hobhole Drain, Benington Bridge to Baker's Bridge
LGS07	Hobhole Drain, Duke of Wellington Public House
LGS08	Well Vale
LGS09	Lincolnshire Coast Submerged Forest

Groundwater Dependent Terrestrial Ecosystems

7.2.3.5 Groundwater Dependent Terrestrial Ecosystems (GWDTEs) within the Onshore Scoping Boundary are summarised in **Table 7.2.3** and presented in **Figure 7.2.2**.

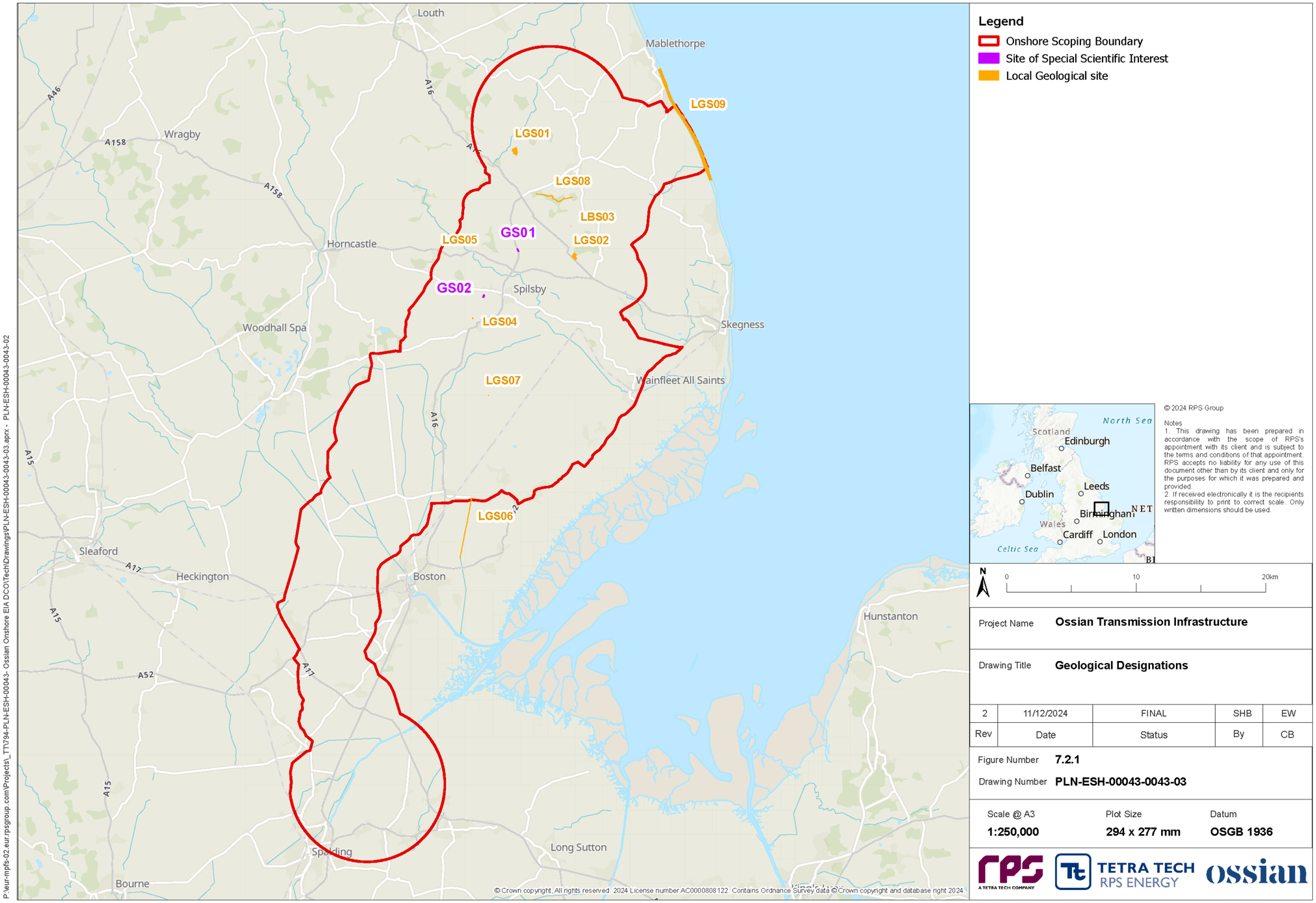

Figure 7.2.1: Geological Designations

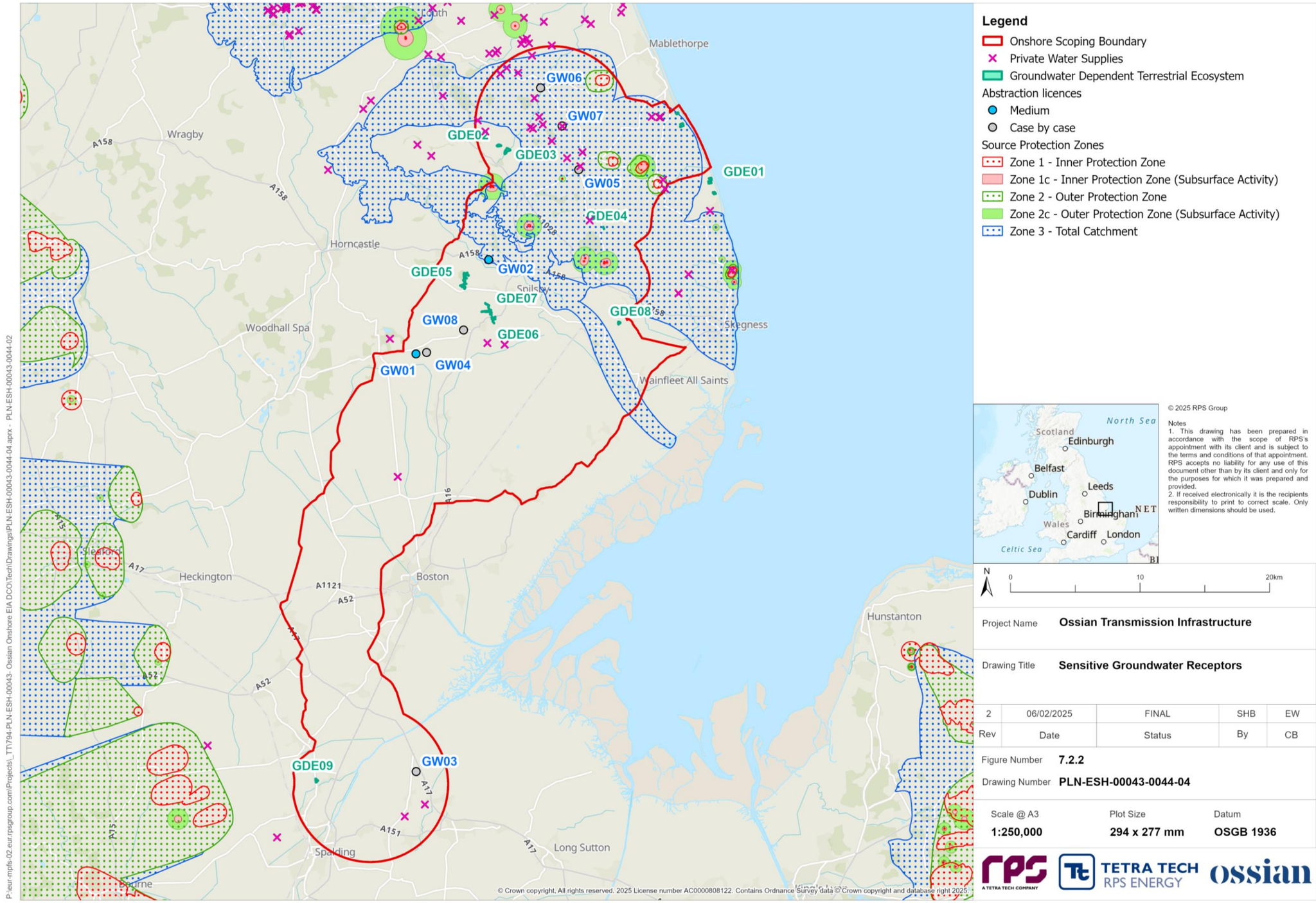

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Figure 7.2.2: Sensitive Groundwater Receptors

Table 7.2.3: Groundwater Dependent Terrestrial Ecosystems

ID	Site	Interest
GDE01	Sea Bank Clay Pits SSSI	Biological
GDE02	Swaby Valley SSSI	Biological
GDE03	Calceby Marsh SSSI	Biological
GDE04	Willoughby Meadow SSSI	Biological
GDE05	Mavis Enderby Valley SSSI	Biological
GDE06	Keal Carr SSSI	Biological
GDE07	Jenkins Carr SSSI	Biological
GDE08	Bratoft Meadows SSSI	Biological
GDE09	Surfleet Lows SSSI	Biological

Licenced Groundwater Abstractions

7.2.3.6 Licenced groundwater abstractions within the Onshore Scoping Boundary are summarised in **Figure 7.2.2** and presented in **Table 7.2.4**.

Table 7.2.4: Licensed Groundwater Abstractions

ID	Licence Holder	Purpose	Maximum Daily Quantity (m^3)	Maximum Annual Quantity (m^3)
GW01	K C Roe & Son	Spray Irrigation - Direct	1,000	22,730
GW02	Hawkes Ltd	General Farming & Domestic	200	58,400
GW03	Jack Buck (Farms) Limited	Spray Irrigation - Direct	1,200	32,000
GW04	A E Lenton (Farms) Ltd	Spray Irrigation - Direct	2,046	30,685
GW05	Safelincs Limited	Process Water	112	35,175
GW06	Withern Mill Trout Farm	Fish Farm/Cress Pond Throughflow	163	59,735
GW07	Scaman	Spray Irrigation - Direct	109	9,092
GW08	W B Lamyman Ltd	Spray Irrigation - Direct	909	4,110

Private Water Supplies

7.2.3.7 Numerous Private Water Supplies (PWSs) are identified within the Onshore Scoping Boundary with sources including boreholes, springs and wells. These PWSs are used for various activities, including domestic, commercial and public use. PWSs within the Onshore Scoping Boundary are presented in **Figure 7.2.2.**

Source Protection Zones

7.2.3.8 The following Source Protection Zones (SPZs) coincide with the Onshore Scoping Boundary:

- 13 no. SPZ 1 (inner protection zone);
- 7 no. SPZ 1c (inner protection zone (subsurface activity));
- 4 no. SPZ 2 (outer protection zone);
- 6 no. SPZ 2c (outer protection zone (subsurface activity)); and
- 1 no. SPZ 3 (final source catchment zone).

7.2.3.9 The location and geographic extent of SPZs within the Onshore Scoping Boundary is presented in **Figure 7.2.2**.

Geological and Hydrogeological Setting – Bedrock Geology

7.2.3.10 Bedrock geology within the Onshore Scoping Boundary is summarised in **Table 7.2.5** and presented in **Figure 7.2.3**, **Figure 7.2.4** and **Figure 7.2.5**.

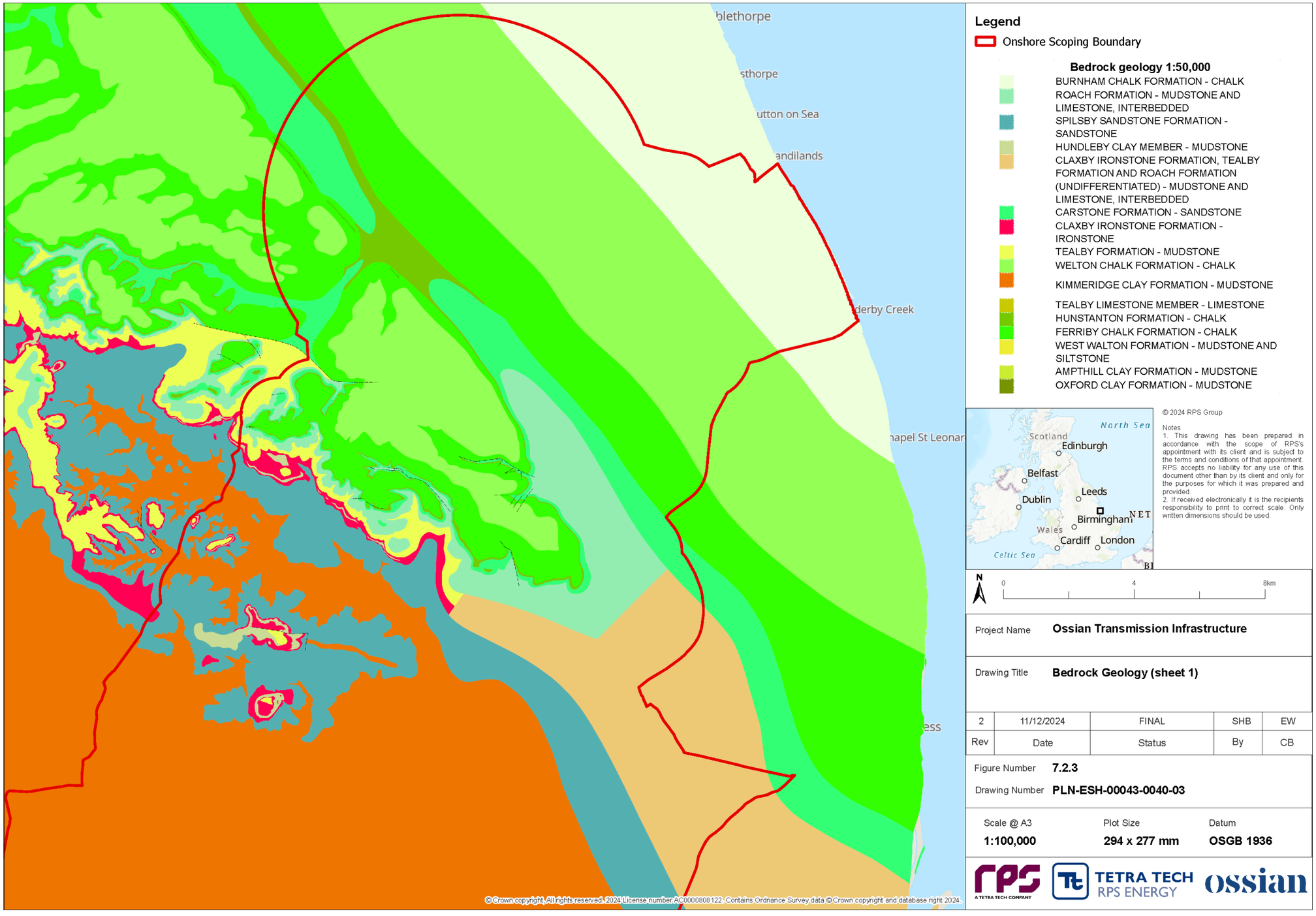

Figure 7.2.3: Bedrock Geology (sheet 1)

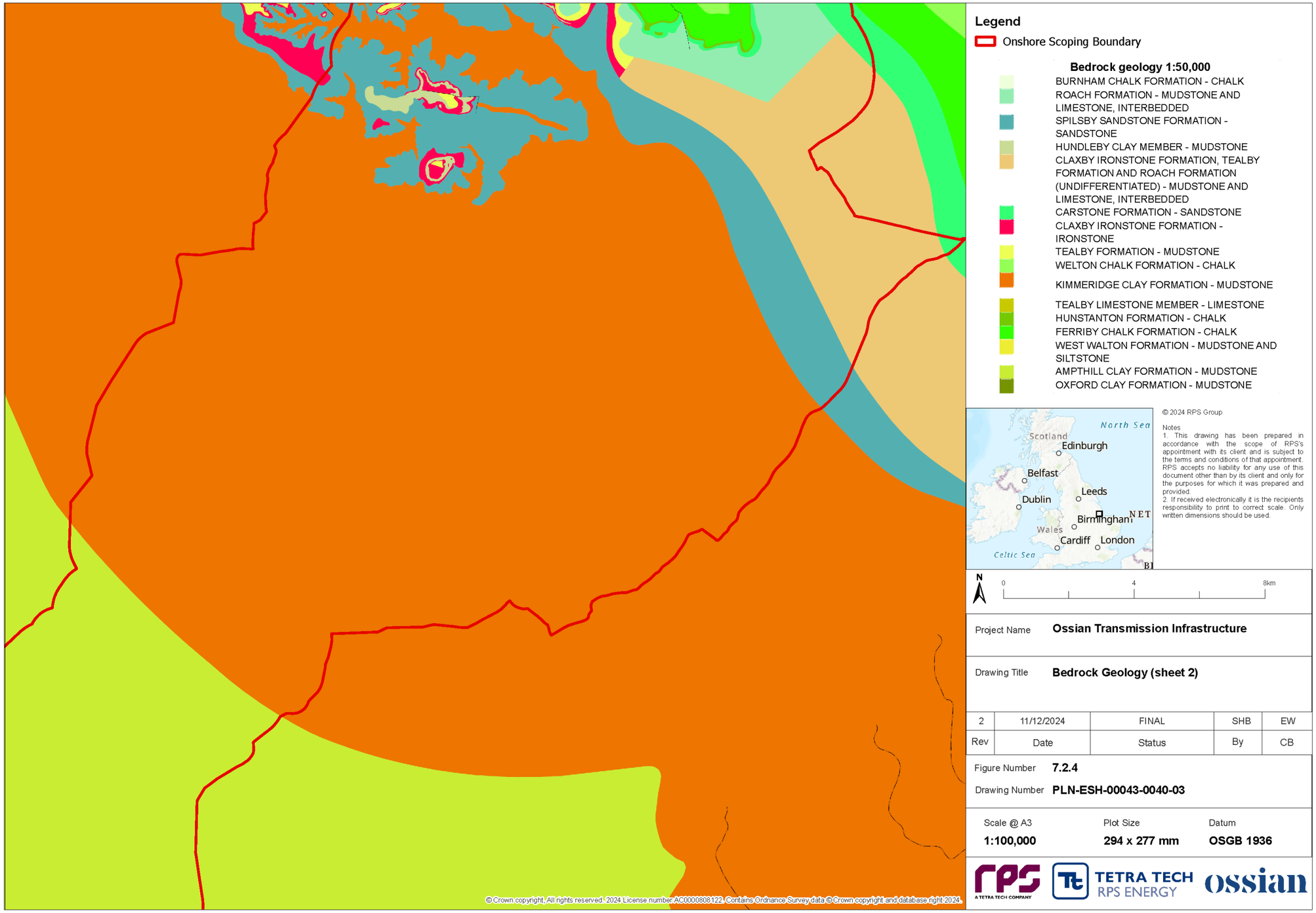

Figure 7.2.4: Bedrock Geology (sheet 2)

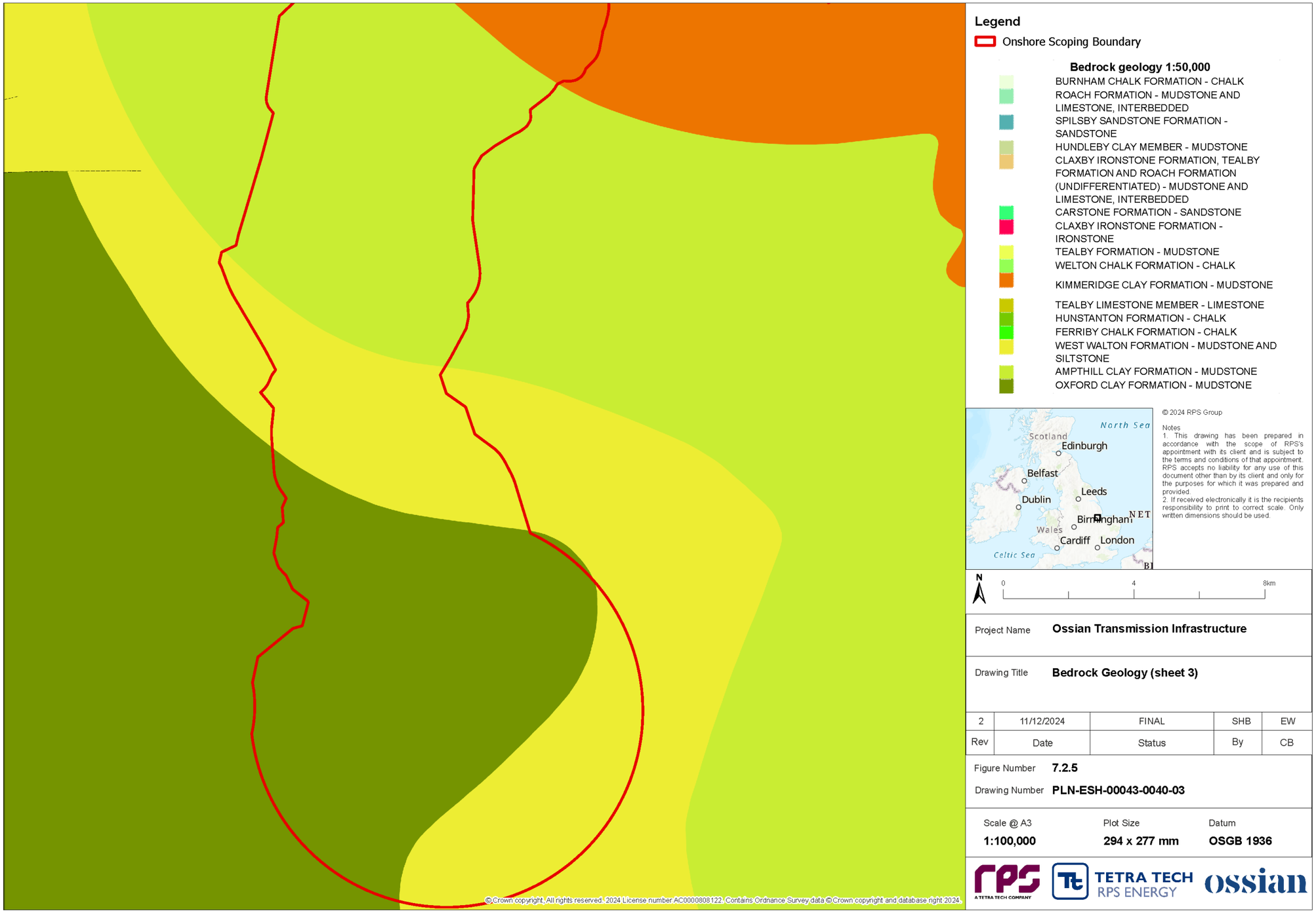

Figure 7.2.5: Bedrock Geology (sheet 3)

Table 7.2.5: Bedrock Geology

Group	Age	Lithology	Aquifer Classification
Burnham Chalk Formation	Cretaceous	Chalk	Principal
Welton Chalk Formation	Cretaceous	Chalk	Principal
Ferriby Chalk Formation	Cretaceous	Chalk	Principal
Hunstanton Formation	Cretaceous	Chalk	Principal
Carstone Formation	Cretaceous	Sandstone	Principal
Roach Formation	Cretaceous	Mudstone and limestone, interbedded	Secondary A
Tealby Formation	Cretaceous	Mudstone	Unproductive
Claxby Ironstone Formation	Cretaceous	Ironstone	Secondary A
Hundleby Clay Member	Cretaceous	Mudstone	Unproductive
Claxby Ironstone Formation, Tealby Formation and Roach Formation (undifferentiated)	Cretaceous	Mudstone and limestone, interbedded	Secondary B
Spilsby Sandstone Formation	Jurassic and Cretaceous	Sandstone	Principal
Kimmeridge Clay Formation	Jurassic	Mudstone	Unproductive
Ampthill Clay Formation	Jurassic	Mudstone	Unproductive
West Walton Formation	Jurassic	Mudstone and siltstone	Unproductive
Oxford Clay Formation	Jurassic	Mudstone	Unproductive

Geological and Hydrogeological Setting – Superficial Geology

7.2.3.11 Superficial geology within the Onshore Scoping Boundary is summarised in **Table 7.2.6** and presented in **Figure 7.2.6, Figure 7.2.7** and **Figure 7.2.8**.

Table 7.2.6: Superficial Geology

Group	Age	Lithology	Aquifer Classification
Beach and Tidal Flat Deposits	Quaternary	Clay, silt and sand	Secondary (undifferentiated)
Storm Beach Deposits	Quaternary	Sand, gravel and boulders	Secondary A
Blown Sand	Quaternary	Sand	Secondary A
Till	Quaternary	Diamicton	Secondary (undifferentiated)
Glaciofluvial Deposits	Quaternary	Sand and gravel	Secondary A
Alluvium	Quaternary	Clay, silt, sand and gravel	Secondary A
River Terrace Deposits	Quaternary	Sand and gravel	Secondary A
Peat	Quaternary	Peat	Unproductive
Head	Quaternary	Clay, silt, sand and gravel	Secondary A
Superficial Deposits	Quaternary	Sand and gravel	Secondary A
Tidal Flat Deposits	Quaternary	Clay and silt	Unproductive
Storm Beach Deposits	Quaternary	Sand and silt.	Secondary A

Mineral Resources

7.2.3.12 The following Mineral Safeguarding Areas (MSAs) coincide with the Onshore Scoping Boundary:

- two site specific MSAs for chalk relating to South Thoresby quarry, and Welton le Marsh quarry/Highfield quarry;
- one MSA for sand and gravel; and
- one sand and gravel area of search.

7.2.3.13 The location and geographic extent of MSAs within the Onshore Scoping Boundary is presented in **Figure 7.2.9**.

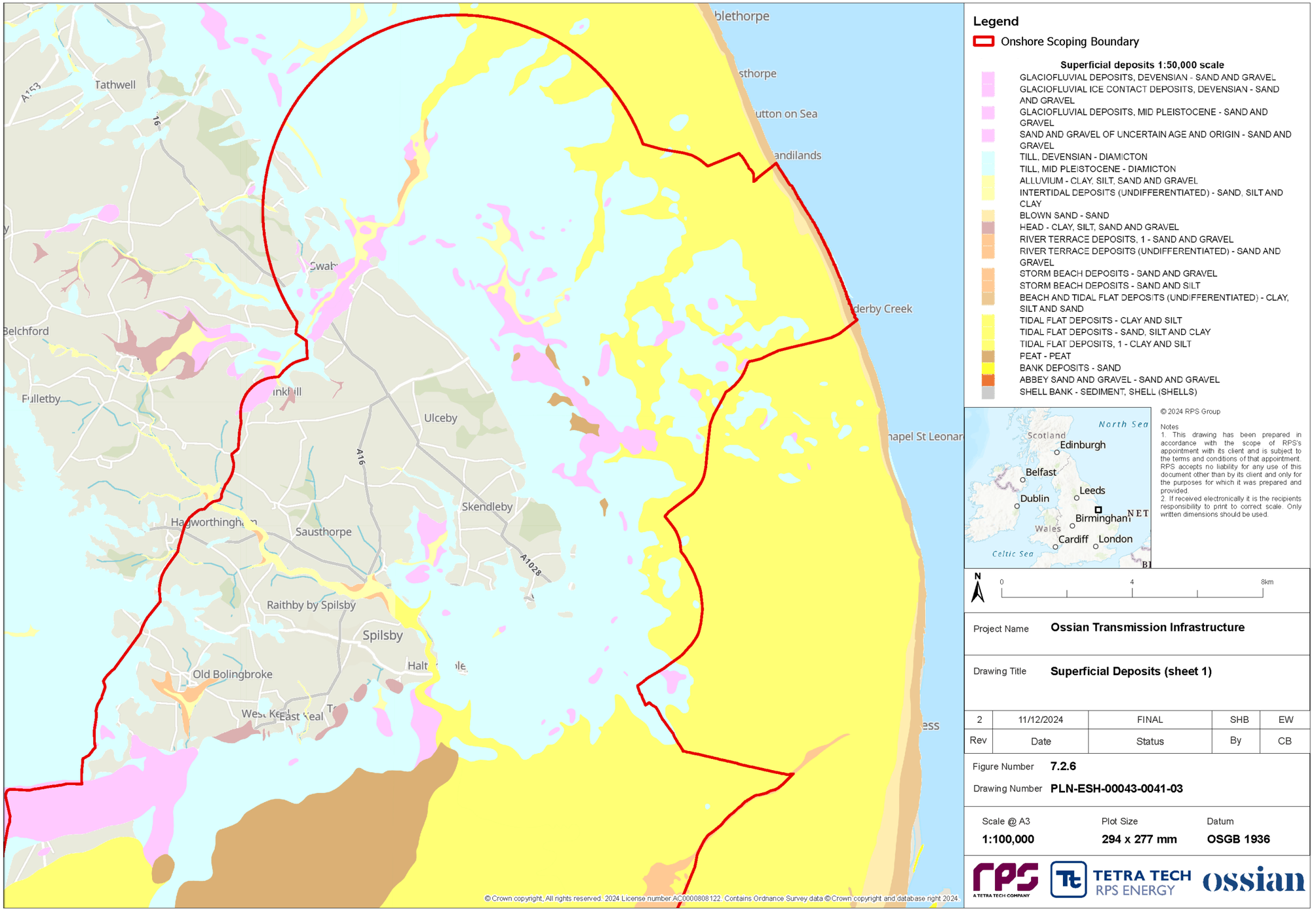

Figure 7.2.6: Superficial Deposits (sheet 1)

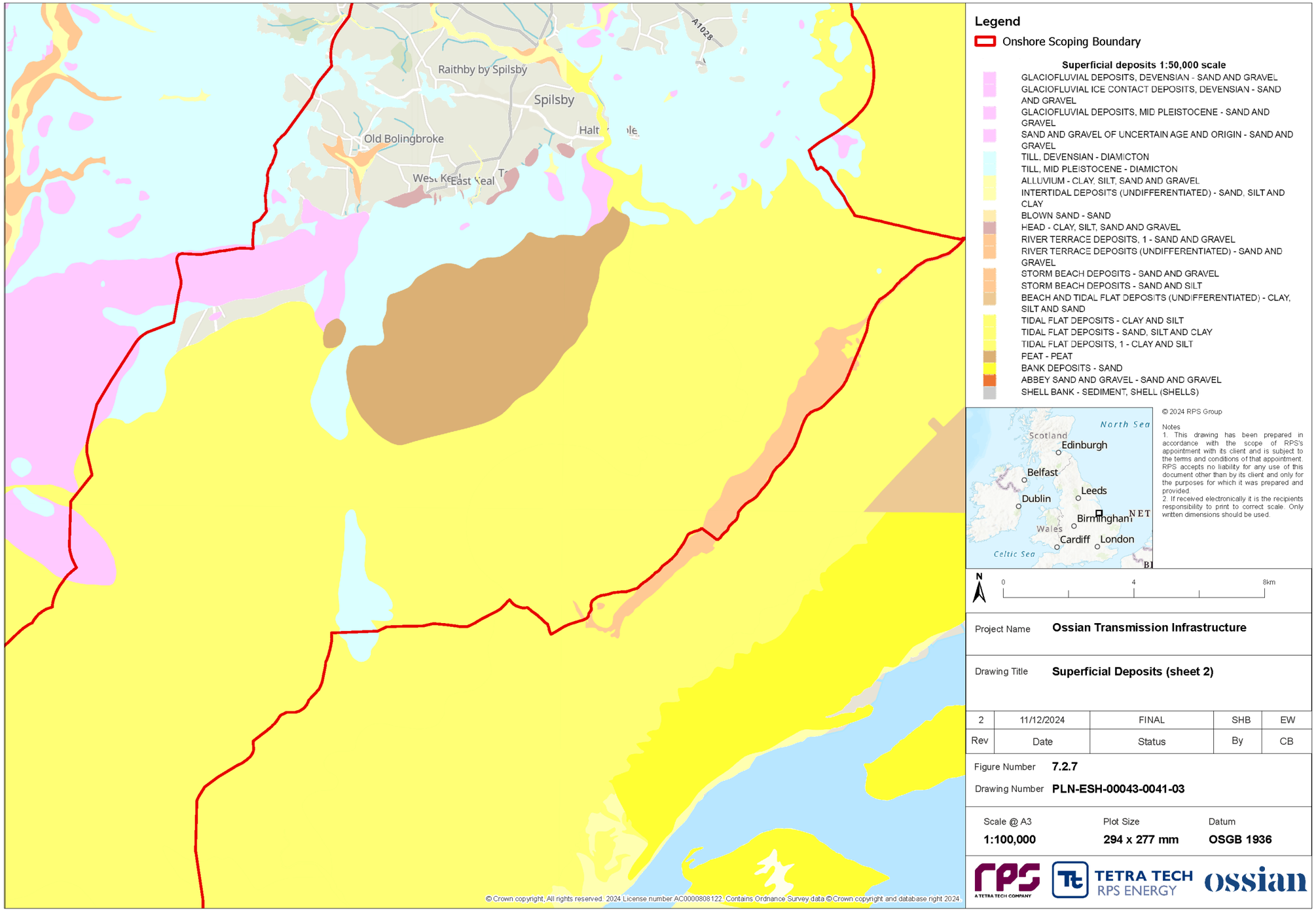

Figure 7.2.7: Superficial Deposits (sheet 2)

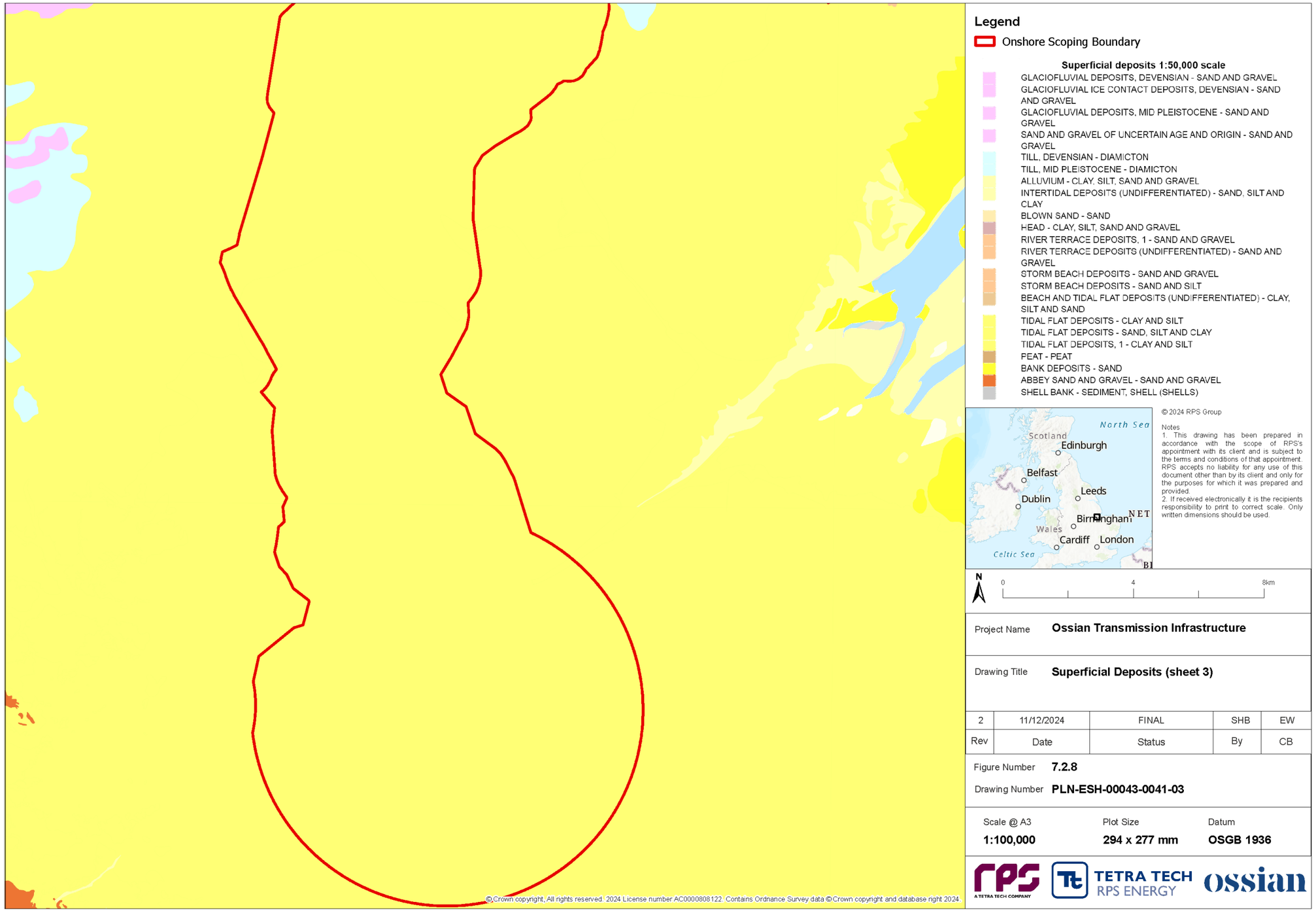

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Figure 7.2.8: Superficial Deposits (sheet 3)

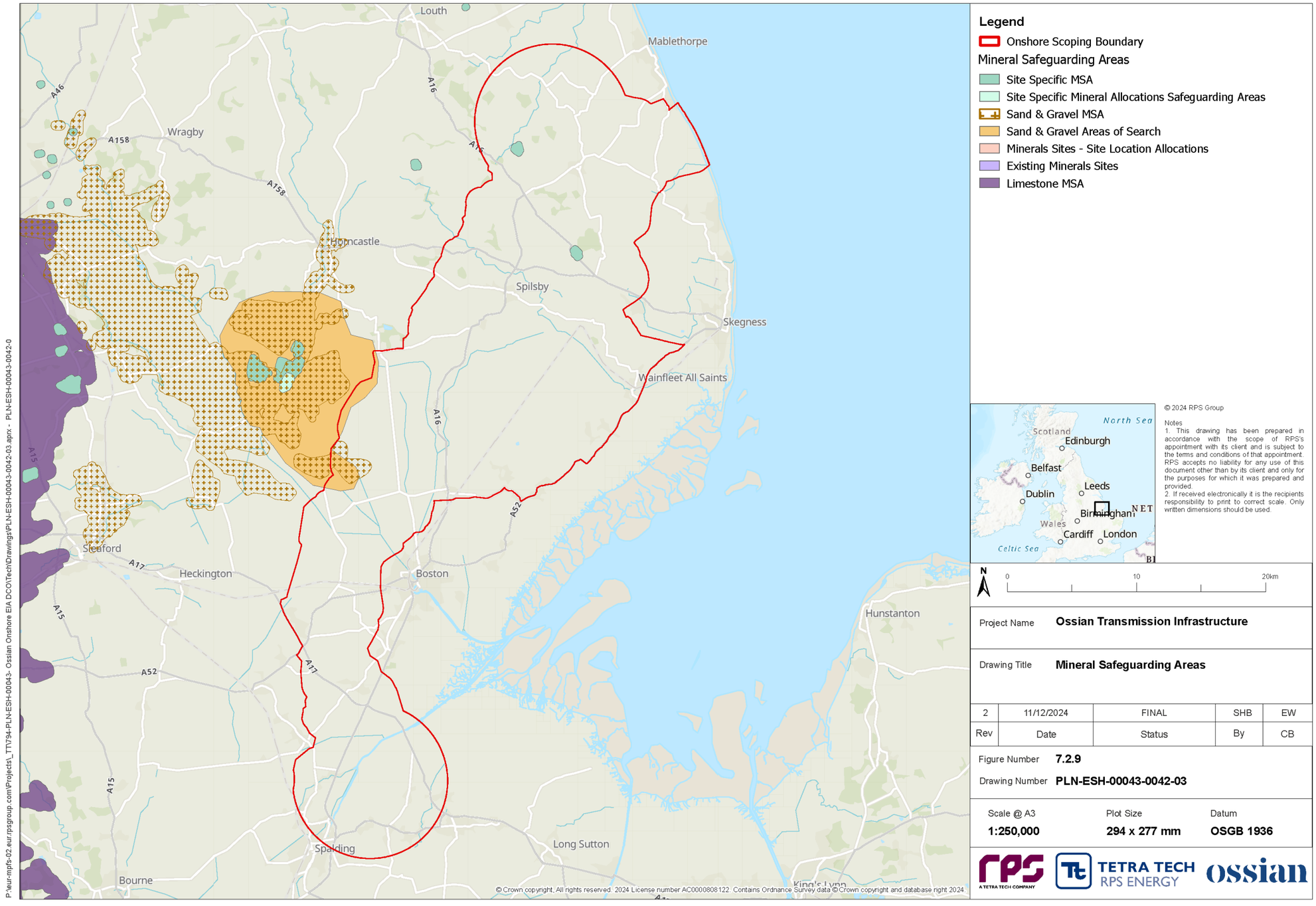


Figure 7.2.9: Mineral Safeguarding Areas

Unexploded Ordnance/Unexploded Bombs

7.2.3.14 Zetica unexploded bomb risk online mapping (Zetica 2025) indicates that the Onshore Scoping Boundary is in an area of low potential risk from unexploded bombs. Several Unexploded Ordnance (UXO) and Unexploded Bombs (UXB) indicators have been identified within the Onshore Scoping Boundary, which include:

- Boston Aerodrome;
- RAF Strubby;
- East Kirkby;
- Spilsby;
- pillboxes;
- aircraft crash sites;
- searchlights;
- military camps;
- bombing decoys;
- military ranges; and
- radar station.

Historical Landfills

7.2.3.15 Historical landfills within the Onshore Scoping Boundary are summarised in **Table 7.2.7** and presented in **Figure 7.2.10**.

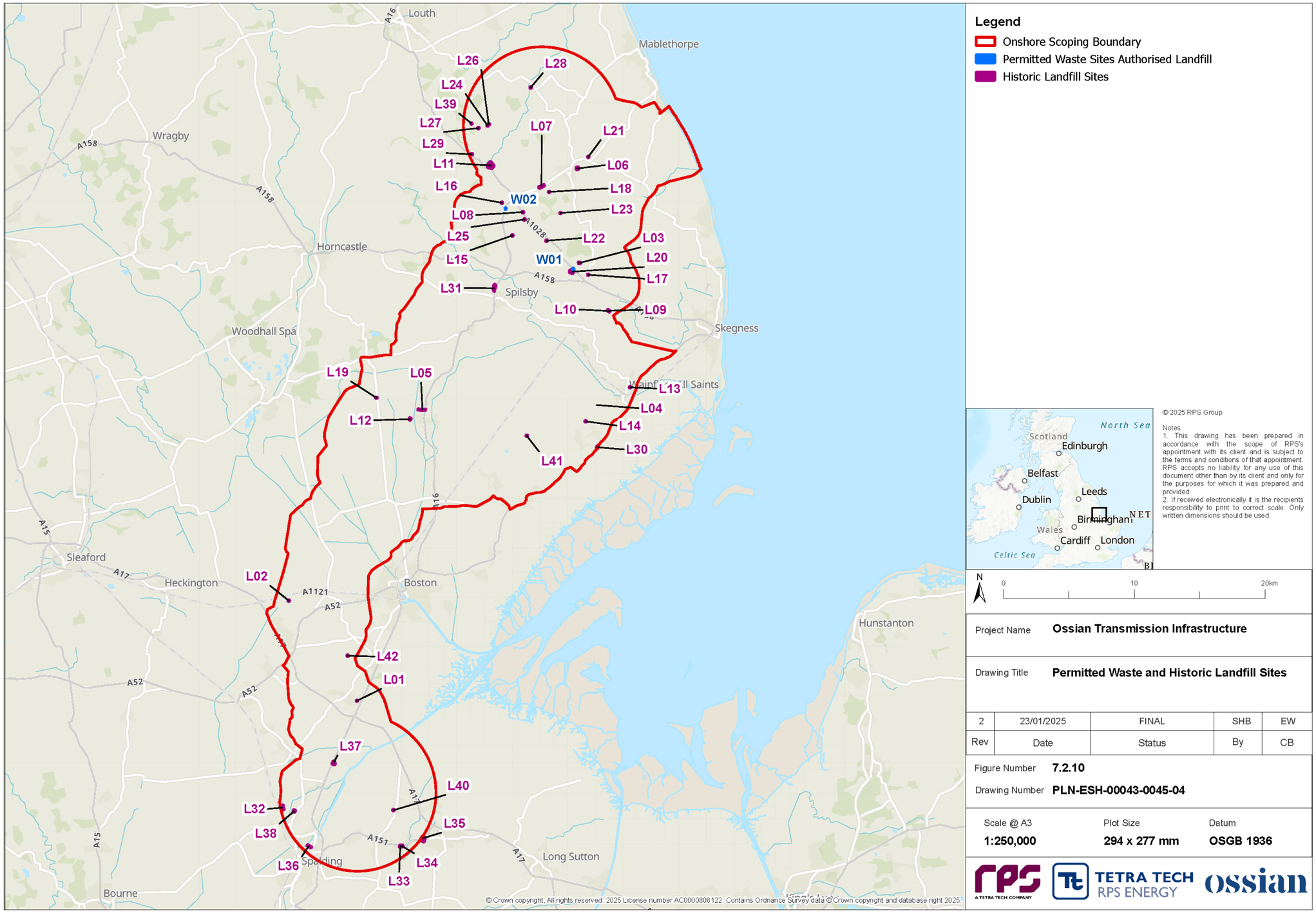


Figure 7.2.10: Permitted Waste and Historic Landfill Sites

Table 7.2.7: Historical Landfills

Site ID	Site Name	Dates of Operation	Waste Accepted
L01	5/6 Church Lane	Unknown	Household
L02	Sykemouth Drove	Unknown	Household
L03	Mill Lane	Licence surrender December 1977	Household
L04	O.S. Field No.4900	Unknown	Inert
L05	The Old Railway Site	Unknown	Household
L06	Drying Beds	Licence issue March 1982	Inert, industrial, commercial, household, liquid sludge
L07	Disused Workings	December 1976 to December 1983	Inert, industrial, commercial, household
L08	Ulceby Cross/Land to East of Bluestone Heath Road	December 1985 to December 1991	Inert
L09	Gravel Pit	Unknown	Inert
L10	Former Gravel Pit adjacent to Gravel Pits Farm	Unknown	Inert
L11	South Thoresby Landfill Site	December 1983 to December 1993	Inert, industrial, commercial, household
L12	Brickyard Stickney or Brick Pits	Unknown	Unknown
L13	Green Hill	Unknown	Household
L14	Old Fen Road	Unknown	Household
L15	Fordington Top	Unknown	Household
L16	Harrington Lane	Unknown	Household
L17	Redland's Holt, Well Road	Unknown	Household
L18	Well High Lane	Unknown	Household
L19	Town End Farm	Unknown	Household
L20	Candlesby	April 1968 to unknown	Commercial, household
L21	Land At Bilsby	Unknown	Household
L22	Land Off Bluestone Heath Road	Unknown	Household
L23	Rigge Belt Chalk Pit	Unknown	Inert
L24	Land Near Meagram Top	Unknown	Household
L25	Gate Hangs Well	Unknown	Household
L26	Swaby	Unknown	Household
L27	Swaby	Unknown	Household
L28	Withern Mill	Unknown	Household
L29	Swaby	Unknown	Household
L30	Land to East of Main Road	Licence issue December 1986 Licence surrender December 1994	Inert
L31	Tom Thumb Holt, Partney and Dalby	Unknown	Household
L32	Fernleigh Farm	Unknown	Household
L33	Piggery	Unknown	Household
L34	Foundry House	Unknown	Household
L35	Main Road	Unknown	Household
L36	Spalding Sugar Beet Factory	Licence issue April 1990	Inert, household, liquid sludge
L37	Surfleet Bank	Licence issue June 1993 Licence surrender April 2006	Inert
L38	Bacons Lane	December 1967 to unknown	Commercial
L39	Catch Acres Tip	March 1971 to unknown	Commercial
L40	Fox and Hounds	Unknown	Commercial
L41	Pet Crematorium	April 1988 to April 1994	Special waste
L42	Lincolnshire Pet Crematorium	October 1989 to unknown	Special waste

Permitted Waste Sites

7.2.3.16 Permitted waste sites within the Onshore Scoping Boundary are summarised in **Table 7.2.8** and presented in **Figure 7.2.10**.

Table 7.2.8: Permitted Waste Sites

Site ID	Site Name	Dates of Operation	Facility
W01	Old Chalk Pit	Permit issue June 1988	Landfill taking Non-Biodegradeable Wastes
W02	Scotland House Reservoir	Permit issue July 1992	Landfill taking Non-Biodegradeable Wastes

Future Baseline Conditions

7.2.3.17 The primary sources of future change with respect to the baseline are changes in land use and climate change. The assessment of likely significant effects on geology, hydrogeology and ground conditions will consider any potential changes in baseline conditions that would alter the conclusions of the assessment.

7.2.3.18 No changes in statutory legislation are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.2.4 Proposed Data Sources

Desk Study

7.2.4.1 The data sources proposed to be used for the assessment of geology, hydrogeology and ground conditions are set out in **Table 7.2.9**. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.2.9: Data Sources

Data	Source
Aquifer designation – Bedrock and Superficial Deposits; Groundwater vulnerability	Defra MAGIC Interactive Maps
British Geological Survey Memoir (Sheets 82, 90 and 91)	The geology of Holderness and adjoining parts of Yorkshire and Lincolnshire (Reid, 1885)
Coal mining	Coal Authority Interactive Map
Contaminated Land Register	Boston Borough Council, East Lindsey District Council, South Holland District Council
Environmental designations (Sites of Scientific Interest, Special Areas of Conservation, Special Protection Areas, Ramsar)	Defra MAGIC Interactive Maps
GeoIndex Onshore	British Geological Survey (BGS) Map Viewers
Groundwater Dependent Terrestrial Ecosystems	Environment Agency
Historic landfill sites	Environment Agency and Rivers Trust
Mineral Safeguarding Areas in Lincolnshire	Lincolnshire County Council
Notified Local Geodiversity Sites in Lincolnshire	Lincolnshire Environmental Records Centre
Permitted waste sites and authorised landfill sites	Environment Agency and Rivers Trust
Private Water Supplies	Boston Borough Council, East Lindsey District Council, South Holland District Council
Source Protection Zones	Environment Agency and Rivers Trust
The Geology of Lincolnshire	The Geology of Lincolnshire, Lincolnshire Naturalists' Union (Swinnerton and Kent, 1981).
Relevant Groundsure environmental database reports	Groundsure
Historical OS mapping data	Groundsure
Water Abstraction Licences	Environment Agency
Zetica Unexploded Bomb Risk map	Zetica UXO

Site-specific Surveys

7.2.4.2 Site-specific surveys will be undertaken to inform the baseline assessment for geology, hydrogeology and ground conditions. This will include:

- private water supply surveys to seek to identify the location and nature of private water supplies within the hydrology and flood risk study area.

7.2.4.3 This will consider potentially impacted abstraction points, including PWSs and GWDTEs.

7.2.5 Mitigation Measures

7.2.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Avoidance of impact through design by selecting options that avoid, where practicable as a starting point, sensitive features or constraints (e.g. geological designated sites, groundwater abstraction points, historical landfills).
- Use of trenchless techniques, where practicable, to cross the most sensitive features (e.g. geological designated sites, where these cannot be avoided).
- Construction and decommissioning activities to be undertaken in accordance with the Construction Design Management (CDM) Regulations 2015 (or equivalent at the time), best practice measures and in line with a Code of Construction Practice (CoCP). The CoCP will be prepared in accordance with an Outline CoCP, which will be submitted as part of the application for development consent.
- The Outline CoCP will include measures to be adopted to mitigate against mobilisation of contaminants that could impact on controlled waters or neighbouring land users. These measures may include the following, where appropriate.
  - A Discovery Strategy or equivalent to be implemented in the event of discovery of unexpected soil or groundwater contamination during site preparation and construction.
  - The implementation of dust suppression measures during construction to reduce nuisance dust emissions during the works (see **section 7.10**).
  - Construction drainage measures to reduce surface water runoff and pollution (see **section 7.3**).
  - Suitable measures for storage of materials, oils and chemicals away from existing watercourses, including drainage ditches or ponds.
  - Use of a documented spill procedure and use of spill kits kept in the vicinity of chemical/oil storage.
  - Suitable Personal Protective Equipment (PPE) and welfare facilities for construction personnel.
  - Other measures to manage risks to human health from the presence of asbestos should be implemented and should include dust suppression measures and air monitoring.
- Waste generated during construction of the Onshore Transmission Infrastructure would be managed in accordance with a Site Waste Management Plan. An Outline Site Waste Management Plan will be submitted with the application for development consent.
- Where areas of significant contamination cannot be avoided, appropriate mitigation measures will be implemented.
- Operational drainage at the Onshore Converter Stations will be in accordance with a Drainage Strategy. An Outline Drainage Strategy will be produced to accompany the application for development consent. This will include runoff and pollution control measures (see **section 7.3)**.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.2.5.2 The mitigation requirements for geology, hydrogeology and ground conditions will be discussed with relevant local authorities, where required, as part of the ETGs prior to submission of the application for development consent.

7.2.6 Proposed Scope of the Assessment

7.2.6.1 Potential impacts that are proposed to be scoped into the assessment for geology, hydrogeology and ground conditions are set out in **Table 7.2.10**.

7.2.7 Impacts Proposed to be Scoped Out

7.2.7.1 Potential impacts that are proposed to be scoped out of the assessment for geology, hydrogeology and ground conditions and the justification are set out in **Table 7.2.11**.

Table 7.2.10: Potential Impacts Proposed to be Scoped into the Assessment for Geology, Hydrogeology and Ground Conditions

Impact	C	O	D	Description	Proposed Approach to Assessment
Loss or partial loss/damage to designated geological sites.	✓	×	×	Geological SSSIs and local geological sites have been identified within the Onshore Scoping Boundary.	The site selection process will avoid designated sites where practicable. Where avoidance is not practicable, features may be crossed through trenchless methodologies, where practicable, and will be included in the assessment. Mitigation will be developed in consultation with Natural England and local authorities, as appropriate.
Mobilisation of any existing areas of contamination causing a deterioration of groundwater quality in underlying aquifer units.	✓	×	✓	There is potential for existing contamination as a result of historical and current land uses (e.g. historical and permitted landfill sites). Dust generated during the construction phase could pose a risk to adjacent off-site human receptors via the inhalation exposure pathway. There is potential for residual contamination as a result of historical/current land uses. Dust generated during the decommissioning phase could pose a risk to adjacent off-site human receptors via the inhalation exposure pathway.	The potential for contamination will be identified through preparation of a desk study, development of a preliminary risk assessment, and ground investigation where practicable and necessary. This will inform any remediation and/or mitigation requirements where avoidance is not practicable. A Remediation Strategy will be prepared if areas of existing ground contamination cannot be avoided. Identified risks arising from decommissioning will be managed through the Onshore Decommissioning Plan.
Mobilisation of any existing contamination on off-site human receptors.	✓	×	✓		
Changes in groundwater levels, flow or quality on other sensitive groundwater dependent sites and groundwater abstractions.	✓	×	×	There is potential for groundwater changes as a result of earthworks and dewatering operations or as a result of permanent below ground features such as foundations.	The groundwater team will work with the ecology team to identify such features, which will be assessed where a pathway for an impact is identified. This will inform the risk and mitigation measures where necessary and where avoidance is not practicable. Where presence of below ground infrastructure, such as the Landfall, Onshore Export Cables and foundations for the Onshore Converter Stations may affect groundwater including GWDTEs, feature surveys and/or ground investigation will be undertaken to inform the risk and any mitigation measures which will be developed in consultation with the Environment Agency and relevant designating authorities.
Creation of preferential contaminant pathways to groundwater resources.	✓	×	×	Deterioration in groundwater quality through the installation of foundations to support above ground infrastructure and trenchless crossings.	Construction methods such as piling would be subject to foundation works risk assessment in line with Environment Agency guidance prior to construction. Risks to groundwater from the use of trenchless technologies will be assessed and mitigation put in place where practicable.
Sterilisation of safeguarded mineral reserves.	✓	×	×	Construction within deposits of minerals safeguarded by local policy.	Where avoidance is not practicable, a mineral resource assessment will be undertaken in consultation with the Mineral Planning Authority and any mitigation agreed will be implemented.
Ingress and accumulation of ground gases within buildings which may cause asphyxiation/ explosive risks.	×	✓	×	The use of gas protection measures, such as impermeable membranes and ventilation, may be required if any permanent structures are to be in proximity to identified sources of ground gases such as landfill sites.	Sources of gas will be identified through completion of a detailed desk study, development of a Conceptual Site Model (CSM) and ground investigation. Gas protection measures, where required, will be designed in accordance with relevant British Standard, guidance and Building Regulations.

Table 7.2.11: Impacts Proposed to be Scoped out of the Assessment for Geology, Hydrogeology and Ground Conditions

Impact	Justification
Construction and Decommissioning	
Land instability and geohazards as a result of earthworks on end users, buildings and infrastructure during the construction and decommissioning phase.	Geohazards and land instability will be considered and managed through the EIA process, taking into account the developing engineering design, in line with relevant design standards and informed by desk studies and ground investigations to be undertaken prior to the commencement of construction works. If required, suitable measures can be secured as a requirement of the DCO. No significant effects are therefore likely.
Impact of ground contamination on construction workers during the construction and decommissioning phase.	Any relevant pollutant linkages will be managed by appropriate health and safety measures. As construction workers are protected under existing health and safety legislation, any potential impacts will be avoided, prevented and reduced through the implementation of standard mitigation measures, including requirements for Personal Protective Equipment (PPE), training and toolbox talks to be included in the CoCP. Ground investigation will also inform the detailed design, where such data is available. An Outline CoCP will be submitted with the application for development consent. No significant effects are therefore likely.
Potential introduction of contaminants through the use and refuelling of construction plant, and the handling of construction material and wastes during construction and decommissioning on human health and the environment. Storage of materials and wastes leading to the generation of potentially contaminated runoff during the construction and decommissioning phase on human health and the environment.	Appropriate controls would be set out within the CoCP and Site Waste Management Plan to manage the storage and handling of construction materials, excavated soils and wastes. An Outline CoCP and Outline Site Waste Management Plan will be submitted with the application for development consent. An emergency response/spill plan would be established with suitable response training established for site workers. Runoff from working areas would be managed appropriately during construction with respect to both quantity and quality. These measures will be secured through the CoCP. No significant effects are therefore likely.
Discovery and disturbance of unforeseen contamination during the construction and decommissioning phase (e.g. earthwork operations, excavations and soil stripping) on human health and the environment.	A watching brief protocol would be specified within the CoCP for earthwork activities to observe for any unforeseen contamination, reducing the risk of disturbance and mobilisation. Suspected contaminated material would be handled and stored separately from other materials in line with an agreed Discovery Strategy or equivalent. These measures will be secured through the CoCP. No significant effects are therefore likely.
Operation and Maintenance	
Accidental spills/pollution into the environment (e.g. uncontrolled leaks, spills from machinery at the Onshore Converter Stations) during the operation and maintenance phase.	Activities associated with the operation and maintenance of the Onshore Transmission Infrastructure above MHWS are unlikely to require the transport or storage of significant volumes of harmful substances. Therefore, the potential impact of spills/contaminant releases on the quality of groundwater receptors during operation and maintenance is unlikely to result in any significant effect. Details of pollution prevention controls will be provided in an Operational Drainage Strategy, to be secured as a requirement of the DCO. No significant effects are therefore likely.
Heat generated by the Onshore Export Cables on groundwater quality, during the operation and maintenance phase.	Onshore Export Cables generate heat that dissipates naturally to the surrounding ground during power transmission. The levels of heat loss and dissipation of heat through the soil can only be determined once further details of the cable voltage, soil structure (including its thermal properties) and the final engineering design are known. This will include consideration of the cable depth (in terms of the receptor that may be affected). However, the cables themselves will consist of conductors wrapped with various materials for insulation, protection, and sealing. Once installed, the electrical cables will be suitably spaced out in order to reduce the mutual heating effect of one cable circuit on another. This enables the cables to effectively carry the large power volumes required without overheating and damaging the cable. It is therefore likely that any heat dissipation will be localised and confined to the areas immediately surrounding the Onshore Export Cables. On this basis, it is unlikely that there will be any impact on the quality or temperature of groundwater at its point of abstraction during operation. This impact is therefore excluded from further consideration.
Existing ground contamination on end users and buildings during the operation and maintenance phase.	Existing ground contamination will be identified and remediated during the construction phase so that the land is suitable for the intended use. Buildings required for the Onshore Converter Stations will be designed in accordance with the relevant Building Regulations ensuring any required appropriate ground gas protection measures are incorporated.

7.2.8 Proposed Assessment Methodology

7.2.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.2.10** is described below.

Legislation and Policy

7.2.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.2.8.3 The assessment of geology, hydrogeology and ground conditions will be undertaken in accordance with the following guidance documents.

- British Standard requirement for 'Soil quality - conceptual site models for potentially contaminated sites'. BS EN ISO 21365:2020 (BSI, 2020).
- Bureau of Land Management (BLM) Manual 3031 (1985) – Energy and Mineral Resource Assessment (BLM, 1985).
- Construction Industry Research and Information Association (CIRIA) Document C532 - Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors (CIRIA, 2001b).
- CIRIA Document C552 - Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA, 2001a).
- CIRIA Document C648: Control of water pollution from linear construction projects. Technical guidance (CIRIA, 2006b).
- CIRIA Document C665: Assessing Risks Posed by Hazardous Ground Gases to Buildings (CIRIA, 2007a).
- CIRIA Document C649: Control of water pollution from linear construction projects. Site guide (CIRIA, 2006a).
- Department for Environment, Food & Rural Affairs (Defra) Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (Defra, 2012).
- Land Contamination: Risk Management (LCRM) (Environment Agency, 2020a).
- The Environment Agency's approach to groundwater protection, version 1.2 (Environment Agency, 2018).

7.2.8.4 The overall assessment will be carried out in accordance with guidance as set out in the Design Manual for Roads and Bridges (DMRB) LA109: Geology and Soils (Highways England *et. al*., 2019) and DMRB LA113: Road drainage and the water environment (Highways England *et. al.,* 2020b), whilst the detailed assessment of the magnitude of impacts and significance criteria for effects will be undertaken using the methodology outlined in DMRB LA104: Environmental assessment and monitoring (Highways England *et. al.,* 2020a).

Assessment of Effects

7.2.8.5 Potential impacts of the Ossian Transmission Infrastructure above MHWS (i.e. those parts of the Landfall above MHWS and the Onshore Transmission Infrastructure) on geology, hydrogeology and ground conditions will be assessed in accordance with the method set out in **section 5.5** of this EIA Scoping Report. Where significant adverse effects are likely to occur, suitable mitigation or compensatory measures will be identified.

7.2.8.6 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for geology, hydrogeology and ground conditions. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.2.8.7 Ongoing engagement will be undertaken through the relevant ETG to ensure that stakeholders are aware of emerging findings from the EIA process and the likely mitigation requirements. The approach to mitigation will be discussed with the ETG, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

Receptor Sensitivity

7.2.8.8 The sensitivity criteria to be used for the assessment of geology, hydrogeology and ground conditions are outlined in **Table 7.2.12**.

Impact Magnitude

7.2.8.9 The criteria for defining the magnitude if impacts to be used in the assessment of geology, hydrogeology and ground conditions are outlined in **Table 7.2.13**.

Significance of Effect

7.2.8.10 The significance of the effect upon geology, hydrogeology and ground conditions will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.2.8.11 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effects with a significance level of moderate or above will be considered to be significant. Where the magnitude of impact is 'no change', no effect would arise.

7.2.8.12 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Table 7.2.12: Sensitivity Criteria

Sensitivity	Criteria
Very High	**Geology**: • Very rare and of international importance with no potential for replacement (e.g. United Nations Educational, Scientific and Cultural Organization (UNSECO) World Heritage Sites, UNESCO Global Geoparks, SSSIs and Geological Conservation Review (GCR) sites where citations indicate features of international importance). Geology meeting international designation citation criteria which is not designated as such. • Excellent quality economically extractable mineral resource. **Groundwater and Contamination**: • Human health: very high sensitivity land use such as residential or allotments. • Surface water: watercourse having a Water Framework Directive (WFD) classification shown in a River Basin Management Plan (RBMP) and Q_{95} ≥ 1.0 m^3/s. Site protected/designated under European Commission (EC) or UK legislation (e.g. Special Areas for Conservation (SAC), Special Protection Areas (SPA), SSSI, Ramsar site, salmonid water)/Species protected by EC legislation. • Groundwater: principal aquifer providing a regionally important resource and/or supporting a site protected under EC and UK legislation. Groundwater locally supports GWDTE. SPZ1.
High	**Geology**: • Rare and of national importance with little potential for replacement (e.g. geological SSSI, ASSI, National Nature Reserve (NNR)). Geology meeting national designation citation criteria which is not designated as such. • Good quality economically extractable mineral resource. **Groundwater and Contamination**: • Human health: high sensitivity land use such as public open space. • Surface water: watercourse having a WFD classification shown in a RBMP and Q_{95} <1.0 m^3/s. Species protected under EC or UK legislation. • Groundwater: principal aquifer providing locally important resource or supporting a river ecosystem. Groundwater locally supports GWDTE. SPZ2.
Medium	**Geology**: • Of regional importance with limited potential for replacement (e.g. Regionally Important Geological Sites). Geology meeting regional designation citation criteria which is not designated as such. • Mineral resource present but unlikely to be economically viable for extraction. **Groundwater and Contamination**: • Human health: medium sensitivity land use such as commercial or industrial. • Surface water: Watercourse not having a WFD classification shown in a RBMP and Q_{95} >0.001 m^3/s. • Groundwater: Secondary aquifer providing water for agricultural or industrial use with limited connection to surface water. SPZ3.
Low	**Geology**: • Of local importance/interest with potential for replacement (e.g. non-designated geological exposures, former quarries/mining sites). • Mineral resource not of sufficient quality or quantity to be economically viable. **Groundwater and Contamination**: • Human health: low sensitivity land use such as highways and rail. • Surface water: watercourses not having a WFD classification shown in a RBMP and Q_{95} ≤0.001 m^3/s.

Sensitivity	Criteria
	• Groundwater: Unproductive strata.
Negligible	**Geology**: • No geological exposures, little/no local interest. • Mineral Resource not present. **Groundwater and Contamination**: • Human health: undeveloped surplus land/no sensitive land use proposed. • No surface waterbodies.

Table 7.2.13: Magnitude of Impact Criteria

Magnitude of impact		Definition
High	Adverse	**Geology**: • Loss of geological feature/designation and/or quality and integrity, severe damage to key characteristics, features or elements. **Contamination**: • Human health: significant contamination identified. Contamination levels significantly exceed background levels and relevant screening criteria (e.g. category 4 screening levels) SP1010 with potential for significant harm to human health. Contamination heavily restricts future use of land. • Surface water: Loss or extensive change to a fishery. Loss of regionally important public water supply. Loss or extensive change to a designated nature conservation site. Reduction in water body WFD classification. • Groundwater: Loss of, or extensive change to, an aquifer. Loss of regionally important water supply. Loss of, or extensive change to GWDTE or baseflow contribution to protected surface water bodies. Reduction in water body WFD classification. Loss or significant damage to major structures through subsidence or similar effects.
	Beneficial	**Geology, Hydrogeology and Contamination:** • Highly beneficial to the geology/hydrogeology environment resources of the area. For example, exposure of new geological formations that may become designated sites of significant regional and or national interest or removal of existing polluting discharge or removing the likelihood of polluting discharges occurring to an aquifer / watercourse. Improvement in water body WFD classification. Recharge of an aquifer.
Medium	Adverse	**Geology:** • Partial loss of geological feature/designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements. **Contamination**: • Human health: contaminant concentrations exceed background levels and are in line with limits of relevant screening criteria (e.g. category 4 screening levels) SP1010. Significant contamination can be present. Control/remediation measures are required to reduce risks to human health/make land suitable for intended use. • Surface water: partial loss in productivity of a fishery. Degradation of regionally important public water supply or loss of major commercial/industrial/agricultural supplies. Contribution to reduction in water body WFD classification. • Groundwater: partial loss or change to an aquifer. Degradation of regionally important public water supply or loss of significant commercial/industrial/agricultural supplies. Partial loss of the integrity of GWDTE. Contribution to reduction in water body WFD classification. Damage to major structures through subsidence or similar effects or loss of minor structures.

Magnitude of impact		Definition
	Beneficial	**Geology, Hydrogeology and Contamination:** • Moderate benefit to the hydrogeological environment/soils resource of the area (e.g. the proposed development results in a brownfield contaminated site that is or is likely to be determined as contaminated land being remediated, contribution to improvement in water body WFD classification or reduction of groundwater hazards to existing structures).
Low	Adverse	**Geology**: • Minor measurable change in geological feature/designation attributes, quality or vulnerability; minor loss of, or alteration to, one or more key characteristics, features or elements. **Contamination**: • Human health: contaminant concentrations are below relevant screening criteria (e.g. category 4 screening levels). Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to reduce risks to human health. • Surface water: Minor effects on water supplies. • Groundwater: minor effects on an aquifer, GWDTEs, abstractions and structures.
	Beneficial	**Geology, Hydrogeology and Contamination:** • Minor benefit to the hydrogeological environment/mineral resources (e.g. the proposed development may result in the exposure of geological formations that may become of significant local interest). • Reduction of groundwater hazards to existing structures.
Negligible	Adverse	**Geology**: • Very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature / designation. Overall integrity of resource not affected. **Contamination**: • Human health: contaminant concentrations substantially below levels outlined in relevant screening criteria (e.g. category 4 screening levels) SP1010 No requirement for control measures to reduce risks to human health/make land suitable for intended use. • Surface water: Negligible effects on water supplies. • Groundwater: No measurable impact upon an aquifer and/or groundwater receptors.

Cumulative Effects and Inter-related Effects

7.2.8.13 The CEA for geology, hydrogeology and ground conditions will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The geology, hydrogeology and ground conditions chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.2.8.14 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on geology, hydrogeology and ground conditions are screened out from the EIA process.

Relevant Consultation

7.2.8.15 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities and the Environment Agency through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Geology, Hydrogeology and Ground Conditions chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Environment Agency;
- Lincolnshire County Council; and
- South East Lincolnshire Councils Partnership.

7.2.9 Next Steps

Contamination

7.2.9.1 The following are proposed as next steps in relation to contamination.

- The risk-based approach to contaminated land assessment, as outlined within guidance document LCRM (Environment Agency, 2020a) will be followed. An initial desk study will be undertaken, which will include review of third-party data (e.g. Groundsure environmental database reports, historical Ordnance Survey maps) for land identified as higher risk of having been subject to potentially contaminative activity.
- A preliminary risk assessment consisting of an appraisal of the source-pathway-receptor 'contaminant linkages' developed from the desk-based research will be undertaken, which is central to the approach used to determine the existence of 'Contaminated Land' as defined in Part 2A of the Environmental Protection Act 1990. For a risk to exist (under Part 2A), all three of the following components must be present to facilitate a potential 'contaminant linkage'.
  - Source of contamination (e.g. primary sources - leaking above ground storage tanks; secondary sources - free phase product (typically hydrocarbon contamination present as a discrete product rather than mixed with soil or water) within the ground or soil/groundwater migration).
  - Receptor (living organisms, ecological systems or property which may be harmed, e.g. end users of site, groundwater, surface water and fauna and flora).
  - Pathway (a route or means by which a receptor can be exposed to or affected by a contaminant) i.e. Target mechanism between the source and receptor (e.g. gas/liquid migration through permeable strata).
- The baseline conditions will be further developed through further detailed assessment and preparation of a CSM following the source-pathway-receptor linkage approach. The CSM will be used to establish the risks posed by the viable pollution linkages and where potentially significant pollutant linkages are identified further assessment and/or ground investigation will be undertaken.
  - Additionally, work to identify potentially impacted abstraction points, including PWSs and GWDTEs will be undertaken to inform associated risk levels.

Mineral Resources

7.2.9.2 The following are proposed as next steps in relation to mineral resources.

- Where it is not practicable to avoid MSAs during the design process, a mineral resource assessment will be undertaken, which will consider the works proposed and geological setting. There will be a requirement to demonstrate that the location and quality of the mineral is known and that the environmental constraints associated with extraction, including the potential for extraction of mineral resources prior to undertaking other forms of development, have been adequately considered. Where necessary, mitigation measures would be proposed to meet the requirements of national and local policy in consultation with the Minerals Planning Authority.

7.3. Hydrology and Flood Risk

7.3.1 Introduction

7.3.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for hydrology and flood risk. The hydrology and flood risk assessment will consider the likely significant effects of the Ossian Transmission Infrastructure (landward of MHWS) on hydrology and flood risk receptors (including water quality and flow regimes). **Section 6.11** of this EIA Scoping Report (offshore water quality) addresses the area seaward of MHWS. Impacts in relation to groundwater are considered within **section 7.2** of this EIA Scoping Report.

7.3.2 Proposed Study Area for the Assessment

7.3.2.1 The study area for hydrology and flood risk will be defined as the Ossian Transmission Infrastructure landward of MHWS (i.e. the Onshore Transmission Infrastructure and those parts of the Landfall located above MHWS), where potential impacts may occur on surface water and flood risk receptors. This will include consideration of receptors within the following areas.

- The area of land to be temporarily and/or permanently occupied during construction, operation, maintenance and decommissioning of the Ossian Transmission Infrastructure landward of MHWS.
- Surface water receptors located within 250 m of land temporarily or permanently occupied during the construction, operation, maintenance and decommissioning of the Landfall and Onshore Export Cable Corridor. The 250 m buffer is considered appropriate for data collection taking into account the likely zone of influence on hydrological receptors but may be extended where hydrologically connected catchments are identified.
- Flood risk receptors located within 1 km of the Onshore Converter Stations. The 1 km buffer has been chosen primarily to identify any existing receptors, assets or infrastructure that have the potential to be affected by flood risk as a result of the Onshore Converter Stations.

7.3.3 Baseline Environment

7.3.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary based on publicly available information. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 7.3.4**.

Hydrological Setting

Main Rivers

7.3.3.2 The Environment Agency (EA) designated Main Rivers within the Onshore Scoping Boundary are listed below and presented within **Figure 7.3.1**:

- Great Eau;
- Wold Drift Drain;
- Unnamed river emptying into the North Sea via Chapel St Leonards;
- River Lynn;
- Partney Beck;
- Wainfleet Haven;
- Wainfleet Relief Channel;
- The Lymn;
- Lady Wath's Beck;
- East Fen Catchwater Drain;
- West Fen Catchwater Drain;
- River Witham;
- South Forty Foot Drain;
- River Welland;
- River Glen; and
- Coronation Channel.

Ordinary Watercourses

7.3.3.3 In addition to the Main Rivers identified above, several ordinary watercourses are present across the Onshore Scoping Boundary. The relevant Lead Local Flood Authority (LLFA), Lincolnshire County Council, will be consulted through the relevant ETG regarding works required within close proximity to watercourses, with further information to be provided as the application progresses.

Internal Drainage Boards

7.3.3.4 The majority of the Onshore Scoping Boundary falls within the jurisdiction of an Internal Drainage Board (IDB). IDBs captured within the Onshore Scoping Boundary are as follows, in order from north to south along the Onshore Transmission Infrastructure:

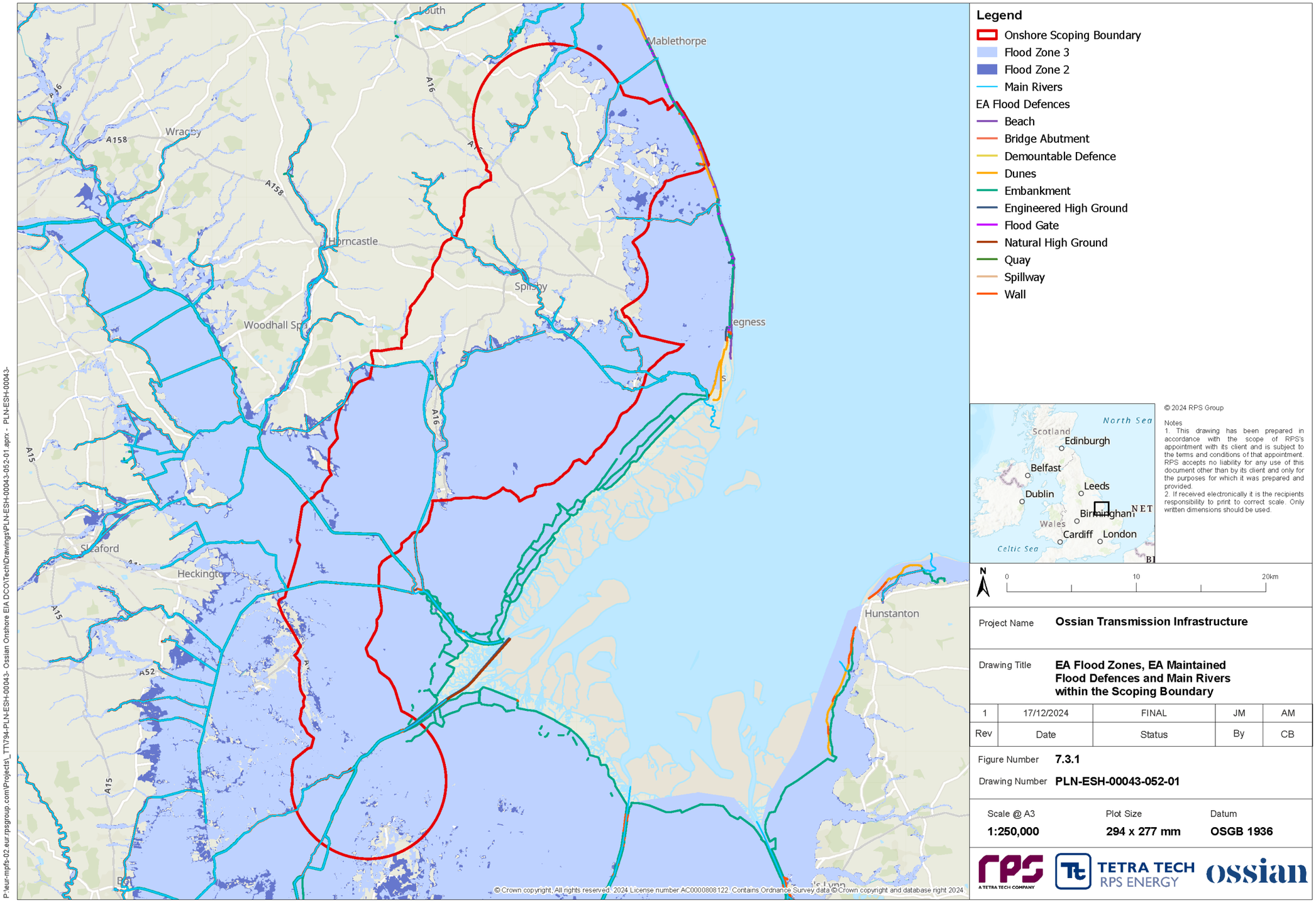
- Lindsey Marsh IDB;
- Witham Fourth District IDB;
- Black Sluice IDB;
- Welland and Deepings IDB; and
- South Holland Internal IDB.

7.3.3.5 Within these regions the IDBs are responsible for the maintenance of watercourses and will be consulted through the relevant ETG regarding works required within close proximity to watercourses and associated drainage infrastructure, with further information to be provided as the EIA process progresses.

WFD Surface Waterbody Status

7.3.3.6 Hydrological features often contribute either directly or indirectly to the overall designation of a waterbody under the WFD.

7.3.3.7 Surface water WFD catchments within the Onshore Scoping Boundary and associated classification are presented within **Table 7.3.1**. Additional information is presented in **section 9** and **Appendix 9.3** of this EIA Scoping Report. Further detailed assessment of the impacts on local WFD designated watercourses will be undertaken within the EIA and via supporting documentation.



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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**EA Flood Zones, EA Maintained Flood Defences and Main Rivers within the Scoping Boundary**

Rev	Date	Status	By	
1	17/12/2024	FINAL	JM	AM

Figure Number	**7.3.1**
Drawing Number	**PLN-ESH-00043-052-01**

Scale @ A3	Plot Size	Datum
1:250,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.3.1: EA Flood Zones, EA Maintained Flood Defences and Main Rivers within the Scoping Boundary

Table 7.3.1: Surface Waterbody Catchment WFD Classification Summary

Name of Waterbody	Waterbody Type	Classification (2022)	Overall Objective
Lincolnshire GB640402492000	Coastal	• Ecological and chemical: N/A	Moderate ecological status by 2015, good chemical status by 2063
Welland GB530503100400	Transitional	• Ecological and chemical: N/A	Moderate ecological status by 2015, good chemical status by 2063
Great Eau (upstream of South Thoresby) GB105029061620	River	• Ecological and chemical: N/A	Good ecological status by 2027, good chemical status by 2063
Burwell Beck GB105029061630	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Trusthorpe Pump Drain GB105029061641	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Great Eau (downstream of South Thoresby) GB105029061660	River	• Ecological: Bad • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Long Eau GB105029061670	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Ingoldmells Main Drain GB105029061700	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Willoughby High Drain GB105029061710	River	• Ecological: Poor • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Boygrift Drain (upper end) GB105029061720	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Anderby Main Drain GB105029061730	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Woldgrift Drain GB105029061750	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Haltham Beck GB105030056260	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Wedlands and North Drains GB105030056441	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Cow Bank Drain GB105030056442	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063

Name of Waterbody	Waterbody Type	Classification (2022)	Overall Objective
River Lymn/Steeping GB105030062430	River	• Ecological: Good • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Glen GB105031050720	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Black Sluice IDB draining to the South Forty Foot Drain GB205030051515	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
East & West Fen Drains GB205030056405	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Maud Foster and Fen Catchwater Drains GB205030056465	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Lower Witham - conf Bain to Grand Sluice GB205030062426	River	• Ecological: Poor • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Welland - conf Greatford Cut to tidal GB205031050685	River	• Ecological: Bad • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Vernatt's Drain GB205031050705	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Moulton River GB205031050755	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2027, good chemical status by 2063
Whaplode River GB205031055495	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Risegate Eau GB205031055525	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
Fosdyke Bridge Outfall GB205031055535	River	• Ecological: Moderate • Chemical: Does not require assessment	Moderate ecological status by 2015, good chemical status by 2063
South Holland Main Drain GB205032050405	River	• Ecological: Moderate • Chemical: Does not require assessment	Good ecological status by 2021, good chemical status by 2063

Flood Risk Setting

Flood Risk from Rivers and Seas

7.3.3.8 EA Flood Zones refer to the probability of flooding from rivers and seas in a given year. Definitions are outlined below within **Table 7.3.2**. The EA Flood Zones within the Onshore Scoping Boundary are presented within **Figure 7.3.1**.

Table 7.3.2: EA Flood Zone Classification Description

Flood Zone	Flood Zone Definitions
Flood Zone 1	Land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%). Land is shown as clear in **Figure 7.3.1** (Department for Levelling Up, Housing and Communities, 2022).
Flood Zone 2	Land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year (Department for Levelling Up, Housing and Communities, 2022).
Flood Zone 3	Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year (Department for Levelling Up, Housing and Communities, 2022).

7.3.3.9 The majority of the Onshore Scoping Boundary, including areas within close proximity to watercourses and land in close proximity to the coastline and Landfall, is within EA Flood Zones 2 and 3.

7.3.3.10 The north west part of the Onshore Scoping Boundary in proximity to Spilsby and Alford and sparse areas within the southern area in proximity to North End, Swineshead and Moulton are located within EA Flood Zone 1.

Surface Water Flooding

7.3.3.11 The EA Surface Water Flood Extents refer to the probability of flooding from surface water sources in a given year. Surface Water Flood Extent definitions are outlined below within **Table 7.3.3**.

Table 7.3.3: EA Surface Water Extent Classification Description

Surface Water Flooding Classification	Extent Definitions
High	Land assessed as having a less than 1 in 30 annual probability of river or sea flooding (<3.3% Annual Exceedance Probability (AEP)) (EA, 2024a).
Medium	Land assessed as having between a 1 in 100 annual probability (1% AEP) (EA, 2024a).
Low	Land assessed as having a 1 in 1000 or greater annual probability (0.1% AEP) (EA, 2024a).
Very Low	Land assessed as having less than 1 in 1,000 annual probability (<0.1% AEP) (EA, 2024a).

7.3.3.12 A very low to high risk of flooding from surface water sources is present across the Onshore Scoping Boundary consisting of localised ponding, overland flow pathways, and overland flow pathways hydraulically connected to local watercourses. Surface water flood risk is displayed on **Figure 7.3.2**.

Reservoir Flooding

7.3.3.13 The central part of the Onshore Scoping Boundary between Boston and Spilsby is at risk of flooding from reservoirs when there is also fluvial flooding. Reservoir flood risk is shown on **Figure 7.3.3**.

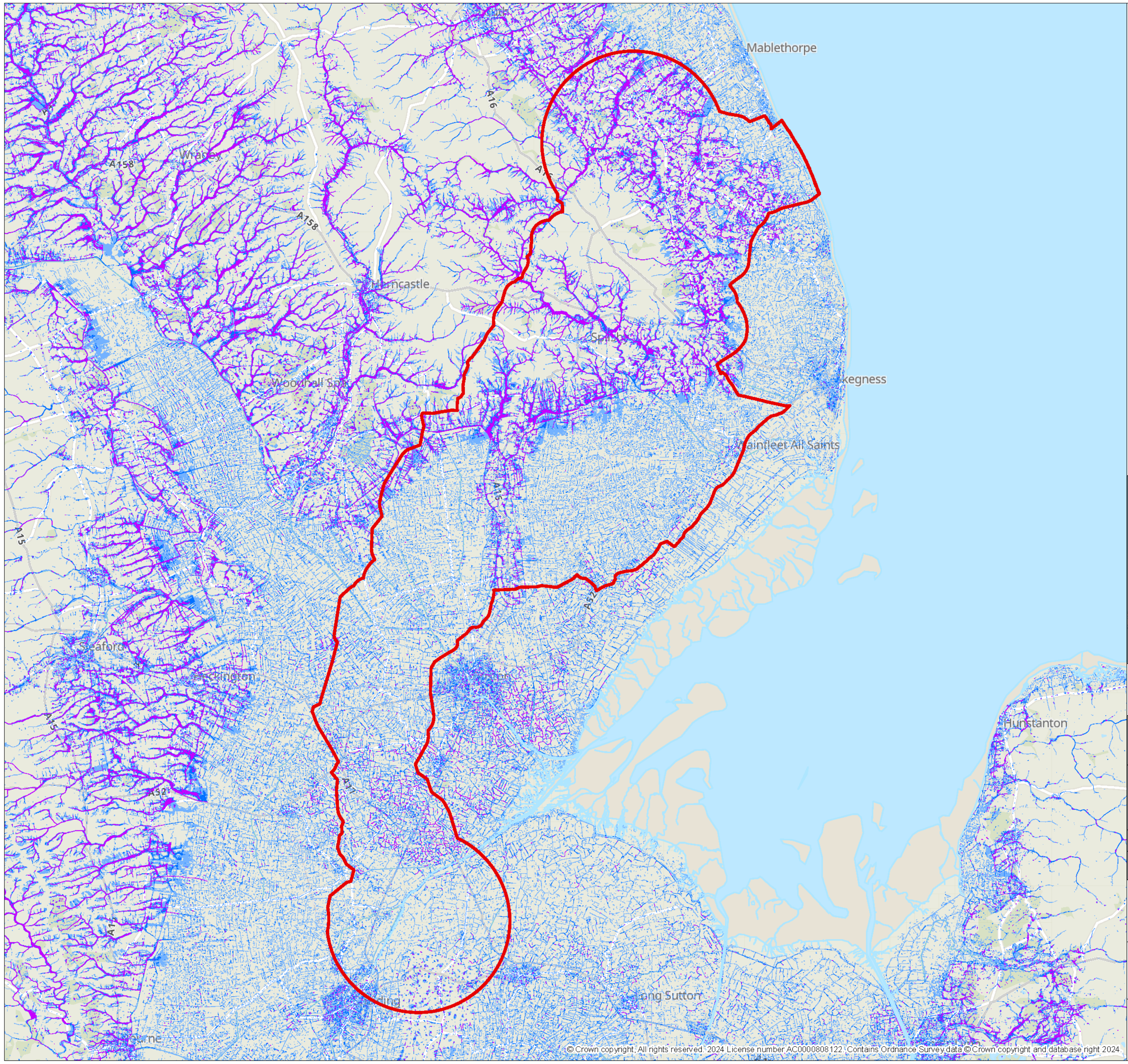
Flood Defences

7.3.3.14 Formally maintained flood defences within the Onshore Scoping Boundary are detailed within the Spatial Flood Defences dataset and presented within **Figure 7.3.1**.

7.3.3.15 Areas of high ground that, by virtue of elevation, offer an informal flood defence may also be present within the Onshore Scoping Boundary. This can include beaches along the coastline.

Historical Flood Events

7.3.3.16 The EA Historical Flood Map indicates several historical flood events have been identified within the Scoping Boundary in proximity to watercourses and the coast. Historical flood events are shown in **Figure 7.3.4**.



Legend

- Onshore Scoping Boundary
- Risk of Flooding from Surface Water Extent: 0.1 percent annual chance
- Risk of Flooding from Surface Water Extent: 1 percent annual chance
- Risk of Flooding from Surface Water Extent: 3.3 percent annual chance

Notes
1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

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0 10 20km

Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**EA Surface Water Flood Risk**

1	17/12/2024	FINAL	JM	AM
Rev	Date	Status	By	CB

Figure Number	**7.3.2**
Drawing Number	**PLN-ESH-00043-053-01**

Scale @ A3	Plot Size	Datum
1:250,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.3.2: EA Surface Water Flood Risk

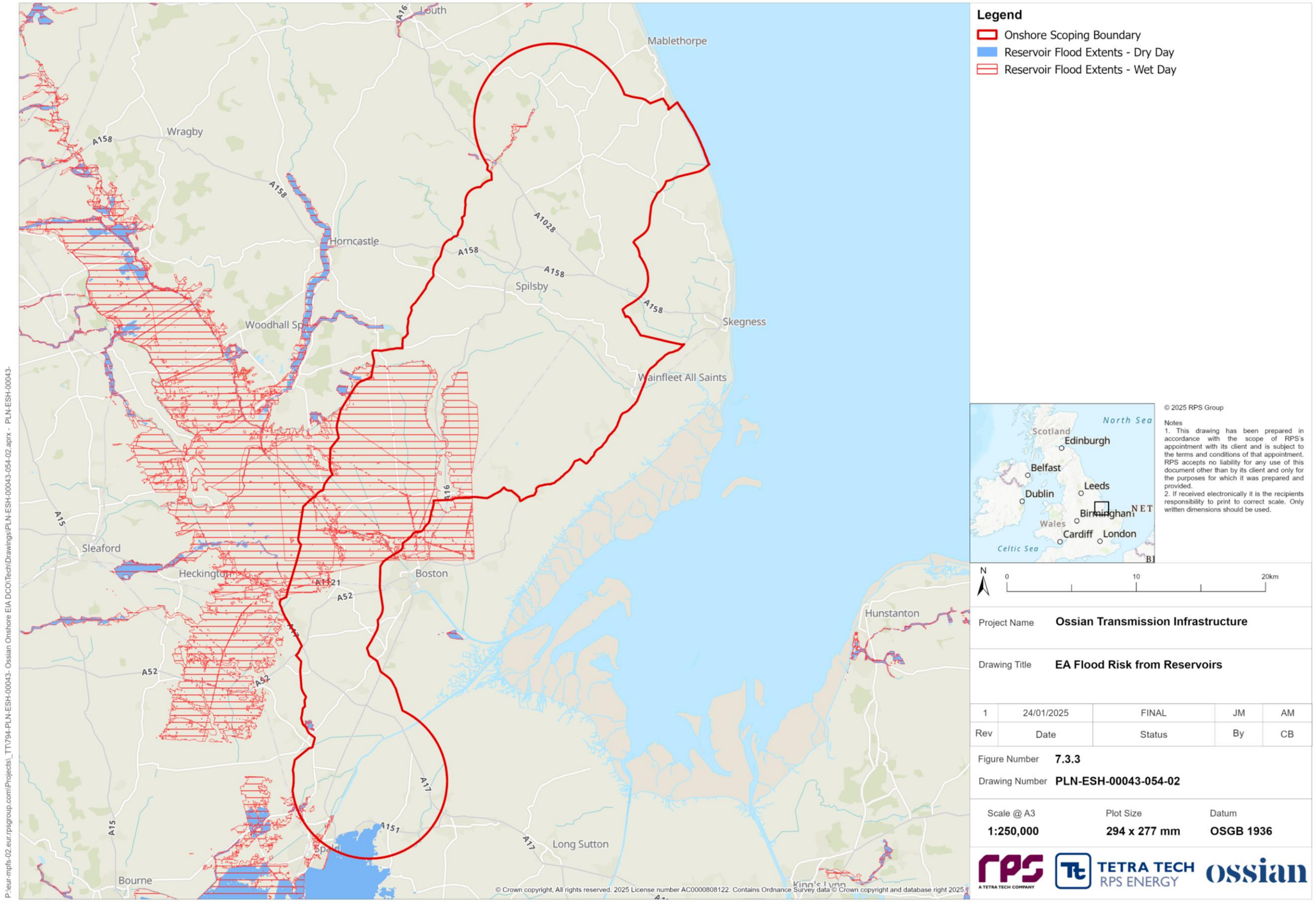
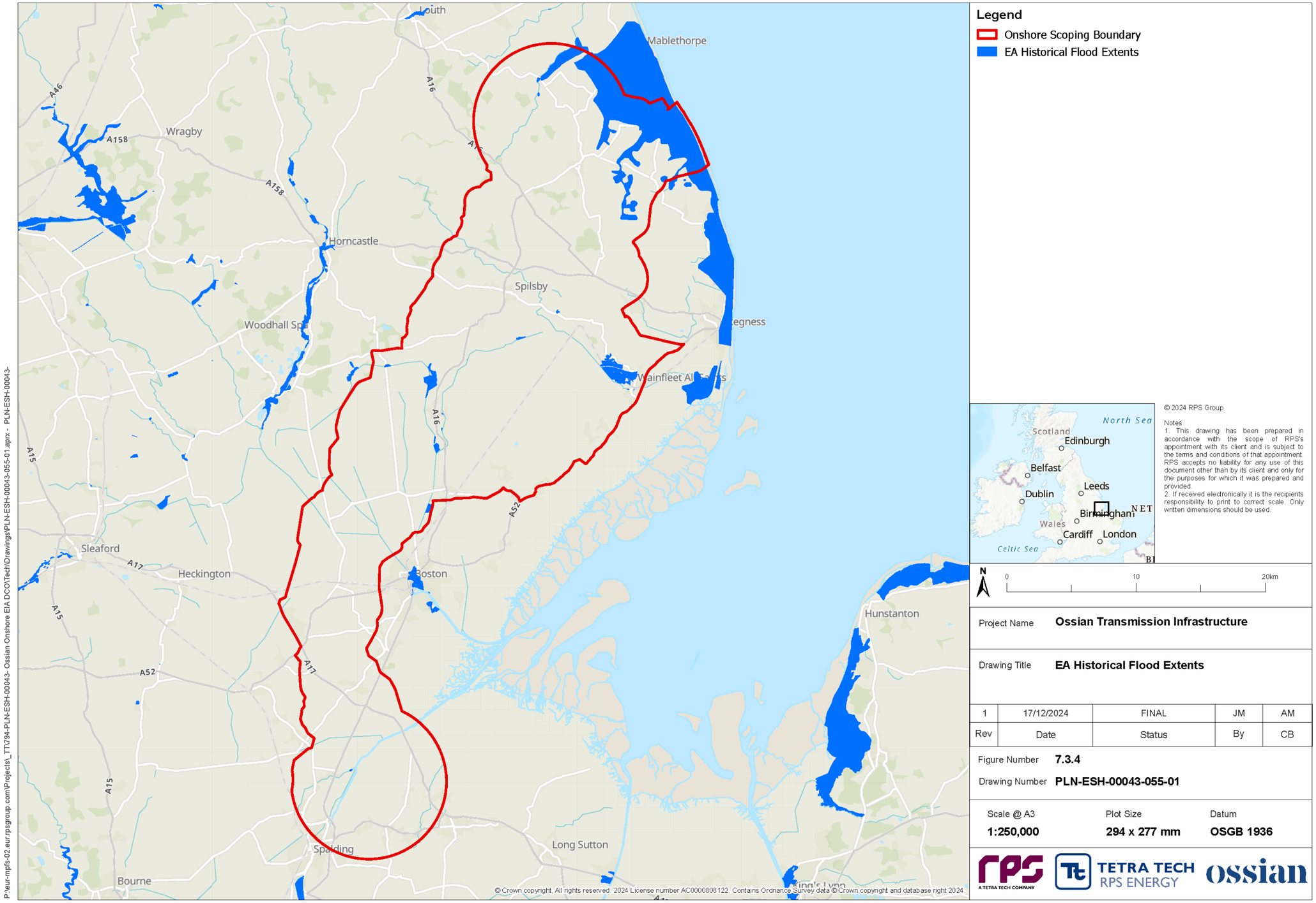


Figure 7.3.3: EA Flood Risk from Reservoirs



Notes
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2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

N

0 10 20km

Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**EA Historical Flood Extents**

Rev	Date	Status	By	
1	17/12/2024	FINAL	JM	AM

Figure Number	**7.3.4**
Drawing Number	**PLN-ESH-00043-055-01**

Scale @ A3	Plot Size	Datum
1:250,000	**294 x 277 mm**	**OSGB 1936**

TETRA TECH RPS ENERGY ossian

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Figure 7.3.4: EA Historical Flood Extents

Designated Areas

7.3.3.17 The Onshore Scoping Boundary also includes the following designated areas, with additional details provided within **Appendix 9.3** of the EIA Scoping Report.

- Drinking water areas.
- Economically significant waters.
- Recreational waters (including bathing waters).
- Nutrient sensitive areas (Nitrate Vulnerable Zones and urban waste water treatment sensitive areas).

Future Baseline Conditions

7.3.3.18 The EIA process will consider the existing baseline conditions within the study area and future baseline conditions (as far as reasonably practicable) in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report.

7.3.3.19 Climate change is expected to alter baseline hydrology and flood risk characteristics. This may affect peak river flow, peak rainfall intensity and sea level rise over the lifespan of the Landfall and Onshore Transmission Infrastructure.

7.3.3.20 No changes in statutory legislation are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.3.4 Proposed Data Sources

Desk Studies

7.3.4.1 The data sources proposed to be used to inform the baseline assessment for the EIA will include published material that is publicly available online; and data which is available to purchase from the EA.

7.3.4.2 An initial desk-based review has identified data sources that provide baseline data coverage of the Onshore Scoping Boundary. This is presented below in **Table 7.3.4**. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.3.4: Hydrology and Flood Risk Baseline Data Sources

Source	Summary
DEFRA Magic Interactive Mapping System (2024)	Provides information regarding statutory and non-statutory designated sites (e.g., water dependent sites designated for nature conservation).
EA Catchment Data Explorer (2024b)	Provides information regarding the water environment, including relevant RBMPs and associated waterbodies.
EA Flood Map for Planning (2021)	Provides information regarding flood risk from rivers and sea and location of flood defences.
EA Long Term Flood Risk Mapping (2024a)	Provides information regarding flood risk from rivers, sea and surface water and areas benefitting from flood defences.
EA Statutory Main River Map (2019)	Provides locations of EA Main Rivers.
EA Historical Flood Extents Map (2024c)	Provides extents of historical flood events.
EA Spatial Flood Defences Map (2024d)	Provides locations and details regarding EA Maintained Flood Defences.
EA Flamborough Head to Gibraltar Point Shoreline Management Plan 3	Provides information regarding risks associated with coastal processes and strategic mitigation measures.
OS Digital Terrain Model (DTM) 50 (2024)	Provides information regarding the topography of the study area allow the overall land slope and specific levels to be assessed.
Anglian river basin district river basin management plan, updated 2022 (2022)	Provides information regarding the policies and measures enacted to protect and improve the water environment (includes rivers, lakes, canals, groundwater, wetlands, estuaries and coastal waters) for the wider benefits to people and wildlife.
East Lindsey District Council 2017 Strategic Flood Risk Assessment (SFRA)	Provides area specific information regarding key sources of flooding (fluvial, tidal, groundwater, surface, sewer) as well as information on historic flooding.
North Kesteven District Council SFRA (2009)	
South East Lincolnshire SFRA (2017)	
South Kesteven District Council SFRA (2017)	
Black Sluice IDB (2024)	Information regarding IDB byelaws, easements, catchments, watercourses and drainage infrastructure.
Lindsey Marsh IDB (2024)	
South Holland Internal IDB (2024)	
Welland and Deepings IDB (2024)	
Witham Fourth District Internal Drainage Board (2024)	

Site-Specific Surveys

7.3.4.3 The following site-specific surveys will inform the baseline assessment for hydrology and flood risk:

- a site walkover by a hydrology specialist to confirm the nature and location of key watercourses in the study area.

7.3.5 Mitigation Measures

7.3.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Watercourse crossings.
  - Details of the proposed methodology for watercourse crossings will be prepared and submitted with the application for development consent. The crossing methods will be developed in discussion with the ETG (including the EA, Lincolnshire County Council as the LLFA and relevant IDBs).
- Drainage Strategy.
  - A Drainage Strategy will be produced, which will set out details of the proposed surface water treatment, attenuation and discharge location for the Onshore Converter Stations. This will apply to the operation and maintenance phase for the Onshore Converter Stations and will seek to ensure an appropriate level of water treatment is provided and that flood risk is not increased downstream or off-site. An Outline Drainage Strategy will be developed in line with the latest relevant drainage guidance and in consultation with the ETG (including the EA, Lincolnshire County Council as the LLFA and relevant IDBs) and will be submitted as part of the application for development consent.
- CoCP.
  - Construction of the Onshore Transmission Infrastructure would be managed through a CoCP, which will set out the principles of good environmental management to be followed, including guidance in relation to pollution control measures, surface water control measures and flood control measures and land reinstatement following construction. An Outline CoCP will be submitted as part of the application for development consent.
- Onshore Decommissioning Plan.
  - An Onshore Decommissioning Plan would be developed in a timely manner in consultation with the relevant stakeholders and prior to the commencement of decommissioning. The Onshore Decommissioning Plan would be developed in accordance with the latest available guidance, legislation and any new technologies at the time of decommissioning, including measures relating to pollution control guidance and flood control measures.

7.3.5.2 The mitigation requirements for hydrology and flood risk will be discussed with relevant local stakeholders, where required, as part of the ETGs prior to submission of the application.

7.3.6 Proposed Scope of the Assessment

7.3.6.1 Potential impacts that are proposed to be scoped into the assessment for hydrology and flood risk are set out in **Table 7.3.5**.

7.3.7 Impacts Proposed to be Scoped Out

7.3.7.1 Impacts that are proposed to be scoped out of the assessment for hydrology and flood risk and the justification are set out in **Table 7.3.6**.

Table 7.3.5: Potential Impacts Proposed to be Scoped In for Hydrology and Flood Risk

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact of increased flood risk arising from surface water runoff during the construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Activities required to facilitate the construction of the Landfall (above MHWS) and Onshore Transmission Infrastructure (e.g. temporary construction compounds, removal of surface vegetation, compaction of soils, excavations, dewatering) may alter drainage patterns and surface water runoff rates on-site, increasing the risk of flooding posed to the surrounding area.	The siting of the Onshore Converter Stations will be informed by existing constraints, including flood risk. Although much of the Onshore Scoping Boundary is located within the floodplain, the Applicant will take into account national policy in relation to flood risk within the Onshore Converter Station siting process and avoid constraints, where practicable. Baseline flood risk data will be determined using desk-based analysis of flood risk data, including product 5 and product 6 data published by the EA and site-specific data from online mapping and reports to inform a Flood Risk Assessment (FRA). The FRA will assess flood risk from all known sources of flooding and make appropriate allowances for climate change. This will include details of the impacts on each flood zone and any temporary or permanent impacts on the functional floodplain. The findings of the assessment will be set out in the ES chapter, which will be informed by the FRA. The impact of flood risk arising from additional surface water runoff will be assessed and mitigated appropriately based on the findings of the FRA. The Outline CoCP will detail surface water management measures and flood control measures to prevent an increase in surface water runoff during the construction phase. Where practicable, consultation with the EA, Lincolnshire County Council as the LLFA and IDBs would be undertaken through the ETG to discuss and agree mitigation measures, such as watercourse crossing methodologies and works on or near existing flood defences and agree appropriate easements from flood defences to prevent damage arising from construction activities.
The impact of increased flood risk arising from watercourse crossings during the construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Watercourse crossings required to facilitate the construction of the Landfall (above MHWS) and Onshore Transmission Infrastructure (e.g. cable watercourse crossings and temporary access watercourse crossings) may increase the risk of flooding posed to the surrounding area if inappropriately designed.	
The impact of increased flood risk arising from damage to existing flood defences (where present/relevant) during the construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	The Landfall (above MHWS) and Onshore Transmission Infrastructure may be required to cross existing formal and informal flood defences. Activities required to facilitate construction may impact the integrity (or efficacy) of flood defence infrastructure and increase the risk of flooding within the site and the surrounding area.	
The impact of increased flood risk arising from a watercourse diversion (if such diversions are required) during the construction of the Onshore Converter Stations.	✓	×	×	Activities required to facilitate construction of the Onshore Converter Stations may require watercourse diversion and an associated increase in flood risk. This will be assessed, where applicable, and controlled through suitable design measures. The temporary works associated with installation of the Landfall and Onshore Export Cables would not require any watercourse diversions.	Existing watercourses (main rivers and ordinary watercourses) will be identified using a desk-based analysis and walkover site survey. Any watercourse diversions would be appropriately designed in consultation with the EA, Lincolnshire County Council as the LLFA and IDBs, where relevant, to ensure continued flow conveyance of watercourses to prevent an increase in flood risk arising from the diversion of watercourses.

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact of increased flood risk arising from surface water runoff during the operation of the Onshore Converter Stations.	×	✓	×	The installation of the Onshore Converter Stations (and any permanent access routes) will result in the creation of impermeable areas of land which may alter drainage patterns and surface water runoff rates on-site, increasing the risk of flooding within the surrounding area.	Baseline flood risk data will be determined using desk-based analysis of flood risk data, including product 5 and product 6 data published by the EA and site-specific data from online mapping and reports to inform the FRA. The FRA will assess flood risk from all known sources of flooding and make appropriate allowances for climate change. Drainage modelling would be undertaken (on above ground infrastructure only), using Causeway Flow or similar software to analyse surface water runoff and inform suitable mitigation measures, including the design of Sustainable Drainage Systems (SuDS) to ensure that runoff from site is maintained at the greenfield runoff rate or a rate agreed as appropriate with the ETG. This will take into account any existing flood modelling held by the LLFA, where this is available and depending on the approach agreed with the ETG. The approach to drainage at the Onshore Converter Station sites will be outlined within an Outline Drainage Strategy which will be produced in consultation with Lincolnshire County Council as the LLFA and IDBs where appropriate.

Table 7.3.6: Impacts Proposed to be Scoped Out of the Assessment for Hydrology and Flood Risk

Impact	Justification
Construction	
The impact of damage to existing water supply, drainage infrastructure and agricultural field drainage during the construction of the Onshore Transmission Infrastructure landward of MHWS.	The site selection process will identify the location of existing infrastructure as far as practicable. For water supply infrastructure, consultation with Anglian Water (the relevant water company for the area within the Onshore Scoping Boundary), pre-commencement surveys, implementation of agreed buffers between existing infrastructure and agreed crossing methodologies will be continued where required. A meeting to introduce the project to consultees, including Anglian Water has been held. Construction drainage measures will be set out in the Outline CoCP and will seek to ensure that flood risk is not increased off site during this phase. The Outline CoCP will include measures to seek to ensure that all land required temporarily for construction would be restored to its former use on completion of the construction works, including restoration of appropriate field drainage. Therefore, the impact of increased flood risk arising from damage to agricultural field drainage during the construction of the Onshore Transmission Infrastructure is unlikely to result in significant effects and is proposed to be scoped out of the assessment for hydrology and flood risk. With suitable measures in place, implemented through requirements of the DCO, activities required to facilitate the construction of the Onshore Transmission Infrastructure are unlikely to impact the integrity (or efficacy) of water supply, drainage infrastructure or agricultural field drainage. Therefore, the impact of increased flood risk arising from damage to water supply and drainage infrastructure during construction is unlikely to result in significant effects and is proposed to be scoped out of the assessment for hydrology and flood risk.
The impact of contaminated runoff (including accidental spillages and leakages of oils, fuel and other polluting substances) on the quality of surface water receptors during the construction of the Onshore Transmission Infrastructure landward of MHWS.	The impact of pollution, including accidental spills and contaminant releases associated with construction could lead to an impact on the quality of surface water receptors. The Outline CoCP will include measures to control the risk of spillage and to ensure that runoff is controlled in line with the latest guidance (such as that set out in **paragraph 7.3.8.3**) or the latest available at that time). It will also define principles for management of surface water runoff on areas of construction, handling and stockpiling of soils and stripped surface cover and control of vehicle movements. The provision of a final CoCP in line with the Outline CoCP will be secured as a requirement of the DCO. Implementation of measures within the CoCP will seek to ensure that the risk of potential spills is reduced and that any such events are identified early and contained at source. With effective control measures in place, significant effects are not likely. In line with other projects in this area, it is proposed that the assessment of effects in relation to contaminated runoff during construction are scoped out.

Impact	Justification
Operation and Maintenance	
The impact of increased flood risk arising from additional surface water runoff during the operation and maintenance of the Onshore Export Cable and Landfall (landward of MHWS).	The Transition Joint Bays and Onshore Export Cables will be buried underground with the surface reinstated using arisings to the pre-development landscape. Therefore, the only changes would be a small increase in the total area of impermeable land as a result of the installation of ground-level inspection covers, which will have a minimal impermeable footprint and will not induce excess runoff. This is unlikely to result in a notable change in drainage patterns and surface water runoff rate. As a result, the impact of flood risk arising from additional surface water runoff during operation and maintenance would not be significant and is proposed to be scoped out of the assessment.
The impact of increased flood risk arising from watercourse crossings, watercourse diversions or impacts on flood defences during the operation and maintenance of the Onshore Transmission Infrastructure landward of MHWS.	Activities associated with operation and maintenance would not result in any further impact on watercourses or flood defences crossed by the Landfall or Onshore Export Cables during the construction phase. Once these watercourses and/or flood defences have been fully reinstated (where required) following completion of construction, no further impacts would occur. No activities are proposed during the operation and maintenance phase that could require any further crossing or diversion of such resources. Therefore, there would be no impact of increased flood risk arising from watercourse crossings/diversions or crossing of flood defences during the operation and maintenance phase. This is therefore proposed to be scoped out of the assessment.
The impact of contaminated runoff on the quality of surface water during the operation and maintenance of the Onshore Transmission Infrastructure landward of MHWS.	Activities associated with the operation and maintenance of the Landfall and Onshore Transmission Infrastructure are unlikely to generate contaminated runoff. Maintenance of the Landfall and Onshore Export Cables would be undertaken remotely, however, the cables may require infrequent on-site inspections and corrective maintenance activities, if and where they may be required. This would be limited in its frequency and nature. With respect to the Onshore Converter Stations, mitigation to control runoff and water quality will be included within the design of the Onshore Converter Station sites. The Outline Drainage Strategy will set out an appropriate level of surface water treatment within the Onshore Converter Stations, including measures to control water quality in line with good practice. It will also outline the routine management and maintenance schedule of the on-site drainage network. The provision of a final Drainage Strategy in line with the Outline Drainage Strategy will be secured as a requirement of the DCO. Therefore, the impact of contaminated runoff on the quality of surface water receptors during operation and maintenance of the Onshore Transmission Infrastructure will be effectively controlled through well-established measures such that it is unlikely to result in significant effects and is proposed to be scoped out of the assessment for water quality and flood risk.
The impact of damage to agricultural field drainage, existing water supply and drainage infrastructure during the operation and maintenance of the Onshore Transmission Infrastructure landward of MHWS.	Activities associated with operation and maintenance phase would not result in any further impact on water supply or drainage infrastructure. Once these assets have been fully reinstated (where required) following completion of construction, no further impacts would occur. No activities are proposed during the operation and maintenance phase that could require any additional crossings of such resources. Therefore, the potential impact of increased flood risk arising from damage to water supply and drainage infrastructure during the operation and maintenance phase is unlikely to result in significant effects and is proposed to be scoped out of the assessment for hydrology and flood risk.
Decommissioning	
The impact of increased flood risk arising from additional surface water runoff during the decommissioning of the Onshore Transmission Infrastructure landward of MHWS.	The decommissioning sequence would generally be the reverse of the construction sequence and would involve similar (or lower) types and numbers of vehicles and equipment. In line with this approach, it is considered that the impacts arising during decommissioning would be similar to or no worse than those assessed at construction. During decommissioning, the Onshore Export Cables may be recovered and removed by pulling the cables through the ducts (e.g. for recycling). Otherwise, they would be left in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure. Cable ducts, joint bays and link boxes would be left *in situ*, to reduce environmental disturbance. For the purposes of EIA, decommissioning of the Onshore Converter Stations is assumed to be similar to the construction and in reverse sequence. This will be undertaken in accordance with the Onshore Decommissioning Plan, which will require works to be undertaken in accordance with the latest guidance at that time.

Impact	Justification
	Where complete decommissioning is required for the Onshore Converter Stations, all electrical infrastructure and buildings would be removed, and any waste arising disposed of in accordance with the waste hierarchy and relevant regulations at the time of decommissioning. Foundations would be broken up and the site reinstated to its original condition or an agreed alternative use. An Onshore Decommissioning Plan would be developed in a timely manner in consultation with the relevant stakeholders and prior to the commencement of decommissioning. The Onshore Decommissioning Plan would be developed in accordance with the latest available guidance, legislation and any new technologies at the time of decommissioning, including measures relating to surface water management and flood control measures. Therefore, the potential impact of increased flood risk arising additional surface water runoff during the decommissioning of the Onshore Transmission Infrastructure is unlikely to result in significant effects and is proposed to be scoped out of the assessment for hydrology and flood risk.
The impact of increased flood risk arising from watercourse crossings, watercourse diversions or impacts on flood defences during the decommissioning of the Onshore Transmission Infrastructure landward of MHWS. The impact of damage to agricultural field drainage, existing water supply and drainage infrastructure during the decommissioning of the Onshore Transmission Infrastructure landward of MHWS.	As set out above, the decommissioning sequence would generally be the reverse of the construction sequence and would involve similar (or lower) types and numbers of vehicles and equipment. In line with this approach, it is considered that the impacts arising during decommissioning would be similar to or no worse than those assessed at construction. Activities associated with decommissioning of the Onshore Transmission Infrastructure would not result in any impact on watercourses, flood defences or drainage infrastructure. No activities are proposed during the decommissioning phase that could require any additional crossing or diversion of such resources. Therefore, there would be no impact of increased flood risk during the decommissioning of the Onshore Transmission Infrastructure and this is therefore proposed to be scoped out of the assessment. An Onshore Decommissioning Plan would be developed in a timely manner in consultation with the relevant stakeholders and prior to the commencement of decommissioning. The Onshore Decommissioning Plan would be developed in accordance with the latest available guidance, legislation and any new technologies at the time of decommissioning.
The impact of contaminated runoff on the quality of surface water and ground receptors during decommissioning of the Onshore Transmission Infrastructure landward of MHWS.	As set out above, the decommissioning sequence would generally be the reverse of the construction sequence and would involve similar (or lower) types and numbers of vehicles and equipment. In line with this approach, it is considered that the impacts arising during decommissioning would be similar to or no worse than those assessed at construction. An Onshore Decommissioning Plan would be developed prior to the commencement of decommissioning. The Onshore Decommissioning Plan would be developed in accordance with the latest available guidance, legislation and any new technologies at the time of decommissioning, including measures relating to pollution control measures. Therefore, the potential impact of contaminated runoff during the decommissioning of the Onshore Transmission Infrastructure is unlikely to result in significant effects and is proposed to be scoped out of the assessment.
All phases	
Water resources	Water would be required during the construction phase. However, as such works would be temporary, new infrastructure to supply water would not be installed and, therefore, water is likely to be supplied to site by tanker. Given the existing water stressed baseline in the area, any temporary water use would be controlled through the CoCP. During operation and maintenance, the infrastructure would be monitored remotely, with any works on site to be limited in frequency and scope. Any water demand during this phase would be negligible. Works during decommissioning would be controlled through the Onshore Decommissioning Plan. No significant effects are anticipated and therefore this is proposed to be scoped out of the assessment.

7.3.8 Proposed Assessment Methodology

7.3.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.3.5** is described below.

Legislation and Policy

7.3.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.3.8.3 Guidance documents relevant to hydrology and flood risk that will be considered within the assessment process include the following.

- Planning Practice Guidance (Ministry for Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities, 2022).
- Designing for Exceedance in Urban Drainage – Good Practice (C635) (CIRIA, 2006c).
- Design Manual for Roads and Bridges. LA113 Road Drainage and the Water Environment (Highways England *et al*., 2020b).
- Environment Agency – former Pollution Prevention Guidance Notes (2014).
- Flood risk assessments: Climate Change Allowances (Environment Agency, 2020b).
- The SuDS manual (C753) (CIRIA, 2015a);
- Site Handbook for the Construction of SuDS (C698) (CIRIA, 2007b).
- Control of Water Pollution from Construction Sites (C532) (CIRIA, 2001b).
- Control of Water Pollution from Linear Construction Projects – Technical Guidance (C648) (CIRIA, 2006a).
- Control of Water Pollution from Linear Construction Projects – Site Guide (C649) (CIRIA, 2006b).
- Environmental Good Practice on Site (third edition) (C692) (CIRIA, 2010); and
- Environment Agency Groundwater Protection Policy (The Environment Agency's Approach to Groundwater Protection) (Environment Agency, 2018).
- Black Sluice Internal Drainage Board Guidance for Property Owners and Developers, 2022.
- Water Management Consortium Advice Note AN01: Buildings, Structures, Planting And Fencing (2023).
- Water Management Consortium Advice Note AN02: Culverts and Bridges (2018)
- Water Management Consortium Advice Note AN03: Environmental Considerations (2019).
- Water Management Consortium Advice Note AN05: Service Crossings (2023).
- Water Management Consortium Advice Note AN06: Surface Water (2023).
- Water Management Alliance, Land Drainage Consent – Guidance for Applicants (2024).

Assessment of Effects

7.3.8.4 Potential impacts of the Landfall (above MHWS) and Onshore Transmission Infrastructure on identified important hydrology features will be assessed within the ES chapter. Where significant adverse effects are likely to occur to hydrology and/or flood risk receptors, suitable mitigation or compensatory measures will be identified.

7.3.8.5 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for hydrology and flood risk. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.3.8.6 The hydrology team will work closely with the authors of other relevant chapters, including the landscape and ecology teams to provide an integrated outline design for the Onshore Converter Station sites. This will seek to reduce impacts as far as practicable and will explore opportunities for potential beneficial impacts.

7.3.8.7 Ongoing engagement will be undertaken through the relevant ETG to ensure that stakeholders are aware of emerging findings from the EIA process and the likely mitigation requirements. The approach to mitigation will be discussed with the ETG, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

7.3.8.8 In accordance with the NPPF, an FRA will be prepared for the Onshore Transmission Infrastructure to outline the existing baseline and future (climate change inclusive) flood risk from all known sources of flooding. The FRA will include calculations of surface water runoff rates and evidence of how surface water will be attenuated within the Onshore Transmission Infrastructure. This will take into account any existing flood modelling held by the LLFA, where this is available and depending on the approach agreed with the ETG.

7.3.8.9 The FRA will be used to inform the design of the Onshore Transmission Infrastructure and mitigation measures, including the Outline Drainage Strategy. The conclusions of the FRA will be referred to in the assessment of hydrology and flood risk in the ES where relevant.

7.3.8.10 An Outline Drainage Strategy will also be prepared alongside the FRA in line with local and national guidance and in consultation with Lincolnshire County Council as the LLFA and IDBs. The Outline Drainage Strategy will detail water treatment and attenuation prior to discharge from the Onshore Converter Stations in addition to an outline foul water drainage strategy.

7.3.8.11 Stage 1 of the WFD Assessment is presented within Appendix 9.3 of this EIA Scoping Report. Stage 2 and Stage 3 of the WFD Assessment will be undertaken assess whether waterbodies and their quality elements are likely to be affected by the proposed development to support the ES in consultation with the EA.

Receptor Sensitivity

7.3.8.12 The criteria proposed to be used for defining the sensitivity of hydrology and flood risk receptors are provided in **Table 7.3.7** below. These are based on Highways England *et al*., 2020b.

Table 7.3.7: Sensitivity Criteria

Sensitivity/ Value	Definition
Very High	• Receptor with little to no capacity to accommodate change, is high value or critical importance to the local, regional or national economy. Receptor is highly vulnerable to impacts that may arise from the development and recoverability is long term or not possible. • Surface Water: WFD current overall status of high. The surface water body supports sensitive aquatic ecological receptors and is extensively used for public water supply and large-scale agricultural use. • Groundwater: Groundwater body supports public and/or large-scale industrial water supply and/or is a principal aquifer. • Flood Risk: Land within Flood Zone 3 or more than one hundred residential properties protected from flooding by flood defence infrastructure or by natural floodplain storage.
High	• Receptor with a low capacity to accommodate change, is of moderate value with reasonable contribution to the local, regional or national economy. Receptor is generally vulnerable to impacts that may arise from the development and recoverability is slow and/or costly. • Surface Water: WFD current overall status of good. Surface water body may support sensitive aquatic ecological receptors and is used is used for public water supply/medium scale industrial or agricultural use. • Groundwater: Groundwater body supports public water and/or large-scale industrial water supply and/or is a principal or secondary A aquifer. • Flood Risk: Land within Flood Zone 3 and/or 2 or between one and one hundred residential properties or industrial premises protected from flooding by flood defence infrastructure or by natural floodplain storage.
Medium	• Receptors with a moderate capacity to accommodate change, is of minor value with small levels of contribution to the local, regional and national economy. Receptor is somewhat vulnerable to impacts that may arise from the development and has moderate to high levels of recoverability. • Surface Water: WFD current overall status of moderate. The surface water features may be locally important for spawning of salmonid species. Surface water body is used for private water supply or small scale industrial/agricultural use. • Groundwater: Secondary A aquifer and/or a groundwater body which supports private water supply or medium scale agricultural/industrial abstractions. • Flood Risk: Flood plain within Flood Zone 2 and/or 1 or limited constraints and a low probability of flooding of residential and industrial properties.
Low	• Receptor with a high capacity to accommodate change, is of low value with little contribution to the local, regional or national economy. Receptor is not generally vulnerable to impacts that may arise from the development and/or has high recoverability. • Surface Water: WFD current overall status of poor. Surface water bodies are not significant in terms of sensitive ecological receptors or fish spawning. Small scale (single residential or commercial use) abstraction licences are present in close proximity. • Groundwater: Secondary undifferentiated strata with no abstraction licences. • Flood Risk: Flood plain within Flood Zone 2 and/or located outside floodplain within Flood Zone 1 or limited constraints and a very low probability of flooding of residential and industrial properties.
Negligible	• Receptor with a very high capacity to accommodate change, is of negligible value with no contribution to local, regional or national economy. Receptor is not vulnerable to impacts that may arise from the development and/or has high recoverability. • Surface Water: WFD current overall status of bad. No sensitive ecological receptors or fish spawning are present within the surface water bodies. No abstraction licences present within the area. • Groundwater: Unproductive strata with no abstraction licences. • Flood Risk: Area outside flood plain (Flood Zone 1) or flood plain with very low probability of flooding industrial properties.

Impact Magnitude

7.3.8.13 The criteria to be used for defining the magnitude of impacts on hydrology and flood risk receptors are provided in **Table 7.3.8** below. These are based on those set out in the DMRB.

Table 7.3.8: Impact Magnitude Criteria

Magnitude of Impact		Definition
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of attribute quality.
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Low	Adverse	Some measurable change in attributes, quality or vulnerability, minor loss or, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to, or positive addition of one or more characteristics, features or elements.
No change	No change	

Significance of Effect

7.3.8.14 The likely significance of effect upon hydrology and flood risk will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in to determine the likely significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.3.8.15 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effects with a significance level of moderate or above will be considered to be significant. Where the magnitude of impact is 'no change', no effect would arise.

7.3.8.16 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.3.8.17 The CEA for hydrology and flood risk will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The hydrology and flood risk chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.3.8.18 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on hydrology and flood risk are screened out from the EIA process.

Relevant Consultation

7.3.8.19 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities and the Environment Agency through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Hydrology and Flood Risk chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Environment Agency;
- Lincolnshire County Council;
- South East Lincolnshire Councils Partnership; and
- relevant drainage boards (including Lindsey Marsh, Witham Forth District, Black Sluice, Welland and Deepings and South Holland Internal Drainage Boards

7.3.9 Next Steps

7.3.9.1 The following are proposed as next steps in relation to hydrology and flood risk.

- The Applicant will continue to engage on the EIA process, through the Evidence Plan process Steering Group and the ETGs. This will allow emerging findings of the EIA process to be discussed, together with suitable mitigation measures.
- The impacts that have been scoped into the assessment for hydrology and flood risk will be assessed in greater detail during the PEIR, following greater refinement of the location and design perimeters of the Onshore Transmission Infrastructure.
- Once the stage of site selection permits, a hydrology site walkover will be undertaken to supplement the desk-based information sources.
- The FRA, Outline Drainage Strategy and Stages 2 and 3 of the WFD Assessment will be undertaken to assess the baseline environment in greater detail and enable the assessment of impacts scoped in allow preparation of draft commitment measures, to be provided within the ES.

7.4. Onshore Ecology and Nature Conservation

7.4.1 Introduction

7.4.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for onshore ecology and nature conservation. The onshore ecology and nature conservation assessment will consider the likely significant effects of the Ossian Transmission Infrastructure (landward of MHWS) on terrestrial habitats and species during construction, operation and maintenance and decommissioning. **Section 6.3** of this EIA Scoping Report (benthic subtidal and intertidal ecology) addresses the area seaward of MHWS.

7.4.1.2 The scope of the assessment for onshore and intertidal bird species is considered separately in **section 7.5** of this EIA Scoping Report.

7.4.2 Proposed Study Area for the Assessment

7.4.2.1 The study area for the assessment of onshore ecology and nature conservation will be defined as the land to be temporarily or permanently required for the Ossian Transmission Infrastructure landward of MHWS (i.e. the Onshore Transmission Infrastructure and those parts of the Landfall located above MHWS) plus the following buffer zones (which vary according to the ecological receptor concerned and are based on application of CIEEM methodology and professional judgement).

- A buffer of 15 km around the Ossian Transmission Infrastructure landward of MHWS for statutory internationally designated sites for nature conservation, including SACs, and Ramsar sites.
- A buffer of 2 km around the Ossian Transmission Infrastructure landward of MHWS for statutory designated sites for nature conservation, including SSSIs, NNRs and Local Nature Reserves (LNRs).
- A buffer of 2 km around the Ossian Transmission Infrastructure landward of MHWS for non-statutory locally designated sites for nature conservation, including Local Wildlife Sites (LWSs), Lincolnshire Wildlife Trust Sites (LWTSs) and Roadside Nature Reserves (RNRs).
- A buffer of 2 km around the Ossian Transmission Infrastructure landward of MHWS for records of UK Biodiversity Action Plan (UK BAP) priority habitats, areas of designated ancient woodland and records of protected or notable species.

7.4.2.2 The location and geographic extent of the study area is presented in **Figure 7.4.1**, **Figure 7.4.2** and **Figure 7.4.3**. The study area will be reviewed and amended as necessary as the project evolves. A precautionary approach has been taken within this scoping report based on professional judgement.

7.4.2.3 The area that will be subject to site-specific surveys will comprise the areas of the Ossian Transmission Infrastructure, landward of MHWS, plus appropriate species-specific survey areas, where required. This will be agreed with the ETG. Further detail regarding the species-specific survey areas proposed to be used for the assessment of onshore ecology and nature conservation is provided in **section 7.4.4**.

7.4.2.4 An outline of the baseline environment for onshore ecology and nature conservation based upon an initial review of relevant receptors within the Onshore Scoping Boundary is provided below. Details of the data sources to be used to inform the more detailed baseline for the EIA are set out in **section 7.4.4**.

7.4.3 Baseline

7.4.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary based on publicly available information. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 7.4.3.**

Designated Sites

Internationally Designated Sites

7.4.3.2 A summary of statutory internationally designated sites for nature conservation within 15 km of the Onshore Scoping Boundary is provided in **Figure 7.4.1** below and presented in **Figure 7.4.1**.

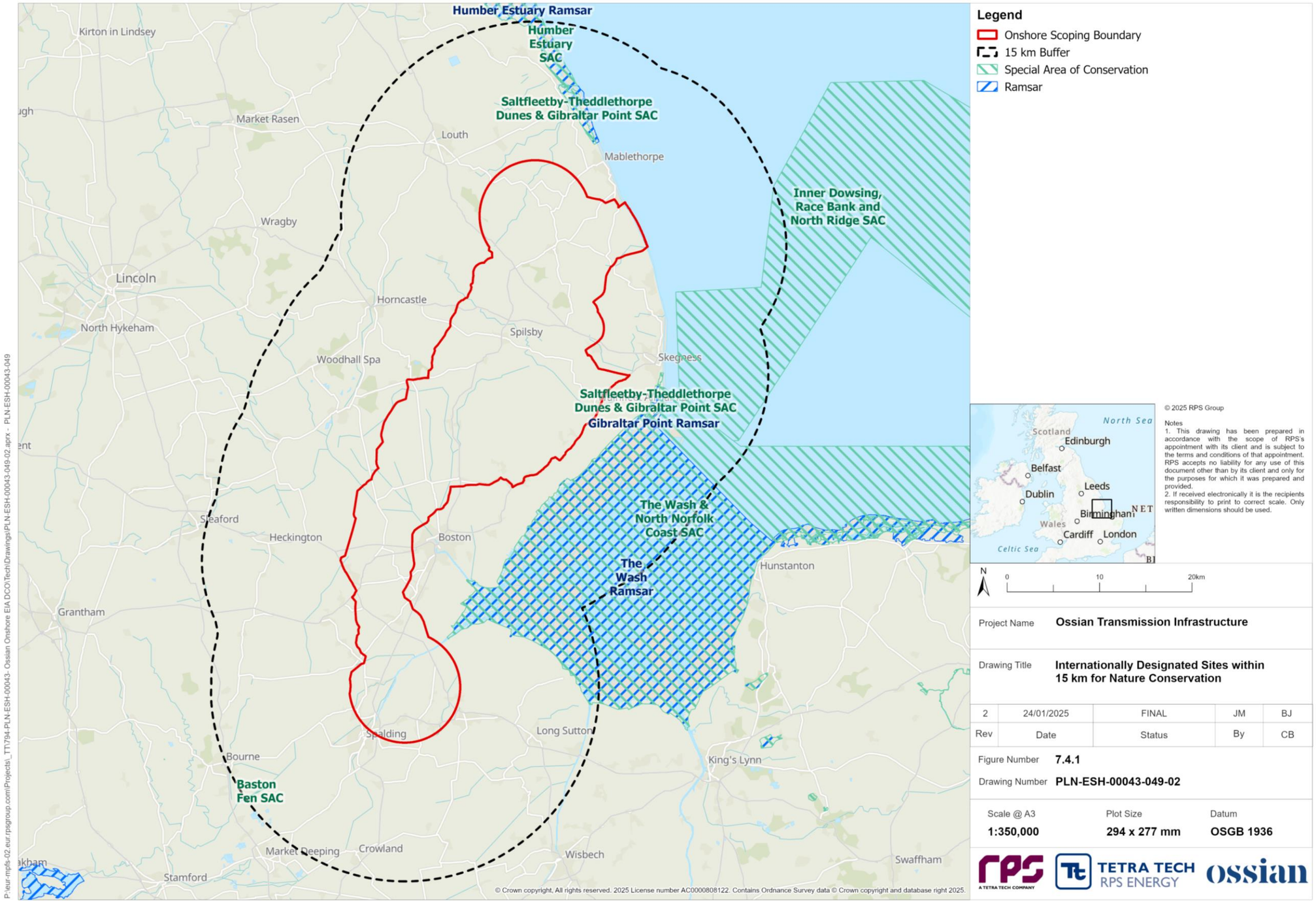


Figure 7.4.1: Internationally Designated Sites within 15 km

Table 7.4.1: Internationally Designated Sites within 15 km

Designated Site	Distance from Onshore Scoping Boundary (km)	Description
Baston Fen SAC	12.2	Counter Drain, a large slow-flowing drainage channel adjacent to Baston Fen, designated for its diverse community of aquatic and emergent plants. Site also supports diverse assemblage of freshwater invertebrate species and fish and supports the Annex II species spined loach (*Cobitis taenia*).
Gibraltar Point Ramsar site	3.2	Designated for coastal habitats with diverse flora and fauna, waterbirds.
Humber Estuary Ramsar site	4	Designated for estuarine habitats including dunes, systems, humid dune slacks and intertidal habitats and saltmarshes. Supports breeding population of natterjack toad at Saltfleetby-Theddlethorpe dunes.
Humber Estuary SAC	8.5	Designated for its priority habitats including marine and coastal features, such as sandbanks, saltmarsh, shifting dunes, mudflats and sandflats. It is also designated for its populations of river and sea lamprey, and grey seals.
Inner Dowsing, Race Bank and North Ridge SAC	5.3	Habitats located off the south Lincolnshire coast in the vicinity of Skegness, occupying the Wash approaches; this is an area of shallow water encompassing a wide range of sandbanks and biogenic reef of the worm *Sabellaria spinulosa*.
Saltfleetby-Theddlethorpe Dunes and Gibraltar Point SAC	3	Designated for coastal dune habitats supporting diverse assemblage of plants, waterbirds and breeding natterjack toad.
The Wash and North Norfolk Coast SAC	1	Designated for its system of intertidal and submerged coastal habitats.
The Wash Ramsar site	1	Designated for estuarine coastal habitats including extensive saltmarshes, intertidal banks of sand and mud, shallow water and deep channels.

Statutory Designated Sites

7.4.3.3 A summary of statutory designated sites for nature conservation within 2 km of the Onshore Scoping Boundary is provided in **Table 7.4.2** below and presented in **Figure 7.4.2**.

Table 7.4.2: Statutory Designated Sites within 2 km

Designated Site	Distance from Onshore Scoping Boundary (km)	Description
Bratoft Meadows SSSI	Within	Designated for species-rich neutral grassland. One of the remaining areas of permanent grassland not dominated by plants associated with chalk and limestone.
Calceby Marsh SSSI	Within	Designated as an outstanding example of a base-rich marsh.
Candlesby Hill SSSI	Within	Designated for being one of the best remnants of the once extensive chalk grasslands of South-east Lincolnshire.
Claxby Chalk Pit SSSI	Within	Designated for its calcareous grassland and geological features.
Hoplands Wood SSSI	Within	Designated for being one of the best remaining examples of oak/ash ancient woodland in north Lincolnshire.
Jenkins Carr SSSI	Within	Designated for being a species rich example of alder carr, a habitat now rare in the area, with stream and swamp communities of regional importance.
Keal Carr SSSI	Within	Designated for being an example of a base-rich springline alder woodland, especially characteristic of the southern Lincolnshire.
Mavis Enderby Valley SSSI	Within	Designated for diverse habitats, including grasslands, marshes, and woods, supporting a rich variety of plant and animal species, particularly notable for its breeding birds and unique flora.
Muckton Wood SSSI	Within	Designated for being a fine example of primary woodland on boulder clay at the eastern edge of the Lincolnshire.
Sea Bank Clay Pits SSSI	Within	Designated as they support uncommon aquatic plant communities characteristic of the slightly brackish, eutrophic (nutrient-rich) water in addition

Designated Site	Distance from Onshore Scoping Boundary (km)	Description
		to extensive reedbeds and a rich marginal wetland flora.
Skendleby Psalter Banks SSSI	Within	Designated for its unimproved wildflower-rich grassland.
South Thoresby Warren LNR	Within	Designated for its successional grassland community.
Surfleet Lows SSSI	Within	Designated as Surfleet Lows is one of the few remaining wet alluvial meadows in Lincolnshire which has not been subjected to agricultural improvement.
Swaby Valley SSSI	Within	Designated as the glacial overflow valley supports two habitats now scarce in Lincolnshire - floristically diverse, lime-rich marsh and unimproved chalk turf.
The Wash SSSI	1.0	Designated for wintering birds and represents an exceptional system of intertidal flats and saltmarshes.
Troy Wood SSSI	1.6	Designated as this extensive oak woodland is one of the best surviving examples of those found on fen-edge sands and gravels in mid-Lincolnshire with a diverse flora typical of ancient sites managed traditionally as coppice with standards.
Vernatts Drain LNR	Within	Designated for its variety of flowering plants and invertebrate community.
Willoughby Branch Line LNR	Within	Designated for its variety of flowering plants and invertebrate community.
Willoughby Meadow SSSI	Within	Designated as this meadow is the best example of the permanent unimproved neutral grassland once common over Lincolnshire Middle Marsh boulder clay.
Willoughby Wood SSSI	Within	Designated as Willougby Wood is representative of the series of ancient woodlands found on the middle Marsh Boulder Clay on the edge of the Lincolnshire.

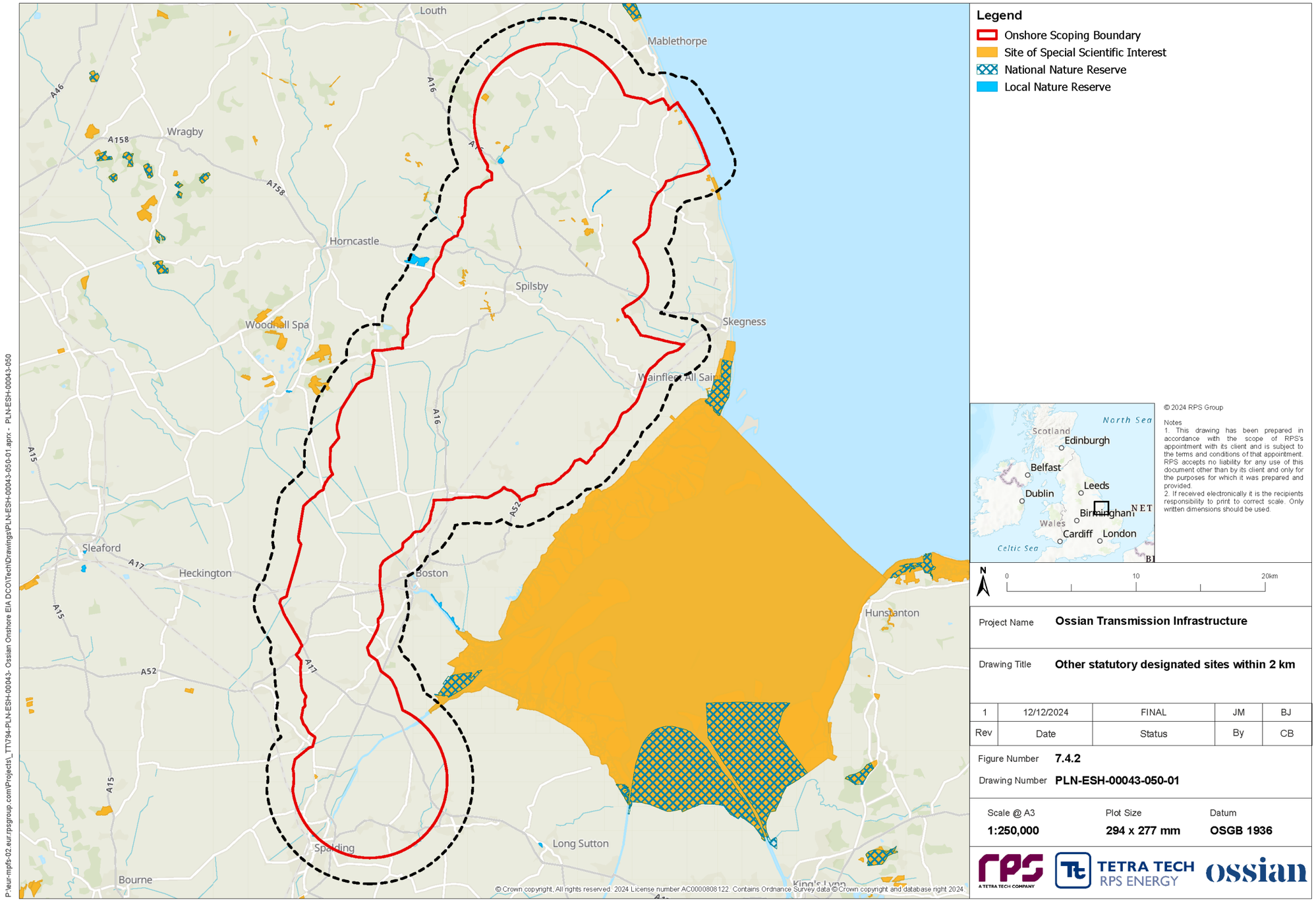
Non-statutory Designated Sites

7.4.3.4 There are 591 non-statutory designated sites for nature conservation located within 2 km of the Onshore Scoping Boundary. Of these, 192 locally designated sites are within the Onshore Scoping Boundary, which predominately comprise LWSs, interspersed with LWTSs and RNRs. It should be noted that most of these locally designated sites for nature conservation are situated towards the northern extent of the Onshore Scoping Boundary.

7.4.3.5 In addition, several areas of ancient woodland are located within the Onshore Scoping Boundary, many of which are also designated as either LWSs or LWTSs. The following areas of ancient woodland are located within the Onshore Scoping Boundary:

- Muckton Wood;
- Authorpe Scrub;
- Hall Wood;
- Tothill/ Claythorpe Woods;
- Withern Woods;
- Swinn Wood;
- Hornby/ Mother Woods;
- Rigsby Woods;
- Fordington Wood;
- Callow Carr;
- Moon Wood; and
- Hoplands Wood.

7.4.3.6 The location and geographic extent of non-statutory designated sites for nature conservation within 2 km of the Onshore Scoping Boundary is presented in **Figure 7.4.3**.



Notes
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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Other statutory designated sites within 2 km**

Rev	Date	Status	By	Check
1	12/12/2024	FINAL	JM	BJ

Figure Number	**7.4.2**
Drawing Number	**PLN-ESH-00043-050-01**

Scale @ A3	Plot Size	Datum
1:250,000	**294 x 277 mm**	**OSGB 1936**

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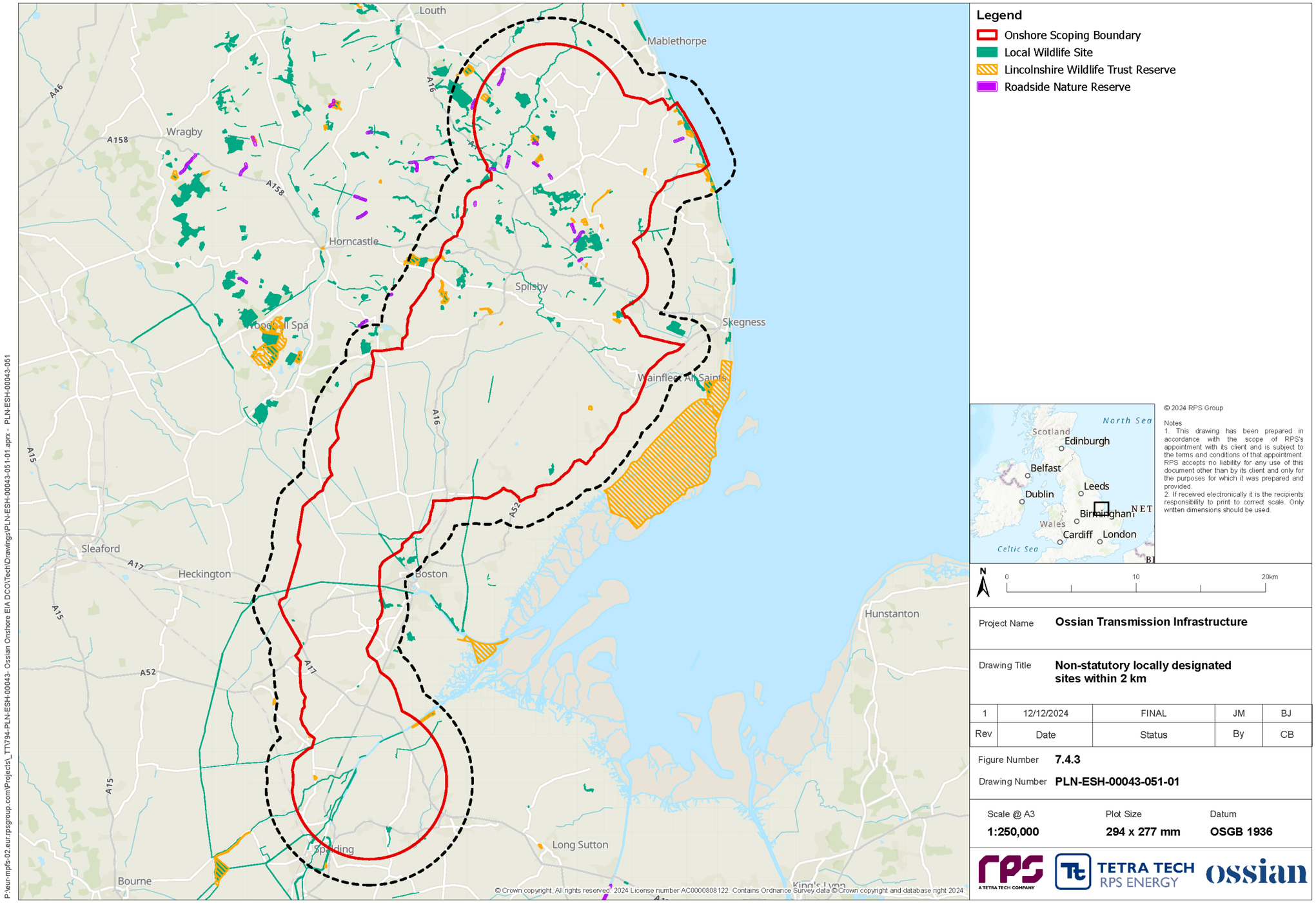
Figure 7.4.2: Other Statutory Designated Sites within 2 km



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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Non-statutory locally designated sites within 2 km**

Rev	Date	Status	By	
1	12/12/2024	FINAL	JM	BJ

Figure Number	**7.4.3**
Drawing Number	**PLN-ESH-00043-051-01**

Scale @ A3	Plot Size	Datum
1:250,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.4.3: Non-statutory Designated Sites within 2 km

Habitats and Flora

7.4.3.7 The land within the Onshore Scoping Boundary is dominated by intensive arable land that is likely to be of low ecological value. However, there are areas of UK BAP habitats, including coastal and floodplain grazing marsh associated with coastal habitats (near the Landfall) as well as scattered areas of lowland calcareous grassland (often in association with former quarries). The area within the Onshore Scoping Boundary also includes lowland meadow, good quality semi-improved grassland, lowland mixed deciduous woodland and mudflats and reedbeds associated with some of the larger tidal river crossings at the southern end, such as River Witham, South Forty Foot Drain and the River Welland. It is noted that some of the UK BAP priority habitats overlap with identified LWSs and LWTSs.

7.4.3.8 Ancient woodland is typically rare within the administrative area of Lincolnshire County Council. However, several areas of ancient woodland coincide with the Onshore Scoping Boundary. These include Swinn Wood, Withern Wood and Hornby/Mother Wood. It should be noted that Swinn Wood is also a LWS and LWTS, whilst Mother Wood is a LWTS.

7.4.3.9 Any rare/notable floral species would reasonably be expected to be found within the designated sites and/or areas of UK BAP priority habitats, such as lowland meadow and lowland calcareous grassland. However, arable habitats may support rare arable weeds along marginal/less intensively farmed headlands. These include corncockle (*Agrostemma githago*), common cudweed (*Filago vulgaris*) and corn parsley (*Petroselinum segetum*).

7.4.3.10 There are also a large number of watercourses (mostly man-made ditches/ drains) that form the boundaries of the arable farmland within low-lying areas.

Protected Species

7.4.3.11 The existing evidence base, including information available for the Eastern Green Link, Grimsby to Walpole, Outer Dowsing and Viking Link projects, has been reviewed, as these projects are located within a similar area of Lincolnshire. This review identified the following protected species which may be located within the Onshore Scoping Boundary and may require consideration in the assessment of onshore ecology and nature conservation.

- **Natterjack toad** (*Epidalea calamita*): a breeding population is known to be present at coastal sand dunes at Saltfleetby and Theddlethorpe and may be relevant to impacts associated with the Landfall.
- **Great Crested Newt** (GCN) (*Triturus cristatus*): there are scattered populations of GCN within the area. This species may be present in suitable habitats within the Onshore Scoping Boundary.
- **Reptiles**: common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*) have all been all recorded in the county and may be present in suitable habitats within the Onshore Scoping Boundary.
- **Bats**: records in the county of barbastelle (*Barbastella barbastellus*), brown long-eared (*Plecotus auratus*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), daubenton's (*Myotis daubentonii*), leisler's (*Nyctalus leisleri*), Nathusius' pipistrelle (*P. nathusii*), natterer's (*M. nattereri*), noctule (*N. noctula*) and whiskered (*M. mystacinus*). Bats may utilise hedgerows, woodland and other linear landscape features for foraging and commuting within the Onshore Scoping Boundary.
- **Badger** (*Meles meles*): this species may be present in suitable habitats within the Onshore Scoping Boundary.
- **Brown hare** (*Lepus europaeus*): this species may be present throughout the arable habitats within the Onshore Scoping Boundary.
- **Water vole** (*Arvicola amphibius*): there are numerous ditches, drains and watercourses throughout the study area that may support these species.
- **Otter** (*Lutra lutra*): there are numerous ditches, drains and watercourses throughout the study area that may support these species.
- **Invertebrates**: Most of the habitats within the Onshore Scoping Boundary comprise intensively farmed arable land and heavily managed drainage ditches, which are unlikely to support any rare or notable terrestrial or aquatic invertebrates. However, some of the more botanically diverse grasslands and coastal dune habitats may support a more interesting invertebrate assemblage.
- **White-clawed crayfish** (*Austropotamobius pallipes*): has been recorded in the county on the River Witham and may be present in other watercourses in the catchment within the Onshore Scoping Boundary.
- **Common toad** (*Bufo bufo*): there are ponds within the Onshore Scoping Boundary that may support this species.
- **Migratory fish and European eel** (*Anguilla anguilla*) - potentially present on watercourses within the Onshore Scoping boundary. European eels potentially migrate along the River Welland and River Haven.

7.4.3.12 The list of protected species to be considered will be informed by a detailed desk study and subsequent site-specific surveys. The extent and methodology of surveys will be discussed through the relevant ETG.

Future Baseline Conditions

7.4.3.13 In the absence of the Ossian Transmission Infrastructure, and assuming the continuation of ongoing intensive agricultural cultivation across much of the area within the Onshore Scoping Boundary, it is reasonable to assume that there would be few changes to the baseline conditions in the future. It is also expected that the ongoing management of sites of ecological importance would, in many cases, sustain the current trend towards favourable condition of these sites.

7.4.3.14 The Inter-Agency Climate Change Forum (IACCF, 2010) found that climate change affects UK biodiversity by altering species distribution, abundances, and seasonal events. Coastal freshwater and wetland habitats are at risk from sea level rise and changing rainfall, while farmland habitats are more resilient. Coastal habitats like saltmarsh and sand dunes may be impacted by a projected 1 m sea level rise by the century's end. Changes in rainfall and temperature could affect ponds and minor watercourses, leading to declines in amphibians, wetland plants, and

invertebrates. New pests and pathogens, linked to climate change, also pose a threat to the ecological baseline.

7.4.3.15 The potential implications of climate change with respect to onshore ecology and nature conservation will be considered in the assessment, where information is available. Climate change will also be taken into account in any recommendations for landscape and biodiversity planting.

7.4.3.16 No changes in statutory legislation (other than in relation to biodiversity net gain) are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.4.4 Proposed Data Sources

Desk Studies

7.4.4.1 A summary of the desk study sources proposed to be used for the assessment of onshore ecology and nature conservation is provided in **Table 7.4.3** below. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.4.3: Desk Study Sources

Title	Source	Summary
MAGIC designated site mapping data	MAGIC	Provides details for internationally (e.g. SACs and Ramsar sites), nationally designated sites (e.g. SSSIs, NNRs, LNRs) for nature conservation, UK BAP priority habitats and areas of designated ancient woodland.
Lincolnshire Environmental Records Centre (LERC)	LERC	Provides information regarding protected and notable species records, non-statutory local sites designated for nature conservation (e.g. LWSs, LWTSs).
Search for designated site details	Natural England	Provides detailed information about sites designated for nature conservation, including internationally (e.g. SACs and Ramsar site), nationally designated sites (e.g. SSSIs, NNRs, LNRs).
Joint Nature Conservation Committee (JNCC) UK Protected Area website	JNCC	Provides detailed information about sites designated for nature conservation, including internationally (e.g. SACs and Ramsar site), nationally designated sites (e.g. SSSIs, NNRs, LNRs).
Woodland Trust Ancient Tree Inventory	Woodland Trust	Provides details regarding designated ancient, veteran and notable trees.
East Lindsey District Council Adopted Local Plan (2018)	East Lindsey District Council	Provides details regarding non-statutory locally designated sites for nature conservation.
South East Lincolnshire Local Plan 2011-2036	Boston Borough Council and South Holland District Council	Provides details regarding non-statutory locally designated sites for nature conservation.

Site-specific Surveys

7.4.4.2 A summary of the site-specific surveys to be undertaken to inform the assessment of onshore ecology and nature conservation is provided in **Table 7.4.4** below.

Table 7.4.4: Site-specific Surveys

Survey type	Methodology	Survey extent	Survey timings
UK Habitat Classification Surveys and protected species appraisal	Habitat survey and mapping to UKHabs classification (UK Hab Ltd, 2023). To include records of an invasive non-native species, if present.	Ossian Transmission Infrastructure landward of MHWS with a 50 m buffer (where accessible).	Year round
National Vegetation Classification (NVC)	Quadrat surveys to allocated habitats to NVC categories (Rodwell, 2006). For arable weeds, botanical survey undertaken by appropriately experienced botanist if required.	Habitats identified as potentially botanically diverse affected by the Ossian Transmission Infrastructure landward of MHWS. Arable habitats identified as potentially botanically diverse within the area for the Onshore Transmission Infrastructure.	From May to September
Hedgerow survey	Surveys to collect sufficient information on species, structure and supporting features (Defra, 2007).	Any hedgerows within Ossian Transmission Infrastructure landward of MHWS. Hedgerows will be surveyed to determine whether they are important under the Hedgerow Regulations 1997.	From April to October
GCN	Habitat Suitability Index (HSI) assessment (English Nature, 2001; ARG UK, 2010). Collection of eDNA samples in accordance with standard methods (Williams, 2013).	eDNA surveys of all ponds identified as potentially suitable for GCN within 250 m of the Ossian Transmission Infrastructure landward of MHWS. Approach to be discussed with ETG, including potential to use district licensing approach.	From mid-April to the end of June
Reptiles	Presence/absence surveys (seven visits) using artificial refuges and visual observation transects. Deployment of artificial refuges at appropriate densities (Froglife, 1999).	Surveys of habitats suitable for supporting reptiles within the area for the Onshore Converter Stations and associated permanent access (in suitable weather conditions). Reptile surveys are not proposed for areas where habitats will be temporarily impacted (i.e. Onshore Export Cable, Landfall, temporary construction compounds, temporary access) unless they are evaluated as highly suitable for reptiles.	From April to October
Bats	Preliminary Roost Features (Collins, 2024).	Structures within the Ossian Transmission Infrastructure landward of MHWS that may be suitable for roosting bats.	Year round
	Ground Level Tree Assessments (Collins, 2024).	Trees within the Ossian Transmission Infrastructure landward of MHWS that may be suitable for roosting bats.	Year round
	Aerial inspection (Collins, 2024).	Aerial inspection tree climbing of trees identified within the area for the Ossian Transmission Infrastructure landward of MHWS as having bat roost potential.	From April to November
	Emergence surveys (Collins, 2024).	Emergence surveys of structures identified within Ossian Transmission Infrastructure landward of MHWS as having bat roost potential.	From May to September

Survey type	Methodology	Survey extent	Survey timings
Water vole	Habitat suitability appraisal (Dean *et al.* 2016; Strachan et al. 2011).	Initial walkover survey of all ditches and watercourses within the Ossian Transmission Infrastructure landward of MHWS to identify potential for water voles to be present.	Year round
	Presence/ absence surveys (Dean *et al*. 2016; Strachan et al. 2011).	Targeted surveys of ditches and watercourses with highest water vole potential/ key areas identified through stakeholder consultation as supporting water vole populations.	
Otter	Habitat suitability appraisal (Chanin, 2003).	Initial walkover survey of all ditches and watercourses within the Ossian Transmission Infrastructure landward of MHWS to identify potential for otter to be present.	Year round
	Presence/ absence survey (Chanin, 2003).	Targeted surveys of ditches and watercourses with highest water vole potential/ in key areas identified through stakeholder consultation as supporting otter populations.	
Badger	Presence/ absence survey (Harris *et al.* 1989).	Survey to identify setts within 30 m of the Ossian Transmission Infrastructure landward of MHWS. Camera trapping may be deployed to confirm activity status.	Year round
Terrestrial invertebrates	Habitat suitability appraisal (Jukes, 2021).	Initial habitat appraisal survey to identify potential high value habitats for terrestrial invertebrates within the Ossian Transmission Infrastructure landward of MHWS.	Year round
	Surveys to be undertaken as necessary in accordance with standard guidance (Drake *et al.,* 2007).	Scope of further surveys dependent on habitats present but may include up to three further surveys to collect samples.	From March to September
Aquatic invertebrates	Habitat suitability appraisal (Jukes, 2021).	Initial habitat appraisal survey to identify potential high value habitats for aquatic invertebrates (including white-clawed crayfish) within the Ossian Transmission Infrastructure landward of MHWS.	Year round
	Methodology dependent on habitats identified.	Scope of further surveys within the area for the Onshore Transmission Infrastructure dependent on habitats present but may include up to six further surveys to collect samples.	From March to September
Fish and eels	Habitat suitability appraisal (Giles *et al.* 2005)	Initial habitat appraisal survey to identify potential high value habitats for fish and eels within the Ossian Transmission Infrastructure landward of MHWS. Further surveys may be undertaken of high value watercourses that cannot be avoided through the adoption of trenchless crossing methods. Surveys not proposed for watercourses to be crossed by trenchless methods.	Year round

7.4.5 Mitigation Measures

7.4.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Avoidance of impacts through sensitive site selection to avoid designated sites, ancient woodland and other sensitive habitats/features, where practicable (with consideration of trenchless techniques where avoidance is not feasible).
- Consideration of trenchless techniques for river and watercourse crossings to reduce impacts to aquatic and riparian habitats.
- Consideration of trenchless techniques for particularly sensitive hedgerow crossings to avoid habitat fragmentation effects.
- Soil Management Plan – which will contain measures to protect and maintain the quality of soils, including areas of peaty soils, during construction of the Onshore Transmission Infrastructure, including guidelines for the handling, storage and reinstatement of soils. This will ensure that land affected temporarily during construction can be restored to its former use. An Outline Soil Management Plan will be provided as part of the application for development consent.
- Invasive non-native plant species - appropriate mitigation will be implemented during the construction phase for any invasive non-native plant species that are identified within the working area e.g. Japanese knotweed (*Fallopia japonica*).
- Commitment to produce a CoCP, which will include measures to mitigate impacts on habitats and species during construction. This could include:
  - seasonal constraints for protected species where applicable (e.g. badger sett closures only permitted between July and November inclusive);
  - species-specific mitigation measures, which will be developed based on the outcome of site-specific surveys, for example, Precautionary Working Method Statements;
  - prior to construction, a suitably qualified and experienced (or team of suitably qualified and experienced) Ecological Clerk of Works will be appointed to support implementation of ecological mitigation; and
  - sensitive lighting design at temporary and permanent lighting during construction.

  An Outline CoCP will be submitted as part of the application for development consent.
- Commitment to produce an Ecology Management Plan, which will include measures to mitigate long-term impacts on habitats and species at the Onshore Converter Stations and manage/enhance retained or newly created habitats following construction of the Onshore Transmission Infrastructure. An Outline Ecology Management Plan will be provided as part of the application for development consent.
- Relevant European Protected Species Mitigation (EPSM) licences will be obtained as necessary.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.4.5.2 The mitigation requirements for ecology and nature conservation will be discussed with relevant local authorities, where required, as part of the ETGs prior to submission of the application for development consent.

Biodiversity Net Gain

7.4.5.3 The Environment Act 2021 sets out targets, plans and policies for environmental protection. Schedule 15 sets out provisions for biodiversity net gain and amends the Planning Act 2008.

7.4.5.4 The Environment Act 2021 includes provisions applying certain biodiversity net gain requirements to projects consented under the Planning Act 2008. These are not yet in effect and it is currently understood that Government intends to bring the biodiversity net gain regime into effect for projects being determined under the Planning Act 2008 from November 2025. Draft guidance and further information has not yet been provided but is anticipated to be published by Government soon. This will be considered by the Applicant once available. The approach to biodiversity net gain will be set out within the application for the Ossian Transmission Infrastructure and reflected in the onshore ecology and nature conservation ES chapter.

7.4.6 Proposed Scope of the Assessment

7.4.6.1 Potential impacts that are proposed to be scoped in to the assessment for onshore ecology and nature conservation are set out in **Table 7.4.5**.

7.4.7 Impacts Proposed to be Scoped Out

7.4.7.1 Impacts that are proposed to be scoped out of the assessment for onshore ecology and nature conservation and the justification are set out in **Table 7.4.6**.

Table 7.4.5: Potential Impacts Proposed to be Scoped in for Onshore Ecology and Nature Conservation

Impact	C	O	D	Description	Proposed Approach to Assessment
Damage to designated sites.	✓	×	✓	Loss of and/or damage to qualifying and interest features, for example through habitat loss, fragmentation, changes in air or water quality and hydrological effects.	Designated sites, priority habitats and ancient woodland will be established using desk-based analysis and site-specific surveys. Habitat surveys, including UK Habitat Classification and, where appropriate, NVC, will be undertaken to identify important ecological features (IEFs) (e.g. veteran trees, important hedgerows) and to inform the evaluation of biodiversity net gain, as required. Liaison will be undertaken with engineering teams to avoid potential direct impacts through careful design, where practicable. Where avoidance is not practicable, suitable measures will be proposed to mitigate (or compensate) likely significant effects identified as part of the assessment for onshore ecology and nature conservation.
Damage to UK priority habitats and ancient woodlands.	✓	×	✓	Loss of and/or damage to qualifying and interest features, for example through habitat loss, fragmentation, changes in air or water quality and hydrological effects.	
Permanent habitat loss.	✓	×	✓	Permanent loss of habitat associated with the construction of the Onshore Converter Stations and associated permanent access.	
Temporary habitat loss.	✓	×	✓	Temporary loss of habitat associated with construction of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access.	
Killing, injury and disturbance to protected species.	✓	×	✓	Potential for impacts on habitats supporting a range of protected species.	Protected and notable species will be established using desk-based analysis and site-specific surveys. Habitat surveys, including UK Habitat Classification, will be undertaken to identify habitats with potential to support protected and notable species, which may be impacted during construction. Species surveys will be undertaken to identify presence or likely absence of protected or notable species and inform mitigation and EPSM licence requirements. Liaison will be undertaken with engineering teams to avoid potential direct impacts through careful design, where practicable. Where avoidance is not practicable, suitable measures will be proposed to mitigate (or compensate) significant effects identified as part of the assessment for onshore ecology and nature conservation.
Fragmentation of habitats supporting protected and notable species.	✓	×	✓	Permanent fragmentation of habitat associated with the construction of the Onshore Converter Stations and associated permanent access. Temporary fragmentation associated with construction of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access.	
Noise and visual disturbance to sensitive ecological receptors.	✓	✓	✓	Construction and decommissioning: Disturbance and displacement of species from foraging/ commuting/resting habitats during construction. Operation and maintenance: Disturbance and displacement of species from foraging/commuting/resting habitats associated with operation and maintenance of the Onshore Converter Stations.	
Changes in air quality affecting important ecological features.	✓	×	✓	Dust and vehicle emissions generated by construction activities and vehicle movements that could affect sensitive ecological features during construction.	Changes in air quality associated with construction will be determined as part of the assessment of air quality (see **section 7.10**). A desk-based screening exercise will be undertaken to identify which ecological receptors located within 50 m of the Ossian Transmission Infrastructure boundary landward of MHWS or roads used by construction traffic are sensitive to air pollution and those which can be excluded from the air quality assessment in the ES. Sensitive ecological features within the study area will be subject to modelling to compare predicated pollutant concentrations with established thresholds, where

Impact	C	O	D	Description	Proposed Approach to Assessment
					this is considered necessary to determine whether significance effects are likely to occur.
Changes in hydrology affecting important ecological features.	✓	×	✓	Potential for hydrological likely significant effects to habitats within during construction of the Onshore Transmission Infrastructure.	Ecological features likely to be affected through changes in water quality and hydrology will be established using desk-based analysis and site-specific surveys.

Table 7.4.6: Impacts Proposed to be Scoped Out of the Assessment for Onshore Ecology and Nature Conservation

Impact	Justification
Construction	
Changes in water quality arising from accidental spills during construction.	The impact of pollution, including accidental spills and contaminant releases associated with construction could lead to an impact on the quality of surface water receptors and, therefore, ecological receptors. The Outline CoCP will include measures to control the risk of spillage and to ensure that runoff is controlled in line with the latest guidance. It will also define principles for management of surface water runoff on areas of construction, handling and stockpiling of soils and stripped surface cover and control of vehicle movements. The provision of a final CoCP in line with the Outline CoCP will be secured as a requirement of the DCO.
Operation and Maintenance	
Damage to designated sites.	The Landfall and Onshore Transmission Infrastructure would be monitored and operated remotely during the operational lifetime of the Onshore Transmission Infrastructure. As such, potential impacts during operation and maintenance of the Landfall and Onshore Transmission Infrastructure would be limited to repair and maintenance activities, which would be short term, infrequent in nature and small in scale. Any land affected during repair and maintenance activities would be reinstated to its previous (or an otherwise agreed upon) condition. On this basis, the temporary and permanent impacts during operation and maintenance of the Landfall and Onshore Transmission Infrastructure are unlikely to result in significant effects and are proposed to be scoped out of the assessment for onshore ecology and nature conservation in the ES.
Damage to UK Priority habitats and ancient woodlands.	
Permanent habitat loss.	
Temporary habitat loss.	
Killing and injury to protected species.	
Permanent and temporary loss of habitat and fragmentation of habitats supporting protected and notable species.	
Changes in air quality affecting important ecological features.	The Landfall and Onshore Transmission Infrastructure would be monitored and operated remotely during the operational lifetime of the Onshore Transmission Infrastructure. As such, potential impacts during operation and maintenance of the Onshore Transmission Infrastructure would be limited to repair and maintenance activities, which would be short term, infrequent in nature and small in scale. The nature of works required to facilitate repair and maintenance of the Landfall and Onshore Transmission Infrastructure would be unlikely to generate large quantities of dust or other forms other Particulate Matter (PM). Any dust or other PM generated by repair and maintenance activities would be managed using best practice techniques, such as those set out in the Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction (IAQM, 2024).

Impact	Justification
	With regard to vehicle emissions, the number of vehicle movements required to facilitate operation and maintenance of the Onshore Transmission Infrastructure is anticipated to be no more than ten vehicles per day. As such, this falls well below the minimum threshold for detailed air quality assessment (25 heavy duty vehicles as an Annual Average Daily Traffic (AADT) flow or 100 light duty vehicles (LDV) as an AADT flow) set out in the IAQM Land-Use Planning & Development Control: Planning for Air Quality (IAQM, 2017). It also falls well below the threshold of 1,000 AADT movements, including over 200 HDV movements set out in DMRB LA 105 – Air Quality (2024) guidance. Taking the above information into account, the changes in air quality during operation and maintenance of the Onshore Transmission Infrastructure are unlikely to result in significant effects on ecological receptors and are proposed to be scoped out of the assessment for onshore ecology and nature conservation in the ES.
Changes in water quality affecting important ecological features.	As stated in **section 7.3**, activities related to the operation and maintenance of the Landfall and Onshore Transmission Infrastructure are unlikely to generate contaminated runoff. Standard mitigation measures, including surface water treatment via sustainable drainage solutions within the Onshore Converter Station sites and a routine management schedule outlined in the Drainage Strategy, will address any risks. On this basis, the changes in water quality during operation and maintenance are unlikely to result in significant effects and are proposed to be scoped out of the assessment for onshore ecology and nature conservation in the ES.
Changes in hydrology affecting important ecological features.	As stated in **section 7.3**, activities associated with operation and maintenance of the Landfall and Onshore Transmission Infrastructure are unlikely to impact the integrity (or efficacy) of watercourses. On this basis, the changes in water quality during operation and maintenance are unlikely to result in significant effects and are proposed to be scoped out of the assessment for onshore ecology and nature conservation in the ES.
Noise and visual disturbance to sensitive ecological receptors arising from operation and maintenance of the Landfall and Onshore Export Cables.	Activities associated with the operation and maintenance of the Landfall and Onshore Export Cables would be undertaken remotely. The cables may require infrequent on-site inspections and corrective maintenance activities, if and where they may be required. This would be limited in frequency and nature. No significant disturbance is likely to occur from this limited and infrequent activity and it is proposed that this is scoped out of the EIA process as no significant effect is likely to occur.

7.4.8 Proposed Assessment Methodology

7.4.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.4.5** is described below.

Legislation and Policy

7.4.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.4.8.3 The assessment of onshore ecology and nature conservation will be undertaken in accordance with the following guidance documents.

- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2024).
- British Standards Institution (BSI) (2013) Biodiversity – Code of Practice for Planning and Development: BS 42020:2013 (BSI, 2013).

7.4.8.4 Surveys will be informed by relevant survey guidance and by agreement of approaches through the ETGs, where possible.

Assessment of Effects

7.4.8.5 Potential impacts of the Ossian Transmission Infrastructure landward of MHWS on identified important ecological features will be assessed in accordance with the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (CIEEM, 2024).

7.4.8.6 Where significant adverse effects are likely to occur to onshore ecology and nature conservation receptors, suitable mitigation or compensatory measures will be identified.

7.4.8.7 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for onshore ecology and nature conservation. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.4.8.8 Survey results will inform the design of the Onshore Converter Stations. The ecology team will work closely with the authors of other relevant chapters, including the landscape and hydrology teams to provide an integrated outline design for the Onshore Converter Station sites. This will seek to reduce impacts as far as practicable and will explore opportunities for potential beneficial impacts.

7.4.8.9 Ongoing engagement will be undertaken through the relevant ETGs to ensure that stakeholders are aware of emerging survey results and the likely mitigation requirements. The approach to mitigation and biodiversity net gain will be discussed with the ETGs, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

7.4.8.10 A separate assessment of effects in relation to the Habitats Regulations will be undertaken to examine the likely significant effects on internationally designated sites (i.e. SACs, SPAs and Ramsar sites). This will be reported through the ISAA (see **section 9** of this EIA Scoping Report).

Receptor Sensitivity

7.4.8.11 The criteria proposed to be used for defining the sensitivity of onshore ecology and nature conservation receptors are provided in **Table 7.4.7** below. These take into account the definitions in the DMRB and CIEEM (2024).

Table 7.4.7: Sensitivity Criteria

Sensitivity/Value	Definition
Very High (International)	Habitats or species that have high or very high conservation importance, high vulnerability to impact and have no ability to recover.
	Habitats or species that have very high conservation importance, high vulnerability to impact and have low recoverability.
High (National)	Habitats or species that have high or very high conservation importance, medium or high vulnerability to impact and has medium recoverability.
	Habitats or species that have high conservation importance, medium vulnerability to impact and has low recoverability.
	Habitats or species that have medium conservation importance, high vulnerability to impact and has low recoverability.
Medium (Regional/County)	Habitats or species that have medium conservation importance, low vulnerability to impact and has low to medium recoverability.
	Habitats or species that have medium conservation importance, low, medium, or high vulnerability to impact and has medium recoverability.
Low (Local/Site)	Habitats or species that have low conservation importance, low vulnerability to impact and high recoverability.
	Habitats or species that have low conservation importance, medium or high vulnerability to impact and medium or high recoverability.
Negligible	Habitats or species that have low conservation importance, low vulnerability to impact and medium or high recoverability. Habitats or species that have not vulnerable to impacts.

Impact Magnitude

7.4.8.12 The criteria to be used for defining the magnitude of impacts on onshore ecology and nature conservation receptors are provided in **Table 7.4.8** below.

Table 7.4.8: Impact Magnitude Criteria

Magnitude of impact	Definition
High	A change in the size or extent of distribution of the habitat or the species (flora or fauna) population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long term and to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt long-term. Impacts predicted to be reversed in the long-term (i.e., more than five years) following cessation of the project activity.
Medium	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt medium to long term. Impacts predicted to be reversed in the medium-term (i.e., no more than five years) following cessation of the project activity.
Low	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/population. Impacts present for a short to medium duration. Impacts predicted to be reversed in the short-term (i.e., no more than one year) following cessation of the project activity.
Negligible	Very slight change of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site. Impacts present for a short duration. Impacts predicted to be reversed rapidly (i.e., no more than circa six months) following cessation of the project related activity.
No change	No loss or alteration of species (flora or fauna) characteristics, features, or elements; no observable impact either adverse or beneficial.

Significance of Effect

7.4.8.13 The significance of the effect upon onshore ecology and nature conservation will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact.

7.4.8.14 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effect with a significance level of moderate or above will be considered to be a likely significant effect, in terms of the EIA Regulations. Where the magnitude of impact is 'no change', no effect would arise.

7.4.8.15 In line with CIEEM (2024) guidance, each significance level will be defined with reference to the geographical scale of the effect. Typical descriptors are set out below.

- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national, or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category. Effects upon human receptors may also be attributed this level of significance.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.
- Minor: These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

7.4.8.16 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.4.8.17 The CEA for onshore ecology and nature conservation will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The onshore and nature conservation chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.4.8.18 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on onshore ecology and nature conservation are screened out from the EIA process.

Relevant Consultation

7.4.8.19 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, Natural England and the Environment

Agency through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Onshore Ecology and Nature Conservation chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Natural England;
- Environment Agency;
- Lincolnshire County Council;
- South East Lincolnshire Councils Partnership; and
- Lincolnshire Wildlife Trust.

7.4.9 Next Steps

7.4.9.1 The following are proposed as next steps in relation to onshore ecology and nature conservation.

- An initial UKHabs map will be prepared using high resolution aerial images, and this will inform targeted surveys of key areas for Phase 1 habitat surveys, depending on access. Phase 1 habitat surveys, comprising a UK Habitat classification survey and protected species appraisal for habitats likely to be impacted by the Onshore Transmission Infrastructure landward of MHWS will be undertaken in 2025 to define the baseline and identify the scope of Phase 2 ecology surveys for 2025 and 2026.
- The methodology to be used for desk-based analysis, site surveys and subsequent assessment will be informed using feedback received as part of the Scoping Opinion. In addition, non-statutory consultation with relevant local authorities in the form of ETG meetings will also be held to discuss and agree the approach to the assessment, including the scope of Phase 1 and Phase 2 ecological surveys proposed in 2025.
- The assessment will then be reported in the onshore ecology and nature conservation chapter of the PEIR and ES and supporting documentation.

7.5. Onshore and Intertidal Ornithology

7.5.1 Introduction

7.5.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for onshore and intertidal ornithological receptors relevant to the Ossian Transmission Infrastructure landward of MLWS. This section considers the potential impacts arising from the construction, operation and maintenance and decommissioning of the Landfall and Onshore Transmission Infrastructure and identifies the proposed scope of, and methodology for, the EIA process for onshore and intertidal ornithology.

7.5.1.2 Offshore ornithology (including impacts arising during the construction, operation and maintenance and decommissioning of the Offshore Transmission Infrastructure (seaward of MLWS)) is considered in **section 6.6** of this EIA Scoping Report.

7.5.2 Proposed Study Area for the Assessment

7.5.2.1 The onshore and intertidal ornithology study area for the Landfall and Onshore Transmission Infrastructure will be defined as follows.

- The area of land (landward of MLWS) that will be temporarily or permanently occupied during construction, operation and maintenance and decommissioning of the intertidal and onshore elements of the Ossian Transmission Infrastructure (i.e. the Landfall and Onshore Transmission Infrastructure).
- A surrounding impact zone or zone of influence (as described in CIEEM, 2024) will also be considered around the Landfall and Onshore Transmission Infrastructure. The zone of influence relating to the onshore and intertidal ornithology will consider international, national and local designated sites with potential connectivity to the Landfall and Onshore Transmission Infrastructure based on the foraging range of pink-footed geese, a distance of 20 km (Scottish Natural Heritage (now NatureScot), 2016). The foraging range of pink-footed goose *Anser brachyrhynchus* has been used as it is the largest range of those terrestrial species with connectivity to the Landfall and Onshore Transmission Infrastructure (i.e. those species that might reasonably be expected to utilise the onshore and intertidal habitats).

7.5.2.2 The onshore and intertidal ornithology study area will be reviewed and modified, if necessary, in response to feedback from consultation with stakeholders and/or regulators, survey findings, refinements made to the design and/or any additional environmental and/or design constraints identified during the EIA process.

7.5.3 Baseline Environment

7.5.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary and Intertidal Scoping Boundary based on publicly available information, a desk study review of key mapping data sets and EIA Scoping Reports and/or ESs for other projects and/or plans. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 7.5.2**.

Designated Sites

7.5.3.2 The Onshore Scoping Boundary and Intertidal Scoping Boundary areas include, and have potential connectivity with multiple sites with birds cited in their designation/list at the international, national and local level.

7.5.3.3 Those sites designated for birds and listed bird species with potential connectivity (within 20 km) are presented on **Figure 7.5.1**.

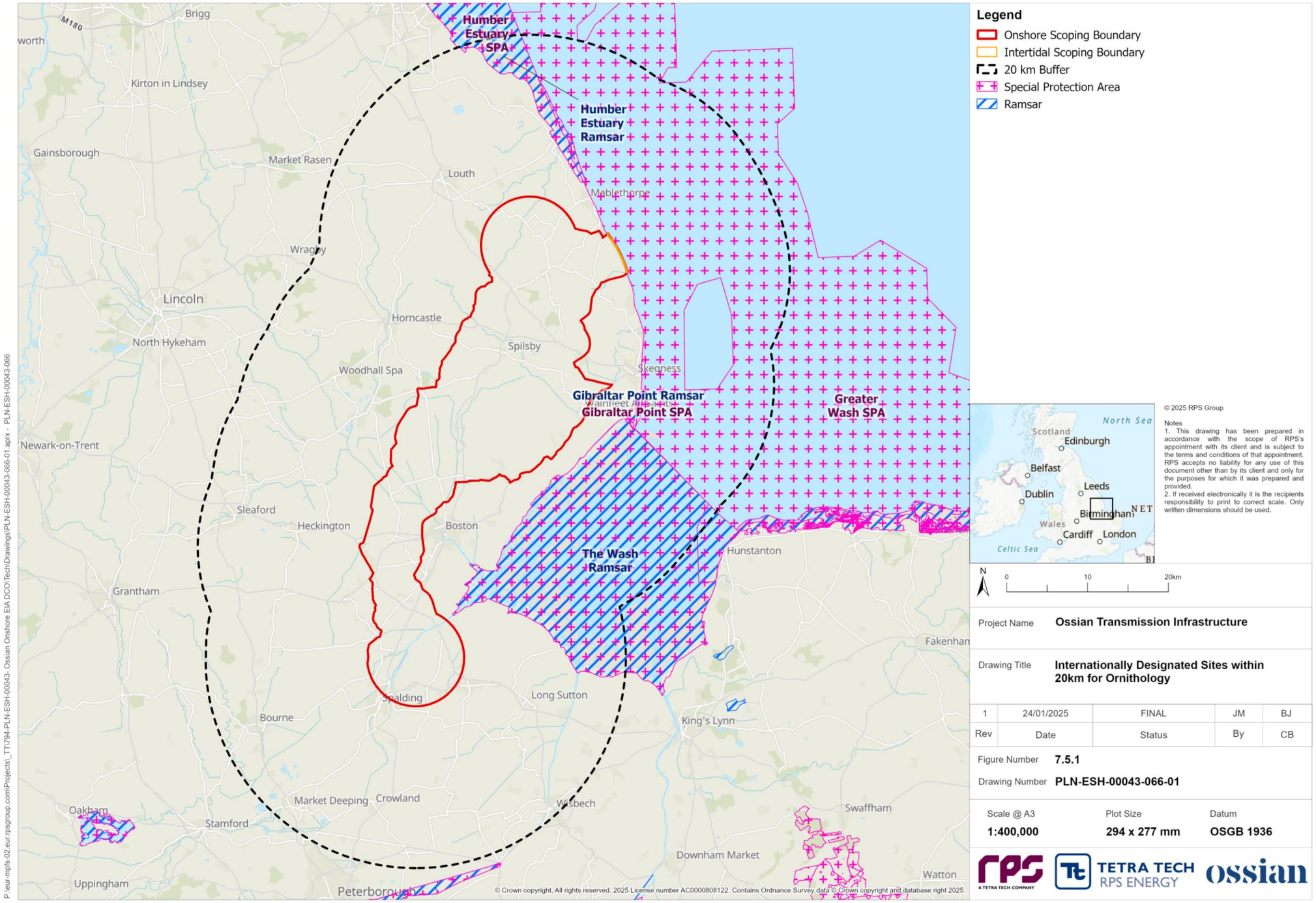


Figure 7.5.1: Internationally Designated Sites

Table 7.5.1: Designated Sites for Ornithology and Distance from Onshore Scoping Boundary and Intertidal Scoping Boundary

Site Name	Designation	Potential Connectivity	Closest Approximate Distance to Scoping Boundary (km)
International Designations			
Greater Wash	SPA	Red-throated diver *Gavia stellata*, common scoter *Melanitta nigra*, little gull *Hydrocoloeus minutus*, sandwich tern *Thalasseus sandvicensis*, common tern *Sterna hirundo*, little tern *Sternula albifrons*	Within
The Wash		Bewick's swan *Cygnus columbianus bewickii*, dark-bellied brent goose *Branta bernicla*, pink-footed goose, shelduck *Tadorna tadorna*, pintail *Anas acuta*, wigeon *Mareca*, oystercatcher *Haematopus ostralegus*, grey plover *Pluvialis squatarola*, sanderling *Calidris alba*, knot *Calidris canutus*, bar-tailed godwit *Limosa lapponica*, curlew *Numenius arquata*, redshank *Tringa totanus*, turnstone *Arenaria interpres*, dunlin *Calidris alpina*, goldeneye *Bucephala clangula*, gadwall *Mareca strepera*, common scoter, black-tailed godwit *Limosa limosa*, little tern, common tern, waterbird assemblage	1.0
Humber Estuary		Avocet *Recurvirostra avosetta*, bittern *Botaurus stellaris*, hen harrier *Circus cyaneus*, marsh harrier *Circus aeruginosus*, golden plover *Pluvialis apricaria*, bar-tailed godwit, shelduck, knot, dunlin, black-tailed godwit, redshank, ruff *Calidris pugnax*, little tern, waterbird assemblage	4.0
Gibraltar Point		Bar-tailed godwit, grey plover, sanderling, little tern	3.2
The Wash	Ramsar site	Bar-tailed godwit, curlew, dark-bellied brent goose, dunlin, grey plover, knot, oystercatcher, pink-footed goose, pintail, redshank, sanderling, shelduck, turnstone, golden plover, black-headed gull *Chroicocephalus ridibundus*, eider *Somateria mollissima*, lapwing *Vanellus vanellus*, black-tailed godwit, ringed plover *Charadrius hiaticula*, redshank, waterbird assemblage	1.0
Humber Estuary		Bar-tailed godwit, black-tailed godwit, dunlin, golden plover, knot, redshank, shelduck, waterbird assemblage	4.0
Gibraltar Point		Dark-bellied brent goose, grey plover, sanderling, bar-tailed godwit, knot, waterbird assemblage	3.2
National Designations			
Bardney Limewoods, Lincolnshire	SSSI	Woodcock *Scolopax rusticola*, nightingale *Luscinia megarhynchos*, grey heron *Ardea cinerea*	16.6
Baston and Thurlby Fens		Breeding bird community and wintering waterbird assemblage	12.2
Calceby Marsh		Snipe *Gallinago gallinago*, lapwing	Within
Candlesby Hill		Garden warbler *Sylvia borin*, lesser whitethroat *Curruca curruca*	Within
Claxby Chalk Pit		Spotted flycatcher *Muscicapa striata*, tawny owl *Strix aluco*, pied wagtail *Motacilla alba*, woodcock	Within

Site Name	Designation	Potential Connectivity	Closest Approximate Distance to Scoping Boundary (km)
Deeping Gravel Pits		Grey heron, gadwall, great crested grebe *Podiceps cristatus*, shoveler *Spatula clypeata*, tufted duck *Aythya fuligula*, kingfisher *Alcedo atthis*, wigeon, pintail, goldeneye, mallard *Anas platyrhynchos*, teal *Anas crecca*, goosander *Mergus merganser*, water rail *Rallus aquaticus*, bearded tit *Panurus biarmicus*	16.4
Dole Wood		Great spotted woodpecker *Dendrocopos major*, treecreeper *Certhia familiaris*, woodland birds	17.3
Gibraltar Point		Mallard, shelduck, ringed plover, little tern, oystercatcher, redshank, grey plover, knot, sanderling, bar-tailed godwit	3.0
Hoplands Wood		Woodcock, tawny owl, greater spotted woodpecker, treecreeper, warbler species	Within
Humber Estuary		Bittern, dark-bellied brent goose, shelduck, wigeon, teal, pochard *Aythya ferina*, scaup *Aythya marila*, goldeneye, oystercatcher, avocet, ringed plover, golden plover, grey plover, lapwing, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone, ruff, whimbrel *Numenius phaeopus*, greenshank *Tringa nebularia*, marsh harrier, bearded tit, little grebe *Tachybaptus ruficollis*, great crested grebe, mute swan *Cygnus olor*, gadwall, shoveler, tufted duck, water rail, little ringed plover *Charadrius dubius*, snipe, common tern, cuckoo *Cuculus canorus*, kingfisher, yellow wagtail *Motacilla flava*, grasshopper warbler *Locustella naevia*, sedge warbler *Acrocephalus schoenobaenus*, reed warbler *Acrocephalus scirpaceus*, reed bunting *Emberiza schoeniclus*	8.5
Keal Carr		Lesser spotted woodpecker *Dryobates minor*, great spotted woodpecker, green woodpecker *Picus viridis*, willow tit *Poecile montanus*, garden warbler, siskin *Spinus spinus*	Within
Kirkby Moor		Tree pipit *Anthus trivialis*, woodcock, green woodpecker, great crested grebe	6.3
Langtoft Gravel Pits		Passerine species	18.5
Little Scrubbs Meadow		Nightingale	19.5
Mavis Enderby Valley		Snipe, water rail, sparrowhawk *Accipiter nisus*, kestrel *Falco tinnunculus*, woodcock, turtle dove *Streptopelia turtur*, tawny owl, greater and lesser spotted woodpecker, tree pipit	Within
Moor Farm		Lapwing, snipe, woodcock, warbler species	7.1
Muckton Wood		Grey heron, great spotted woodpecker, treecreeper, warbler species	Within
Saltfleetby-Theddlethorpe Dunes		Brent goose, shelduck, dunlin, yellow wagtail, little tern, water rail, snipe, reed warbler, grasshopper warbler, sedge warbler, whitethroat *Curruca communis*, lesser whitethroat, long-eared owl *Asio otus*, blackcap *Sylvia atricapilla*, garden warbler, nightingale	4.0
Sea Bank Clay Pits		Breeding assemblage, wintering assemblage, migratory birds	Within
Sotby Meadows		Snipe, lapwing, reed bunting, sedge warbler	16.5

Site Name	Designation	Potential Connectivity	Closest Approximate Distance to Scoping Boundary (km)
Surfleet Lows		Mallard, teal, wigeon, snipe, reed warbler *Acrocephalus scirpaceus*, breeding bird assemblage	Within
Tattershall Carrs		Green woodpecker, great spotted woodpecker, woodcock	5.5
The Wash		Wintering wader and wildfowl assemblage, breeding bird assemblage	1.0
Willoughby Wood		Grey heron, woodcock, tawny owl, great spotted woodpecker	Within
Gibraltar Point	NNR	Same as Gibraltar Point SSSI	3.2
Bardney Limewoods		Same as Bardney Limewoods, Lincolnshire SSSI	16.6
Lincolnshire Coronation Coast (includes archived NNRs Donna Nook and Saltfleetby-Theddlethorpe Dunes)		Same as Humber Estuary SSSI and Saltfleetby-Theddlethorpe Dunes SSSI	4.1
The Wash		Same as The Wash SSSI	2.3
Local Designations			
Eye Green	LNR	No information on associated birds was available so all LNRs within 20 km have been included on a precautionary basis.	19.4
Havenside			3.8
Lollycocks Field			15.5
Mareham Pastures			15.3
Snipe Dales			0.6
South Thorseby Warren			Within
The Pingle			4.0
The Shrubberies			7.8
Vernatts			Within
Willoughby Branch Line			Within

Bird Assemblages

7.5.3.4 Intertidal bird surveys were undertaken between October 2023 and March 2024 in the area around the Landfall. Wintering bird surveys, in the broad area likely to be affected by the Landfall and Onshore Transmission Infrastructure, started in 2024 and are continuing through the winter of 2024/2025. Although these surveys are ongoing, and breeding bird surveys remain to be undertaken during 2025, there is much existing data within the Onshore Scoping Boundary and Intertidal Scoping Boundary that provides an initial indication regarding the baseline conditions in terms of bird assemblages.

7.5.3.5 Work undertaken for a range of projects indicates that key sensitive receptors are likely to include pink-footed geese, dark-bellied brent geese, and waders that utilise terrestrial habitats, such as curlew or golden plover.

7.5.3.6 Pink-footed geese, listed as qualifying features of the Wash SPA and Ramsar sites, were recorded frequently in the non-breeding surveys for the onshore cable route associated with the Outer Dowsing Offshore Wind Farm.

7.5.3.7 Dark-bellied brent geese are also individual qualifying features of the Wash SPA, as well as the Wash and Gibraltar Point Ramsar sites, and as part of the Humber Estuary SPA non-breeding waterbird assemblage.

7.5.3.8 RSPB Frampton Marsh is located to the south east of Boston. This area is known to host large assemblages of qualifying features of the Wash SPA, including pink-footed geese and dark-bellied brent geese.

7.5.3.9 Furthermore, field-feeding wader species (e.g. curlew, golden plover and lapwing) associated with the Wash SPA have been recorded foraging within the Outer Dowsing and Viking link survey corridors.

7.5.3.10 The site-specific surveys being undertaken will inform the baseline to be used for the ES.

Future Baseline Conditions

7.5.3.11 In the absence of the Ossian Transmission Infrastructure, and assuming the continuation of ongoing intensive agricultural cultivation across much of the Onshore Scoping Boundary (and continued land uses in the intertidal area), it is reasonable to assume that there would be few changes to the baseline conditions in the future. It is also expected that the ongoing management of sites of ornithological importance would, in many cases, sustain the current trend towards favourable condition of these sites.

7.5.3.12 The potential implications of climate change with respect to onshore and intertidal ornithology will be considered in the assessment, where information is available.

7.5.3.13 No changes in statutory legislation are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.5.4 Proposed Data Sources

7.5.4.1 The data sources used to inform the baseline assessment will primarily comprise published material, which is publicly available online, supported by additional data from local wildlife record centres and groups, and the results of site-specific surveys.

7.5.4.2 The baseline data sources identified in this EIA Scoping Report will remain under review and may be updated in response to feedback from relevant statutory and non-statutory consultees during the EIA process, or in response to new sources of information becoming available.

Desk Studies

7.5.4.3 An initial desk-based review has identified a number of data sources which provide baseline data coverage. The data will be collated for the study areas defined at **section 7.5.2**. These will be used to inform the assessment. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.5.2: Desk-Based Data Sources – Onshore and Intertidal Ornithology

Source	Summary
British Trust for Ornithology (BTO)	BTO Data Report including bird tracks, bird atlas data and breeding bird survey report for the onshore elements.
Defra Multi-agency Geographic Information for the Countryside (MAGIC) interactive mapping.	Statutory protected sites and priority habitats. Information for granted European Protected Species (EPS) licences.
JNCC	Provides information regarding the qualifying features of internationally designated sites, including SAC, SPA and Ramsar sites.
Seabird Monitoring Programme	Provide information on seabird colony counts.
Wetland Bird Survey (WeBS) data held by the British Trust for Ornithology (BTO)	Wetland and coastal bird species count available for WeBS sector and sites.
Natural England	Designated site details, including qualifying interest features.
Relevant local authorities – Biodiversity/Environment Division	Information relating to locally designated sites, sites of interest, and local/regional conservation objectives and plans/projects.
Other project applications	Bird data from PEIR, ES and technical annexes available in the public domain.
Lincolnshire Environmental Records Centre	Provide records of bird sightings.

Site-Specific Surveys

7.5.4.4 In addition to the data sources identified above, the following site-specific surveys are proposed to inform the baseline assessment for onshore and intertidal ornithology. A summary of these surveys can be found in **Table 7.5.3**. Methodologies will be agreed through the ETG, where practicable.

- Non-breeding terrestrial waterbird surveys (Onshore Export Cable Corridor).
  - These surveys will follow a driven or walked approach (in accordance with Scottish Natural Heritage, 2017). Survey transects will be undertaken across the length of the proposed Onshore Export Cable Corridor, stopping along the route to record information about the bird species present. Surveyors will drive/walk the proposed Onshore Export Cable Corridor plus a 500 m buffer (based on the typical disturbance distances of species expected to occur within the study area (e.g. Goodship & Furness (2022)) and map the species, number of birds, and behaviour of birds within the survey area. These surveys commenced in September 2024.
- Non-breeding bird walkover surveys (Onshore Converter Stations).
  - Onshore Converter Stations walkover surveys will look to record the distribution and abundance of all bird species present. This will entail walking a transect that allows the entirety of the site of the Onshore Converter Station to be covered plus a 200 m buffer (based upon the typical maximum disturbance distances for the passerine bird assemblage likely to be present within the study area (e.g. Hötker *et al*. (2006)). The buffer zone will be revised upwards if noteworthy sensitive species are suspected to be present. Surveyors will map the species, number of birds, and behaviours of birds. Surveys started from vantage points in 2024.
- Breeding bird point count surveys (Onshore Export Cable Corridor).
  - The breeding bird surveys will utilise a vantage point/point count survey technique, using stratified and/or regular interval sampling to determine a series of vantage points/point counts that are representative of the proposed cable corridor. From these vantage points/point counts, surveyors will note all species seen and heard over a 30-minute period. Surveyors will map the species, number of birds, and behaviours of birds.
- Breeding bird walkover surveys (Onshore Converter Stations).
  - Onshore Converter Stations walkover breeding bird surveys will look to record the distribution and abundance of all breeding bird species present in the Onshore Converter Stations sites. This will entail walking a transect that allows the entirety of the site to be covered plus a 200 m buffer (or more if sensitive species are suspected to be present). Surveyors will map the species, number of birds, and behaviours of birds.
- Non-breeding intertidal waterbird surveys (Landfall).
  - These surveys will follow a 'through-the-tidal-cycle' count methodology using vantage points to identify the distribution and abundance of birds using the intertidal habitats at the Landfall. Surveys will cover a range of times of day and different tidal conditions. Surveys commenced in October 2023 to inform the site selection process. Surveys in the broad area of the Landfall and Onshore Transmission Infrastructure started in September 2024. The survey area extends 500 m (based on the typical disturbance distances of species expected to occur within the study area) in either direction alongshore.

7.5.5 Mitigation Measures

7.5.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Avoidance of impacts through site selection to avoid designated sites and other sensitive habitats/features, where practicable (with consideration of trenchless techniques where avoidance is not feasible).
- Commitment to produce a Soil Management Plan, including measures to be implemented during construction of the Onshore Transmission Infrastructure and requiring re-instatement of affected land post construction where practicable. An Outline Soil Management Plan will be provided as part of the application for development consent.
- Commitment to produce a CoCP, which will include measures to mitigate impacts on habitats and species during construction of the Onshore Transmission Infrastructure. This is likely to include:
  - seasonal constraints for protected bird species where applicable; and
  - species-specific mitigation measures, which will be developed based on the outcome of site-specific surveys, for example, method statements.

  An Outline CoCP will be submitted as part of the application for development consent.
- Commitment to produce an Ecology Management Plan, which will include measures to mitigate long term impacts on habitats and species at the Onshore Converter Stations and manage/enhance any newly created or enhanced habitats following construction of the Onshore Transmission Infrastructure. An Outline Ecology Management Plan will be provided as part of the application for development consent.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.5.5.2 The mitigation requirements for onshore and intertidal ornithology will be discussed with relevant local authorities, where required, as part of the ETGs prior to submission of the application for development consent.

Table 7.5.3: Ornithology Survey Methods and Frequency

Survey Type	Survey Area	Survey Methodology	Survey Frequency	No. of Visits and Survey Period
Non-breeding terrestrial waterbird surveys	Onshore Export Cable Corridor plus 500 m buffer	Driven and walked transects scanning fields with optics from public access land	Monthly between September and March	Seven visits planned for the 2024/25 non-breeding period One year of data collection planned to inform the ES
Non-breeding walkover surveys	Onshore Converter Stations plus 200 m buffer	'Look and see' walkover methodology using a modified Common Bird Census methodology	Monthly between September and March	Seven visits planned for the 2024/25 non-breeding period One year of data collection planned to inform the ES
Breeding bird point count surveys	Onshore Export Cable Corridor	30-minute point counts from set locations along the cable corridor	Monthly between March and July	Six visits (evenly spaced across five months) planned for 2025 One year of data collection planned to inform the ES
Breeding bird walkover surveys	Onshore Converter Stations plus 200 m buffer	'Look and see' walkover methodology using a modified Common Bird Census methodology	Monthly between March and July	Six visits (evenly spaced across five months) planned for 2025 One year of data collection planned to inform the ES
Non-breeding intertidal waterbird surveys	Landfall	Diurnal, 'through-the-tidal-cycle count' (full tidal cycle per month) from vantage points on the upper shore	Twice monthly between September and March (as agreed with Natural England)	12 visits during October – March 2023/24 14 visits planned between September – March 2024/25 Two years of data collection planned to inform the ES

7.5.6 Proposed Scope of the Assessment

7.5.6.1 Potential impacts that are proposed to be scoped into the assessment for onshore and intertidal ornithology are set out in **Table 7.5.4**.

7.5.7 Impacts Proposed to be Scoped Out

7.5.7.1 Impacts that are proposed to be scoped out of the assessment for onshore and intertidal ornithology and the justification are set out in **Table 7.5.5**.

Table 7.5.4: Potential Impacts Proposed to be Scoped in for Onshore and Intertidal Ornithology

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact of temporary loss of supporting habitats and/or resource availability and associated displacement.	✓	×	✓	During construction, there would be some temporary habitat loss associated with the use of land to install the Landfall, Onshore Export Cables and Onshore Converter Stations, as well as construction compounds and accesses. This land would be restored at the end of the construction phase and so the impact would be temporary. This temporary use of land may result in temporary displacement of birds, which may move into areas of lower quality (e.g. areas of lower food resources). Such resulting displacement could ultimately affect their demographic fitness (i.e. survival rates and breeding productivity) as well as potentially impacting on other birds in areas that displaced birds move to. The impact of temporary loss of supporting habitats and/or resource availability during decommissioning is of shorter duration when compared to the impact of permanent loss of supporting habitats.	The findings of the desk-based study and site-specific surveys will be used to inform the ornithology (onshore and intertidal) mitigation strategy and assessment. The assessment will address the impacts on IEFs within the study area. The assessment will be undertaken in accordance with CIEEM Guidelines for Ecological Impact Assessment (CIEEM, 2024). Liaison will be undertaken with engineering teams to avoid potential direct impacts through careful design, where practicable. Where avoidance is not practicable, suitable measures will be proposed to mitigate (or compensate) likely significant effects identified as part of the assessment for onshore and intertidal ornithology.
The impact of permanent loss of supporting habitats and/or resource availability.	✓	×	×	The Onshore Converter Stations and any permanent accesses will require some permanent loss of habitats. This will occur during the construction phase. This would have an impact upon the availability of resources and foraging birds may need to forage elsewhere to meet their daily energy requirement. Displaced birds may move to areas already occupied by other birds and thus face higher intra/inter-specific competition due to a higher density of individuals competing for the same resource. Alternatively, displaced birds may move into areas of lower quality (e.g. areas of lower food resources). Such resulting displacement could ultimately affect their demographic fitness (i.e. survival rates and breeding productivity) as well as potentially impacting on other birds in areas that displaced birds move to. Such impacts have the potential to lead to a change in the size or extent of distribution of the local population or the population that is the interest feature of a specific protected site (e.g. SPA).	
Disturbance from construction and decommissioning activities. Disturbance and displacement from operation and maintenance activities at Landfall (if required).	✓	✓	✓	Construction: Birds may be disturbed by visual, aural/vibration or airborne (such as construction dust) stimuli, and the impacts of disturbance may lead to avoidance of the affected areas (i.e. displacement from ideal foraging, breeding or roosting sites). Birds may be disturbed from distances beyond that at which the disturbance event occurred, so unlike habitat loss disturbance may cause birds to be displaced from a wider area. The level of disturbance is related to the species and specific stimuli. Such impacts have the potential to lead to a change in the size or extent of distribution of the biogeographic population or the population that is the interest feature of a specific protected site (e.g. SPA). Operation and maintenance (Landfall only): For the majority of the time, there will be no potential for operation and maintenance of the Landfall to affect bird populations as monitoring will be undertaken remotely with occasional visits to the Transition Joint Bays. However, in the event that the operation and maintenance phase requires cable reburial or similar activities that requires significant activity in the intertidal area, these effects would be assessed. Decommissioning: During decommissioning, birds may be disturbed by visual, aural or airborne (such as dust) stimuli, and the impacts of disturbance may lead to avoidance of the affected areas (i.e. displacement from ideal foraging, breeding or roosting sites). Also, temporarily displaced birds (associated with the removal of infrastructure as required) may be forced to move into areas of lower quality (e.g. areas of lower food resources). Such resulting displacement could ultimately affect their demographic fitness (i.e. survival rates and breeding productivity) as well as potentially impacting on other birds in areas that displaced birds move to.	

Table 7.5.5: Impacts Proposed to be Scoped Out of the Assessment for Onshore and Intertidal Ornithology

Impact	Phase	Justification
All Phases		
The impact of pollution caused by accidental spills/contaminant release on protected habitats and species during all phases of the Landfall and Onshore Transmission Infrastructure	All phases	The impact of pollution, including accidental spills and contaminant releases associated with construction could lead to an impact on the quality of surface water receptors, which in turn could affect ornithology receptors. The Outline CoCP will include measures to control the risk of spillage and to ensure that runoff is controlled in line with the latest guidance. It will also define principles for management of surface water runoff on areas of construction, handling and stockpiling of soils and stripped surface cover and control of vehicle movements. The provision of a final CoCP in line with the Outline CoCP will be secured as a requirement of the DCO. As stated in **section 7.3**, activities related to the operation and maintenance of the Landfall and Onshore Transmission Infrastructure are unlikely to generate contaminated runoff. Standard mitigation measures, including surface water treatment via sustainable drainage solutions within the Onshore Converter Station sites and a routine management schedule outlined in the Drainage Strategy, will address any risks. On this basis, the changes in water quality during operation and maintenance are unlikely to result in significant effects and are proposed to be scoped out of the assessment for onshore and intertidal ornithology. During decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.
Operation and Maintenance		
Disturbance and displacement from operation and maintenance activities associated with the Onshore Transmission Infrastructure.	Operation and maintenance	The Onshore Converter Stations and Onshore Export Cables would be monitored and operated remotely during the operational lifetime of the Onshore Transmission Infrastructure. As such, potential impacts during operation and maintenance of the Onshore Transmission Infrastructure would be limited to repair and maintenance activities, which would be short term, infrequent in nature and small in scale. No excavation or construction activities that could disturb birds would be required. With regard to vehicles and activity associated with the operation and maintenance phase, the number of vehicle movements required to facilitate operation and maintenance of the Onshore Transmission Infrastructure is anticipated to be no more than ten vehicles per day. No significant activity likely to disturb birds is proposed.
Operation and Maintenance and Decommissioning		
The impact of permanent loss of supporting habitats during the operation and maintenance and decommissioning of the Onshore Transmission Infrastructure	Operation and maintenance and decommissioning phases.	Any permanent habitat loss will occur during the construction phase. No further permanent habitat loss would be required following completion of the construction phase. Therefore, effects of permanent habitat loss during the operation and maintenance and decommissioning phases are proposed to be scoped out.

7.5.8 Proposed Assessment Methodology

7.5.8.1 The assessment methodology proposed to be used for the impacts scoped in as set out in **Table 7.5.4** is described below.

7.5.8.2 The onshore and intertidal ornithology assessment will be undertaken in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report.

Legislation and Policy

7.5.8.3 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.5.8.4 The assessment of onshore ecology and nature conservation will be undertaken in accordance with the following guidance documents.

- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2024).

Assessment of Effects

7.5.8.5 In accordance with the CIEEM Guidelines on Ecological Impact Assessment (CIEEM, 2024), the assessment of the likely significant effects and identification of important features will be focused on IEFs. IEFs are species of high and very high conservation importance, present within the onshore and intertidal ornithology study area, which may be likely to be affected as a result of the Landfall and Onshore Transmission Infrastructure.

7.5.8.6 The conservation importance of ornithological receptors will be based on the population from which individuals are predicted to be drawn. This reflects current understanding of the movements of species, with site-based protection (e.g. SPAs) generally limited to specific periods of the year (e.g. the breeding season). Therefore, conservation importance can vary through the year depending on the relative sizes of the number of individuals predicted to be at risk of impact and the population from which they are estimated to be drawn. Conservation importance also considers species of national importance, regional importance and local importance.

7.5.8.7 For the purposes of assessment, IEFs will be identified as those species of either very high or high conservation importance, as defined by criteria from CIEEM guidance (CIEEM, 2024). The potential IEFs that are proposed to be considered are:

- geese, ducks and swans;
- partridges;
- rails, crakes and coots;
- grebes;
- waders;
- gulls and terns;
- divers;
- cormorants;
- herons, storks and ibis;
- owls;
- raptors; and
- passerines (including hirundines).

7.5.8.8 Where significant adverse effects are likely to occur to onshore and intertidal ornithology receptors, suitable mitigation or compensatory measures will be identified.

7.5.8.9 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for onshore and intertidal ornithology. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.5.8.10 Survey results will inform the design of the Onshore Converter Stations. The ornithology team will work closely with the authors of other relevant chapters, including the ecology, landscape and hydrology teams to provide an integrated outline design for the Onshore Converter Station sites. This will seek to reduce impacts as far as practicable and will explore opportunities for potential beneficial impacts.

7.5.8.11 Ongoing engagement will be undertaken through the relevant ETGs to ensure that stakeholders are aware of emerging survey results and the likely mitigation requirements. The approach to mitigation will be discussed with the ETGs, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

7.5.8.12 A separate assessment of effects in relation to the Habitats Regulations will be undertaken to examine the likely significant effects on internationally designated sites (i.e. SACs, SPAs and Ramsar sites). This will be reported through the ISAA.

Receptor Sensitivity

7.5.8.13 The criteria proposed to be used for defining the sensitivity of onshore and intertidal ornithology receptors are provided in **Table 7.5.6** below.

Table 7.5.6: Sensitivity Criteria

Sensitivity/Value	Definition
Very High (International)	A bird species has high or very high conservation importance, high vulnerability to impact and has no ability to recover.
	A bird species has very high conservation importance, high vulnerability to impact and has low recoverability.
High (National)	A bird species has very high conservation importance, low vulnerability and high recoverability.
	A bird species has high or very high conservation importance, medium or high vulnerability to impact and has medium recoverability.
	A bird species has high conservation importance, medium vulnerability to impact and has low recoverability.
	A bird species has high conservation importance, high vulnerability and high recoverability.
	A bird species has medium conservation importance, high vulnerability to impact and has low recoverability.
Medium (Regional/ County)	A bird species has high conservation importance, low vulnerability to impact and has low to medium recoverability.
	A bird species has medium, high or very high conservation importance, low, medium or high vulnerability to impact and has medium to high recoverability.
Low (Local/Site)	A bird species has medium conservation importance, medium vulnerability to impact and high recoverability.
	A bird species has low conservation importance, medium or high vulnerability to impact and medium or high recoverability.
Negligible	A bird species has low conservation importance, low vulnerability to impact and medium or high recoverability.
	A bird species is not vulnerable to impacts.

Impact Magnitude

7.5.8.14 The criteria to be used for defining the magnitude of impacts on onshore and intertidal ornithology receptors are provided in **Table 7.5.7** below.

Table 7.5.7: Impact Magnitude Criteria

Magnitude of impact	Definition
High	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long term and to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt long-term. Includes impacts that may be reversible in the long-term (i.e. more than five years) following cessation of the project activity.
Medium	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/or the integrity of the protected site. Impacts felt medium to long term. Impacts are predicted to be reversed in the medium-term (i.e. no more than five years) following cessation of the project activity.
Low	A change in the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/population. Impacts present for a short to medium duration. Impacts are predicted to be reversed in the short-term (i.e. no more than one year) following cessation of the project activity.
Negligible	Very slight change from the size or extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site. Impacts present for a short duration. Impacts are predicted to be reversed rapidly (i.e. no more than circa six months) following cessation of the project related activity.
No change	No loss or alteration of characteristics, features or elements; no observable impact either adverse or beneficial.

Significance of Effect

7.5.8.15 The significance of the effect upon onshore and intertidal ornithology will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.5.8.16 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effects with a significance level of moderate or above will be considered to be significant. Where the magnitude of impact is 'no change', no effect would arise.

7.5.8.17 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.5.8.18 The CEA for onshore and intertidal ornithology will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The onshore and intertidal ornithology chapter of the ES will also consider inter-related effects arising from the Ossian Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.5.8.19 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on onshore and intertidal ornithology are screened out from the EIA process.

Relevant Consultation

7.5.8.20 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, Natural England and the Environment Agency through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Onshore and Intertidal Ornithology chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Natural England;
- Environment Agency;
- Lincolnshire County Council;
- South East Lincolnshire Councils Partnership;
- RSPB; and
- Lincolnshire Wildlife Trust.

7.5.9 Next Steps

7.5.9.1 The following are proposed as next steps in relation to onshore and intertidal ornithology.

- The methodology to be used for desk based analysis, site surveys and subsequent assessment will be informed using feedback received as part of the Scoping Opinion for the Ossian Transmission Infrastructure. In addition, non-statutory consultation with relevant local authorities in the form of ETG meetings will also be held to discuss and agree the approach to the assessment, including the scope of ornithology surveys proposed in 2025.
- The assessment will then be reported in the onshore and intertidal ornithology chapter of the PEIR and ES and supporting documentation.

7.6. Historic Environment

7.6.1 Introduction

7.6.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for the onshore and intertidal historic environment. The term ‘historic environment’ as used here includes: buried and standing archaeological remains; deposits of geoarchaeological and paleoenvironmental interest; historic buildings; and the character of the historic landscape. **Section 6.9** of this EIA Scoping Report (marine archaeology) addresses the area seaward of MLWS.

7.6.1.2 Impacts with respect to peat are considered in **section 7.7**, while impacts in relation to landscape and visual impacts are considered in **section 7.11**.

7.6.2 Proposed Study Area for the Assessment

7.6.2.1 The study area to be used for the assessment of the onshore and intertidal historic environment comprises the land to be temporarily or permanently required for the Landfall and Onshore Transmission Infrastructure, landward of MLWS plus the following study area distances.

- 5 km settings study area: a circle with a radius of 5 km centred on any Onshore Converter Station location within which all designated heritage assets will be identified and described. Beyond this distance a significant adverse effect is highly unlikely.
- 1 km settings study area: a zone extending for 1 km from the edge of the Landfall and Onshore Export Cable Corridor within which all designated heritage assets will be identified and described.
- 1 km historic environment study area – a zone extending for 1 km from the edge of the Landfall and Onshore Export Cable Corridor (1 km either side) within which all non-designated heritage assets will be identified and described.

7.6.2.2 The proposed scope of assessment for the marine historic environment, seaward of MLWS is set out in **section 6.9** of this EIA Scoping Report.

7.6.3 Baseline Environment

7.6.3.1 An outline of the baseline environment for the onshore and intertidal historic environment upon an initial review of identified receptors within the Onshore Scoping Boundary and Intertidal Scoping Boundary, is provided in the following sections below. The baseline environment set out here is based on a desk study review of key mapping data sets and EIA Scoping Reports and/or ESs for other projects and/or plans. Details of the data sources to be used to inform the more detailed baseline for the EIA are set out in **Table 7.6.1**.

Designated Heritage Assets

7.6.3.2 There are no World Heritage Sites, Protected Wreck Sites or Registered Battlefields within the Onshore Scoping Boundary and no designated heritage assets within the Intertidal Scoping Boundary.

7.6.3.3 One Registered Battlefield is located to the west of the Onshore Scoping Boundary and Intertidal Scoping Boundary; this is the site of the Battle of Winceby which was fought in 1643 between a Parliamentary army involved in the siege of Bolingbroke Castle and a Royalist force sent to relieve the besieged troops.

7.6.3.4 There are numerous Scheduled Monuments within the Onshore Scoping Boundary and Intertidal Scoping Boundary. These include prehistoric monuments, such as Neolithic Period long barrows and Bronze Age round barrows, the latter occurring as cemeteries as well as isolated examples. There is also an early medieval cemetery at Hall Hill, just to the south of Bolingbroke.

7.6.3.5 Scheduled Monuments of medieval and post-medieval date within the Onshore Scoping Boundary and Intertidal Scoping Boundary include several motte and bailey castles, a number of moated sites and a few deserted or shrunken settlements. There are also numerous stone crosses (mostly in churchyards) as well as the sites of religious establishments, including Hagnaby Abbey, Marksby Priory, St Mary's Priory at Greenfield, Revesby Abbey and Swineshead Abbey.

7.6.3.6 Three Grade II Registered Parks and Gardens are located within the northern part of the Onshore Scoping Boundary and Intertidal Scoping Boundary: Well Hall, Harrington Hall and Gunby Hall.

7.6.3.7 There are a considerable number of listed buildings within the Onshore Scoping Boundary and Intertidal Scoping Boundary. Many of these are clustered within historic settlements which are often designated as Conservation Areas: Alford; Rathby; Hundleby; Spilsby; Old Bolingbroke; Wainfleet; Revesby; Kirton Holme; Swineshead; Wigtoft, Pinchbeck and Moulton. Grade I and Grade II* listed buildings within the Onshore Scoping Boundary and Intertidal Scoping Boundary include numerous churches along with external fonts and church crosses, also country houses, chapels, schools and windmills.

7.6.3.8 **Figure 7.6.1** to **Figure 7.6.5** show the locations of designated heritage assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary.

Non-designated Heritage Assets

7.6.3.9 Baseline data has not yet been acquired with regard to the location and nature of non-designated heritage assets (including buried archaeological sites) within the Onshore Scoping Boundary and Intertidal Scoping Boundary. A baseline assessment of non-designated heritage assets will be undertaken once the Landfall and Onshore Transmission Infrastructure, including the Onshore Converter Stations and Onshore Export Cable Corridor has been refined.

Future Baseline Conditions

7.6.3.10 Future changes to the historic environment baseline could include additions to the list of designated heritage assets (e.g. additional designations of Scheduled Monuments, listed buildings etc) or amendments to the current description of a designated heritage asset and/or the area covered by the designation.

7.6.3.11 Other changes could occur as a result of further information being discovered regarding archaeological sites, possibly through programmes of intrusive or non-intrusive fieldwork undertaken on behalf of the Onshore Transmission Infrastructure. The results of any such investigations would be incorporated into the historic environment baseline.

7.6.3.12 No changes in statutory legislation on historic environment issues are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

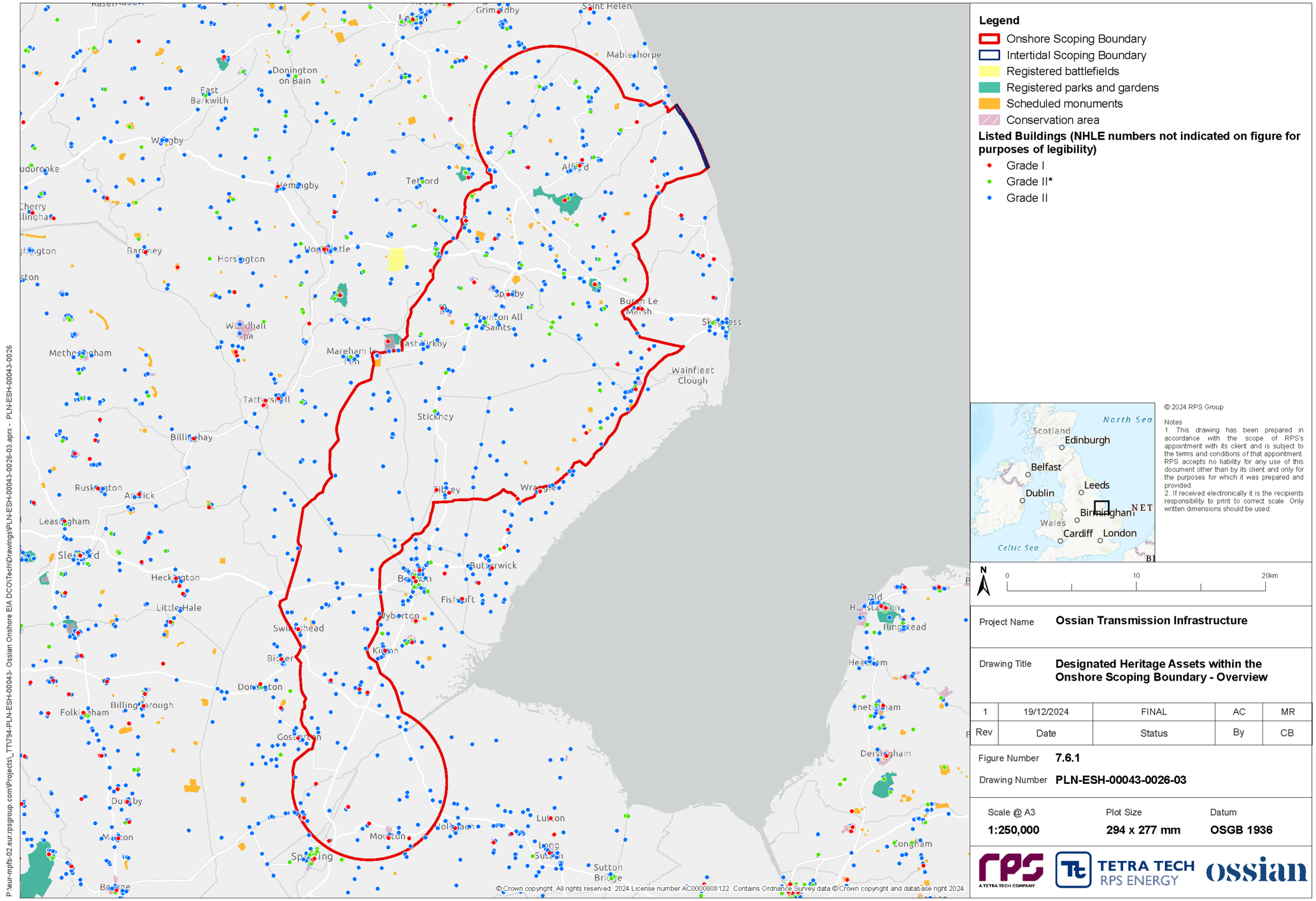


Figure 7.6.1: Designated Heritage Assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary (overview)

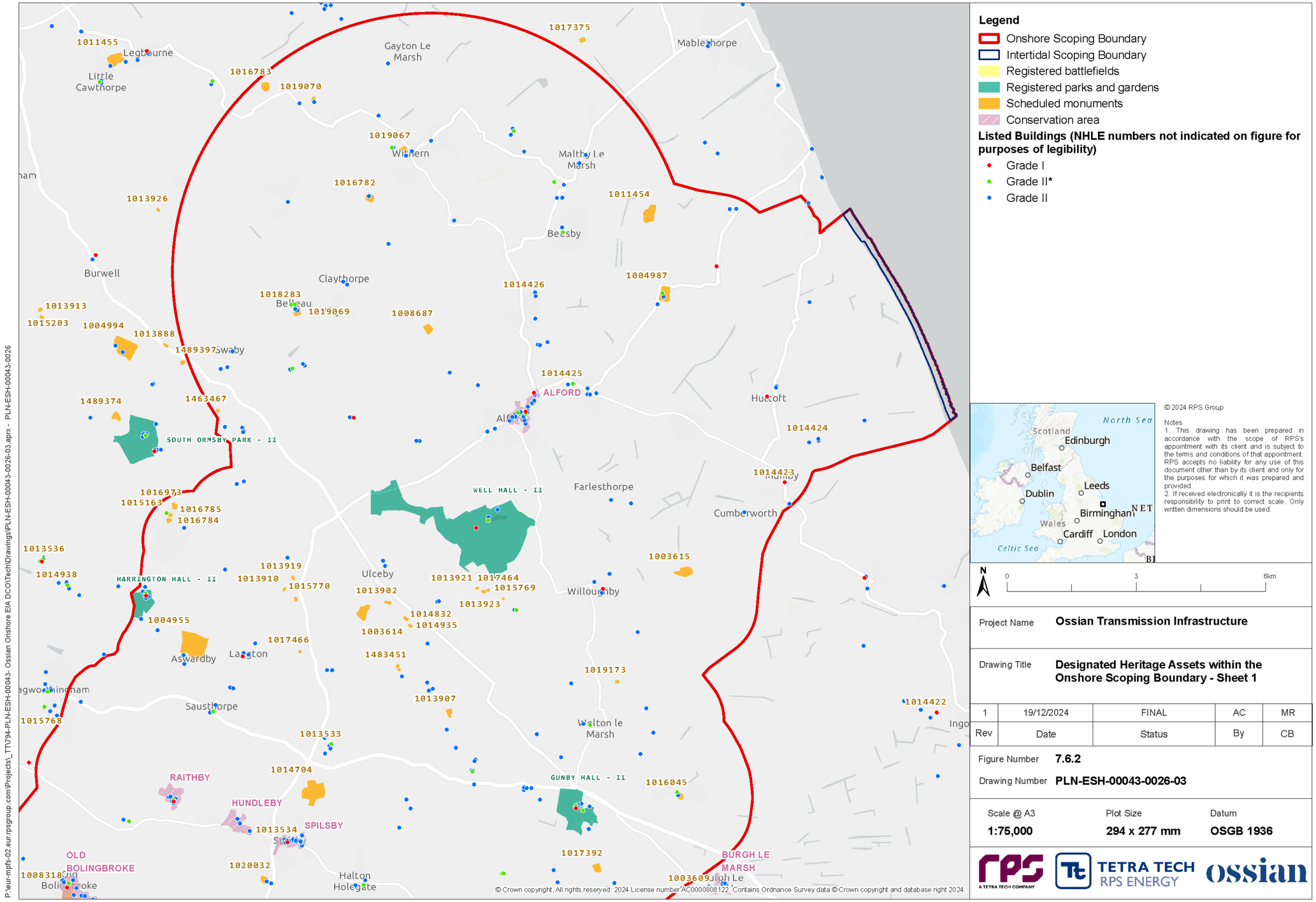
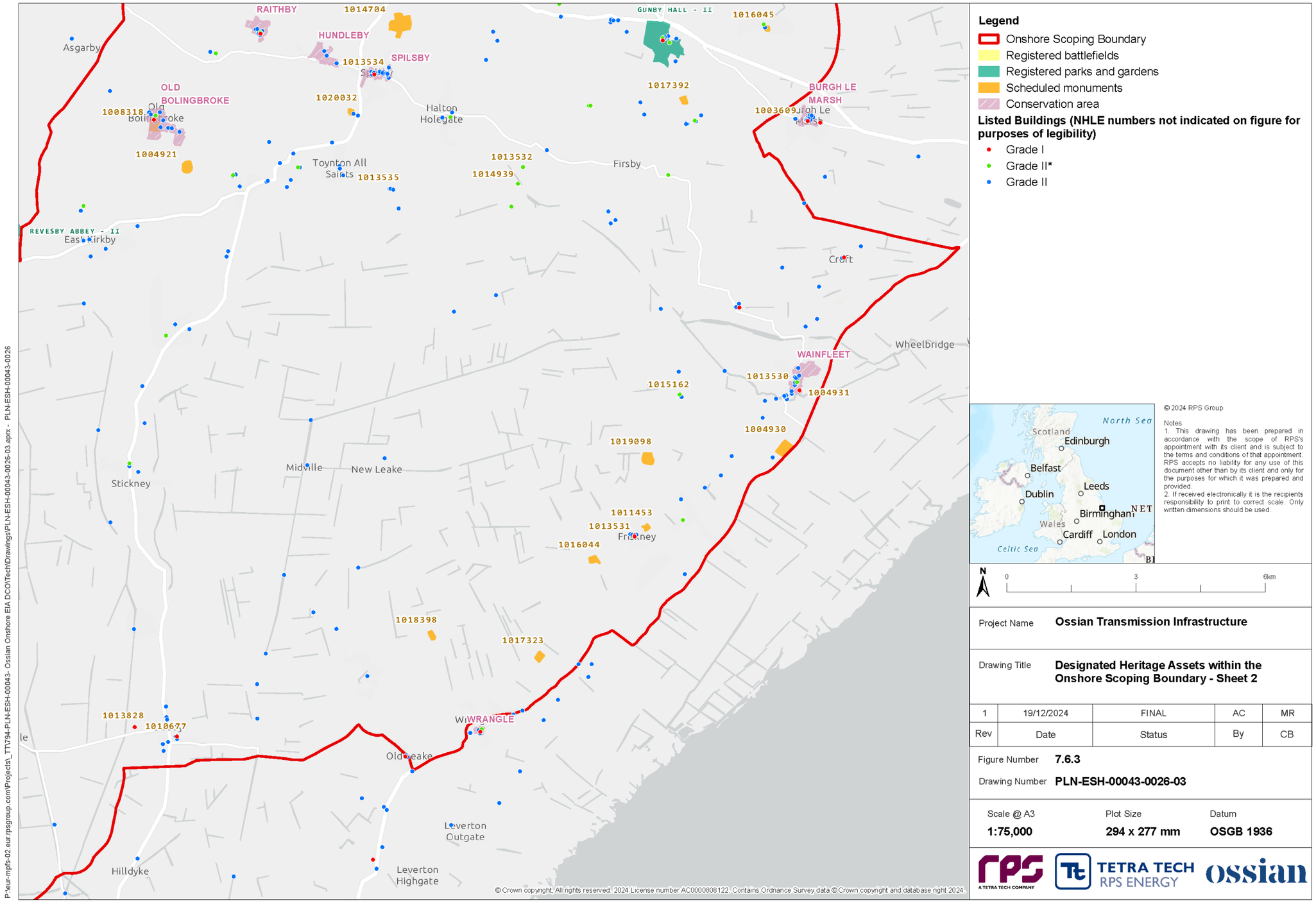


Figure 7.6.2: Designated Heritage Assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary (sheet 1)



Legend

- Onshore Scoping Boundary
- Registered battlefields
- Registered parks and gardens
- Scheduled monuments
- Conservation area

Listed Buildings (NHLE numbers not indicated on figure for purposes of legibility)

- Grade I
- Grade II*
- Grade II

Notes
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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Designated Heritage Assets within the Onshore Scoping Boundary - Sheet 2**

Rev	Date	Status	By
1	19/12/2024	FINAL	AC MR CB

Figure Number	**7.6.3**
Drawing Number	**PLN-ESH-00043-0026-03**

Scale @ A3	Plot Size	Datum
1:75,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.6.3: Designated Heritage Assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary (sheet 2)

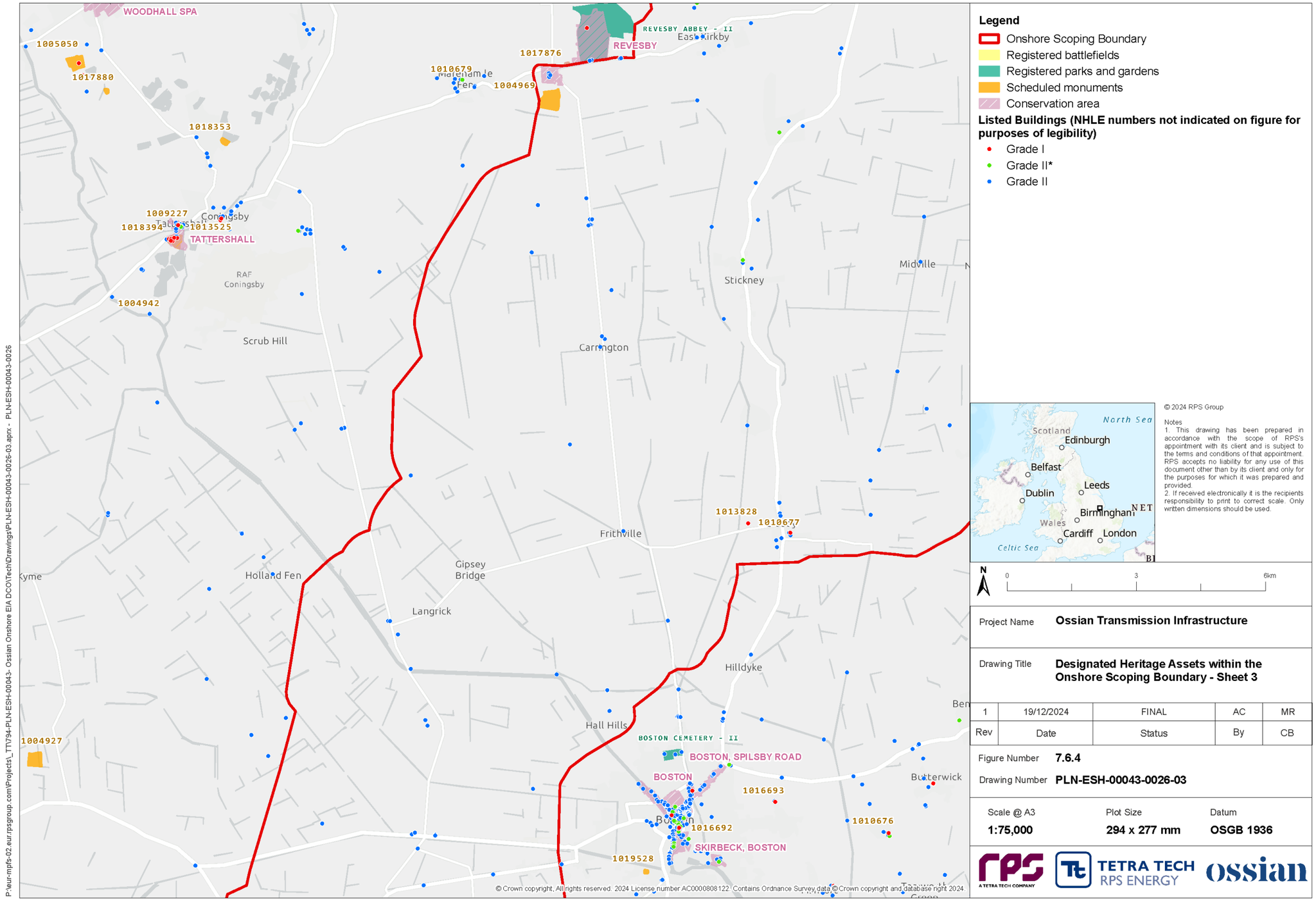
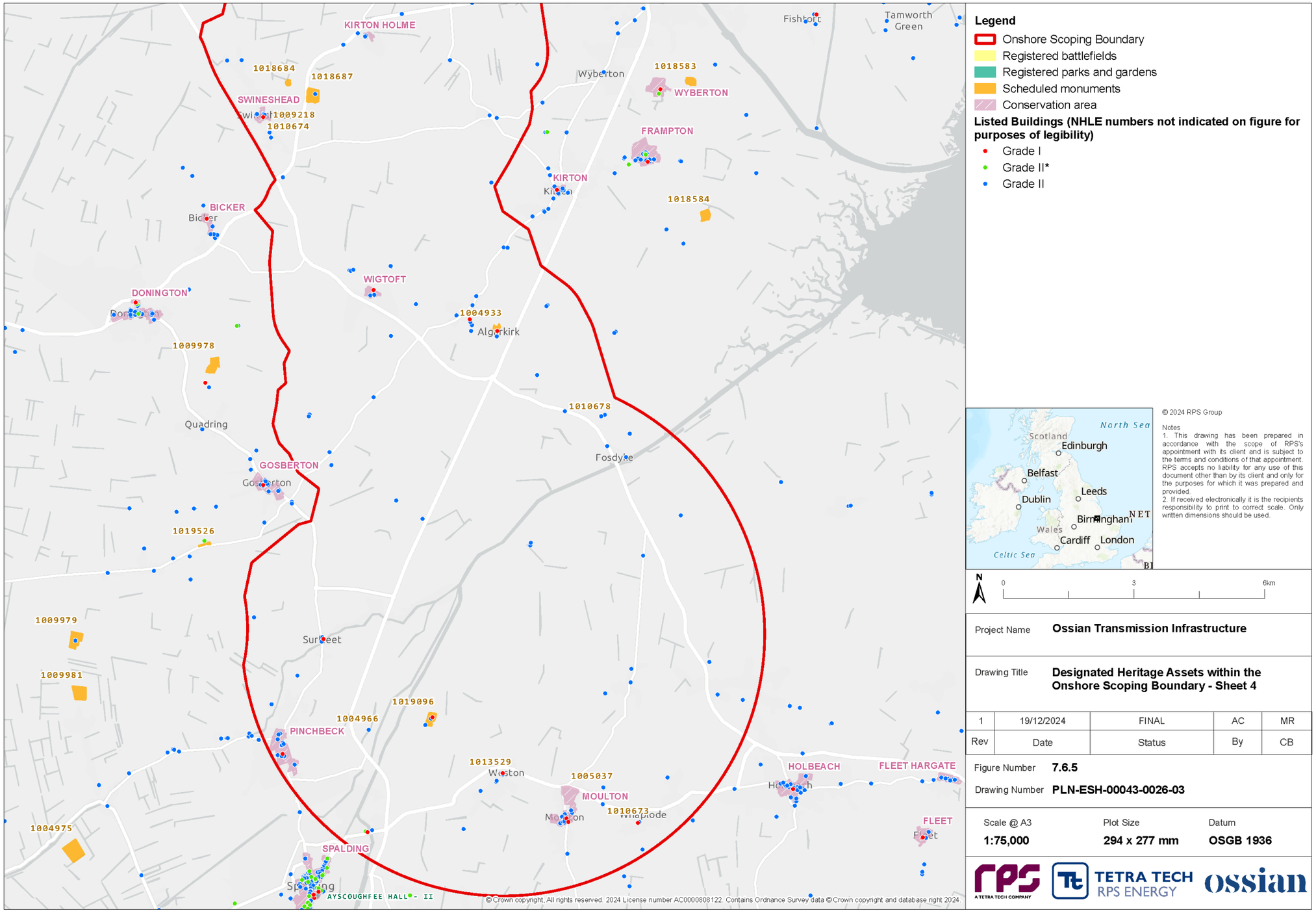


Figure 7.6.4: Designated Heritage Assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary (sheet 3)



Legend

- Onshore Scoping Boundary
- Registered battlefields
- Registered parks and gardens
- Scheduled monuments
- Conservation area

Listed Buildings (NHLE numbers not indicated on figure for purposes of legibility)

- Grade I
- Grade II*
- Grade II

Notes
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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Designated Heritage Assets within the Onshore Scoping Boundary - Sheet 4**

Rev	Date	Status	By	
1	19/12/2024	FINAL	AC	MR

Figure Number	**7.6.5**
Drawing Number	**PLN-ESH-00043-0026-03**

Scale @ A3	Plot Size	Datum
1:75,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.6.5: Designated Heritage Assets within the Onshore Scoping Boundary and Intertidal Scoping Boundary (sheet 4)

7.6.4 Proposed Data Sources

Desk Studies

7.6.4.1 A summary of the desk study sources to be used for the assessment of onshore and intertidal historic environment is provided in **Table 7.6.1** below. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.6.1: Data Sources

Title	Source	Summary
The National Heritage List for England	Historic England	Provides information regarding designated heritage assets.
The Lincolnshire Historic Environment Record	Lincolnshire County Council	Provides information regarding archaeological sites and designated heritage assets in Lincolnshire.
The Historic Landscape Characterisation Project for Lincolnshire (2011)	Lincolnshire County Council	Provides information regarding designated historic landscapes.
The Rapid Coastal Zone Assessment for Yorkshire and Lincolnshire	Humber Field Archaeology (2009)	Provides information regarding buried archaeological resources within Yorkshire and Lincolnshire.
The Environment Agency's library of open access LiDAR data	Environment Agency	Provides accurate elevation data at 1 m spatial resolution for all of England.
Historic aerial photographs held in national and local libraries and by Lincolnshire County Council	Lincolnshire County Council	Provides information regarding historical use of land within the study area.
Historic maps and documents including those held at the Lincolnshire Archives	Lincolnshire County Council	Provides information regarding historical use of land within the study area.
Conservation Area Character Appraisals in East Lindsey district Council, Boston Borough Council, South Holland District Council	East Lindsey district Council, Boston Borough Council, South Holland District Council	Provides information regarding designated Conservation Areas.
The Intertidal and Coastal Peat Database	Historic England	Provides information regarding intertidal and submerged peat deposits along England's coastline.
The East Midlands Historic Environment Research Framework	The East Midlands Historic Environment Research Framework	A series of regional research frameworks for the historic environment of England, including details of East Midlands sites yielding paleoenvironmental remains.
British Geological Survey, including available borehole records.	British Geological Survey	Provides information regarding the geological data, including records of boreholes.
The Portable Antiquities Scheme database	The Portable Antiquities Scheme database	Provides records of archaeological finds discovered by members of the public.
Simmons, I (2022) Fen and Sea: The Landscapes of South-East Lincolnshire AD 500 – 1700	Simmons, I (2022)	Provides information regarding designated historic landscapes.
Green, C R (2023) The Edge: The Landscape Evolution of the Lincolnshire Coastline	Green, C R (2023)	Provides information regarding designated historic landscapes.

Site-specific Surveys

7.6.4.2 In addition to the desk-based analysis, field surveys will also be undertaken to inform the assessment of onshore and intertidal historic environment. It is likely that a phased approach to field survey will be required, following discussions with the relevant stakeholders and completion of the reviews undertaken for the initial Desk-based Assessment (DBA).

7.6.4.3 The field surveys will be informed by environmental conditions and consultation will be undertaken to agree the scope of field survey and its suitability. Surveys are likely to include geophysical surveys in the form of magnetometer survey or possibly earth resistivity tomography in areas where deeper Holocene deposits (including peat) are likely to be present. The geophysical surveys will be followed by trial trenching, targeted on geophysical anomalies of potential archaeological interest, but also examining areas recorded as 'blank' by the geophysical surveys. The timing and extent of trial trenching will be discussed with consultees. An intertidal walkover and drone survey will also be undertaken.

7.6.5 Mitigation Measures

7.6.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Site selection and design processes will seek to avoid any direct physical impacts on designated heritage assets, where practicable.
- Site selection and design processes will seek to avoid or reduce any direct non-physical impacts on designated heritage assets (i.e. impacts arising from changes within the settings of such assets), where practicable.
- Site selection and design processes will seek to avoid any direct physical impacts on non-designated heritage assets, including known archaeological sites and features, where practicable.
- Where the construction of the Landfall and Onshore Transmission Infrastructure could result in adverse impacts on the character of the historic landscape (for example through the removal of historic field boundaries within the Onshore Export Cable Corridor), the selected construction methodologies would seek to reduce such adverse impacts and a programme of reinstatement will be undertaken to ensure that the impacts are short term where practicable.
- A CoCP will be produced, (in accordance with the Outline CoCP that will accompany the application for development consent) which will include measures to reduce adverse impacts on the onshore and intertidal historic environment.
- Soil Management Plan – which will contain measures to protect and maintain the quality of soils, including areas of peaty soils, during construction of the Onshore Transmission Infrastructure, including guidelines for the handling, storage and reinstatement of soils. This will ensure that land affected temporarily during construction can be restored to its former use. An Outline Soil Management Plan will be provided as part of the application for development consent.
- Development of a Landscape Management Plan primarily in relation to the landscape proposals at the Onshore Converter Station sites that sets out the long term landscape management for land permanently affected. An Outline Landscape Management Plan will be provided as part of the application for development consent.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.6.5.2 The mitigation requirements for the historic environment will be discussed with relevant local authorities, where required, as part of the ETGs prior to submission of the application.

7.6.6 Proposed Scope of the Assessment

7.6.6.1 Potential impacts that are proposed to be scoped in to the assessment for the onshore and intertidal historic environment are set out in **Table 7.6.2**.

7.6.7 Impacts Proposed to be Scoped Out

7.6.7.1 Impacts that are proposed to be scoped out of the assessment for the onshore and intertidal historic environment and the justification are set out in **Table 7.6.3**

Table 7.6.2: Potential Impacts Proposed to be Scoped in for the Onshore and Intertidal Historic Environment

Impact	C	O	D	Description	Proposed Approach to Assessment
Direct physical impacts	✓	×	×	Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and/or palaeoenvironmental interest.	Characterise the nature of buried archaeological remains and deposits of geoarchaeological and/or palaeoenvironmental interest (which will include peaty soils), ascribe value/importance and appraise likely magnitude of impact. Characterisation would be undertaken through a combination of desk-based research (including review of the Lincolnshire Historic Environment Record (HER) as well as reviews of historic maps, aerial photographs and available LiDAR data), targeted site walkover survey, and field evaluation through techniques that may include geophysical survey and trial trenching.
	✓	×	×	Loss of, or harm to, elements of the historic landscape.	Field boundaries within the defined onshore and intertidal historic environment study area will be reviewed against the archaeology and history criteria set out in Schedule 1 Part 2 of the Hedgerows Regulations 1997.
Direct non-physical impacts	✓	✓	✓	Construction and decommissioning: Harm to the significance of designated and non-designated heritage assets as a result of change within their setting. This could include visible change but could also include changes to the noise and dust environments. Operation and maintenance: Harm to the significance of designated and non-designated heritage assets as a result of change within their setting resulting from the operation and maintenance of the Onshore Converter Stations. This could include visible change but could also include change to the noise environment.	Construction and decommissioning: Identify which designated and non-designated heritage assets could be affected by the Onshore Transmission Infrastructure, review their current settings and appraise the likely change within their settings and the potential for this change to cause harm to the heritage significance of the asset. Operation and maintenance: Identify which designated and non-designated heritage assets could be affected by an Onshore Converter Station, review their current settings and appraise the likely change within the settings and the potential for this change to cause harm to the heritage significance of the asset.
	✓	✓	✓	Construction and decommissioning: Harm to the character of the historic landscape. Operation and maintenance: Harm to the character of the historic landscape resulting from the operation and maintenance of the Onshore Converter Stations.	Construction and decommissioning: Review the likely changes to the character of the historic landscape and appraise the potential for these changes to cause harm to this character. Operation and maintenance: Review the likely changes to the character of the historic landscape arising from the Onshore Converter Stations and appraise the potential for these changes to cause harm to this character.

Table 7.6.3: Impacts Proposed to be Scoped Out of the Assessment for the Onshore and Intertidal Historic Environment

Impact	Justification
Construction	
Direct non-physical impacts. Harm to the significance of designated and non-designated heritage assets as a result of change within their setting during construction for assets located further than 1 km from the edge of the Landfall and Onshore Export Cable Corridor (i.e. outside the study area).	The Landfall and Onshore Export Cable Corridor would primarily require excavation and would not require any works at height. The visibility of ground level works and associated activities would be limited to the immediate area. Any change within the setting of a heritage asset during construction of the Landfall and Onshore Export Cable Corridor would be very limited at more than 1 km. Consideration will be given to designated heritage assets of the highest level of significance located at a distance of more than 1 km only on the basis of professional judgement by the assessment team and in accordance with stakeholder comments.
Direct non-physical impacts. Harm to the significance of designated heritage assets as a result of change within their setting during construction for assets located further than 5 km from any Onshore Converter Station (i.e. outside the study area).	Taking into account the height of the Onshore Converter Stations and the effects of distance, any change within the setting of a designated heritage asset during construction of any Onshore Converter Station would be very limited at a distance of more than 5 km. Consideration will be given to designated heritage assets of the highest level of significance located at a distance of more than 5 km only at the discretion of the assessment team and in accordance with stakeholder comments.
Operation and Maintenance	
Direct physical impacts. Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and/ or palaeoenvironmental interest during operation and maintenance.	The Transition Joint Bays, Onshore Converter Stations and Onshore Export Cables would be monitored and operated remotely during the operational lifetime of the Landfall and Onshore Transmission Infrastructure. As such, potential impacts during operation and maintenance of the Onshore Transmission Infrastructure would be limited to repair and maintenance activities, which would be short term, infrequent in nature and small in scale. No excavation that could affect archaeology remains would be required. Any loss or harm to buried resources would occur during the construction phase. On completion of construction, the operation and maintenance phase of the Landfall and Onshore Transmission Infrastructure will not require any activities with the potential to impact on buried archaeological remains and deposits of geoarchaeological and/ or palaeoenvironmental interest.
Direct non-physical impacts. Harm to the significance of designated heritage assets as a result of change within their setting during operation and maintenance for assets located further than 5 km from any Onshore Converter Station.	Any change within the setting of a designated heritage asset during construction of any Onshore Converter Station would be very limited at a distance of more than 5 km. Consideration will be given to designated heritage assets of the highest level of significance located at a distance of more than 5 km only at the discretion of the assessment team and in accordance with stakeholder comments.
Direct non-physical impacts. Harm to the significance of designated and non-designated heritage assets as a result of change within their setting during operation and maintenance other than designated heritage assets located less than 5 km from any Onshore Converter Station.	There would be no changes within the settings of heritage assets arising from the operation and maintenance of any part of the Onshore Transmission Infrastructure other than the Onshore Converter Stations.

7.6.8 Proposed Assessment Methodology

7.6.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.6.2** is described below.

7.6.8.2 The onshore and intertidal ornithology assessment will be undertaken in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report.

Legislation and Policy

7.6.8.3 An overview of relevant legislation and policy is provided in section 2 of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.6.8.4 The following guidance documents will be used to inform the assessment of onshore and intertidal historic environment, although this list is not exhaustive and other guidance may also be found to be relevant:

- Chartered Institute for Archaeologists' Standard and guidance for historic environment desk-based assessment (CIfAS, 2020a);
- Chartered Institute for Archaeologists' Standard and guidance for archaeological geophysical survey (CIfAS, 2020b);
- Chartered Institute for Archaeologists' Standard for archaeological field evaluation (CIfAS, 2023);
- Chartered Institute for Archaeologists' Universal guidance for archaeological field evaluation (CIfAS, 2023);
- Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, Planning Practice Guidance (Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities, 2019);
- EAC Guidelines for the Use of Geophysics in Archaeology: Questions to ask and Points to Consider (EAC, 2016);
- English Heritage, Conservation Principles, Policies and Guidance for the sustainable management of the historic environment (English Heritage, 2008);
- Highways England, Transport Scotland, Welsh Government, Department for Infrastructure, DMRB LA 106, Cultural heritage assessment, Revision 1, (Highways England *et al.,* 2020d);
- Historic England, Historic Environment Good Practice Advice in Planning: 2 Managing Significance in Decision-Taking in the Historic Environment (Historic England, 2015a);
- Historic England, Geoarchaeology: Using earth sciences to understand the archaeological record (Historic England, 2015b);
- Historic England, Preserving Archaeological Remains: Decision-taking for Sites under Development (Historic England, 2016);
- Historic England, The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) (Historic England, 2017);
- Historic England, Piling and Archaeology: Guidance and Good Practice (Historic England, 2019);
- Historic England, Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits (Historic England, 2020);
- Institute of Environmental Management and Assessment, Institute of Historic Building Conservation and Chartered Institute for Archaeologists, Principles of Cultural Heritage Impact Assessment in the UK (IEMA, 2021); and
- Lincolnshire County Council, Lincolnshire Archaeology Handbook (Lincolnshire County Council, 2024).

Assessment of Effects

7.6.8.5 The assessment of likely significant effects on the onshore and intertidal historic environment will be described in a chapter within the PEIR and the subsequent ES, supported by technical appendices as necessary.

7.6.8.6 The onshore and intertidal historic environment assessment will be informed by a Historic Environment DBA. This will set out the results of a review of available information regarding the location and nature of known designated and non-designated heritage assets within the defined 1 km historic environment study area described above. The DBA will also review the potential for the presence of currently unknown buried archaeological remains as well as deposits of geoarchaeological and/or palaeoenvironmental interest (which will include peaty soils). The character of the historic landscape will be identified, as well as the locations of any boundaries that could be classed as 'Important Hedgerows' using the archaeology and history criteria set out in Schedule 1 Part 2 of the Hedgerows Regulations 1997. The proposed data sources to be utilised within this review are set out below and include documentary, photographic and cartographic material. Data available from other projects (such as Eastern Green Link 3 and 4, Outer Dowsing, Viking Link and Grimsby to Walpole), where these fall within the study area, will be reviewed.

7.6.8.7 The DBA will be prepared as early as practicable so that it is available within the PEIR. An updated version of the DBA will be prepared for the ES, taking account of comments received during the PEIR consultation and also any additional information that has become available (such as the results of any purposive fieldwork undertaken for the Onshore Transmission Infrastructure).

7.6.8.8 The onshore and intertidal historic environment assessment will also be informed by a settings assessment" which will present the results of an assessment of the likely significant effects on the heritage significance of designated and non-designated heritage assets within the defined 5 km and 1 km settings study areas described above as a result of change within their setting ('settings assessment'). Non-designated heritage assets will include buildings which are not on the statutory list of historic buildings but which have been identified as being of historic interest through inclusion on a list prepared by a local planning authority or within an adopted neighbourhood plan. The Settings Assessment will be undertaken in line with the relevant guidance set out below.

7.6.8.9 For the PEIR, the Settings Assessment will, as a minimum, establish which designated and non-designated heritage assets could be affected and will review their current setting and the contribution that the setting makes to the heritage significance of each asset. The ability to appraise the likely change within the setting (as a result of the Onshore Transmission Infrastructure), and the potential

for this change to cause harm to the heritage significance of the asset, will depend on the level of design (of the Onshore Transmission Infrastructure) available at the time that the Settings Assessment for the PEIR is being prepared. An updated Settings Assessment will be prepared for the ES, taking account of the additional design information that has become available and also any comments received during the PEIR consultation.

7.6.8.10 The Settings Assessment will include review of the Zone of Theoretical Visibility (ZTV) prepared for the Landscape and Visual Resources assessment (see **section 7.11**), although the potential for, and nature of, any change within the setting of a heritage asset will primarily be based on information acquired through a programme of site visits.

7.6.8.11 Potential impacts of the Landfall and Onshore Transmission Infrastructure on the onshore and intertidal historic environment will be assessed in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report.

7.6.8.12 Where significant adverse effects are likely to occur to onshore and intertidal historic environment receptors, suitable mitigation or compensatory measures will be identified.

7.6.8.13 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for the historic environment. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.6.8.14 Ongoing engagement will be undertaken through the relevant ETGs to ensure that stakeholders are aware of emerging survey results and the likely mitigation requirements. The approach to mitigation will be discussed with the ETGs, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

7.6.8.15 The criteria for defining the sensitivity of receptors and the magnitude of impacts will be based on DMRB methodology (Highways England *et al.,* 2020d).

Receptor Sensitivity

7.6.8.16 The criteria to be used for defining the sensitivity of onshore and intertidal historic environment receptors is outline in **Table 7.6.4** below. These are based on the criteria set out in Highways England *et al.,* 2020d.

Table 7.6.4: Sensitivity Criteria

Sensitivity	Definition/examples
Very High	• Heritage assets of international importance. • World Heritage Sites and the individual attributes that convey their Outstanding Universal Value. • Areas associated with intangible heritage and areas with associations with particular innovations, scientific developments, movements or individuals of global importance. • Assets that can contribute significantly to acknowledged international research objectives.
High	• Scheduled Monuments, Listed Buildings (Grade I, II*), Registered Historic Parks and Gardens (Grade I, II*), Registered Battlefields, Protected Wreck Sites and Protected Military Remains. • Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing grade. • Unscheduled sites and monuments of schedulable quality and/or importance including those discovered through the course of evaluation or mitigation. • Archaeological assets that can contribute significantly to acknowledged national research objectives. • Conservation Areas containing very important buildings (Grade I and II* Listed Buildings). • Non-designated structures of clear national importance. • Palaeogeographic features with a demonstrable high potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape. • Non-designated sites of wrecked ships and aircraft that are demonstrably of equivalent archaeological importance to those already designated.
Medium	• Conservation Areas, Grade II Listed Buildings and Grade II Registered Historic Parks and Gardens. • Non-designated archaeological assets that can contribute to regional research objectives. • Historic townscapes and landscapes with reasonable coherence, time depth and other critical factor(s). • Unlisted assets that can be shown to have exceptional qualities or historic association. • Non-designated historic landscapes that would justify special historic landscape designation, landscapes of regional value. • Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factors. • Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.

Sensitivity	Definition/examples
	• Non-designated wrecks of ships or aircraft that have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.
Low	• Heritage assets with importance to local interest groups or that contribute to local research objectives. • Locally Listed Buildings and Sites of Importance within a district level. • Non-designated archaeological assets compromised by poor preservation and/or poor contextual associations. • Non-designated historic landscapes with importance to local interest groups. • Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations. • Prehistoric deposits with low potential to contribute to an understanding of the palaeoenvironment. • Non-designated wrecks of ships or aircraft that have low potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.
Negligible	• Assets with little or no archaeological or historical interest due to poor preservation or survival. • Buildings of little or no architectural or historic note; buildings of an intrusive character. • Landscapes with little or no significant historical interest.
Unknown	• The importance of the heritage asset cannot be ascertained from available evidence.

Impact Magnitude

7.6.8.17 The criteria to be used for defining the magnitude of impacts on onshore and intertidal historic environment receptors is outline in **Table 7.6.5** below. These are based on the criteria set out in Highways England *et al.,* 2020d.

Table 7.6.5: Impact Magnitude Criteria

Magnitude of impact		Definition
High	Adverse	Change to most or all key elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is lost or substantially harmed.
	Beneficial	Change to most or all key elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is substantially enhanced.
Medium	Adverse	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is clearly harmed.
	Beneficial	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is clearly enhanced.
Low	Adverse	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is slightly harmed.
	Beneficial	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is slightly enhanced.
Negligible	Adverse	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is barely affected.
	Beneficial	Change to elements of the heritage asset, or changes within the setting of the asset, such that the heritage significance of the asset is barely affected.
No change		No changes to elements of the heritage asset, or within the setting of the asset.

Significance of Effect

7.6.8.18 The significance of the effect upon a heritage asset will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.6.8.19 Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement. For the purpose of this assessment, any effect with a significance level of moderate or above will be considered to be a likely significant effect in terms of the EIA Regulations. Where the magnitude of impact is 'no change', no effect would arise.

7.6.8.20 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.6.8.21 The CEA for the historic environment will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The historic environment chapter of the ES will also consider inter-related effects arising from the Ossian Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.6.8.22 The approach to transboundary impacts is set out in **section 5.10**. **Appendix 5.1** presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on historic environment are screened in to the EIA process.

Relevant Consultation

7.6.8.23 The Applicant has undertaken introductory consultation with statutory consultees, including Lincolnshire County Council, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Historic Environment chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Historic England; and
- Lincolnshire County Council.

7.6.9 Next Steps

7.6.9.1 The following are proposed as next steps in relation to the historic environment.

- An ETG will be setup for the onshore and intertidal historic environment. This ETG will provide a platform to discuss and agree the proposed study areas, assessment approach and programmes for field surveys with Historic England and relevant local authorities prior to publication of the PEIR.
- Taking into account feedback received as part of the Scoping Opinion, the location of the Landfall and Onshore Transmission Infrastructure (and subsequent study areas) will be refined. Once these have been refined, data acquisition will commence leading to the preparation of the draft DBA, and the ETG discussions regarding the methodologies and programmes for field surveys can be progressed. Site visits will be undertaken to review the current settings of designated heritage assets.
- The outcome of the assessment, including desk-based analysis and site surveys undertaken will then be reported as part of onshore and intertidal historic environment chapter of the PEIR and supporting documentation.

7.7. Land Use and Recreation

7.7.1 Introduction

7.7.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for land use and recreation. The land use and recreation assessment will consider the likely significant effects on soils (including peat resources), agricultural land, farm holdings and recreational resources, including Public Rights of Way (PRoW) and other promoted routes during construction, operation and maintenance and decommissioning of the Landfall and Onshore Transmission Infrastructure. **Section 6.10** of this EIA Scoping Report addresses infrastructure and other sea users seaward of MHWS.

7.7.1.2 Impacts in relation to the underlying geology are considered in **section 7.2**, while impacts in relation to field drainage are considered in **section 7.3**.

7.7.2 Proposed Study Area for the Assessment

7.7.2.1 The study area to be used for the assessment of land use and recreation (hereafter referred to as ‘the study area’) will be defined as the land to be temporarily or permanently required for the Landfall and Onshore Transmission Infrastructure (which will be defined as the Order Limits by the time of the application), landward of MLWS. This study area allows for inclusion of the beach area as a recreational resource. The following aspects of the environment will be considered within the study area:

- soil types and patterns of soils, including and relevant topographic and climatic data;
- the quality of agricultural land, in accordance with the Ministry of Agriculture, Fisheries and Food (MAFF) Agricultural Land Classification (ALC) guidelines (MAFF, 1988), including ‘Best and Most Versatile’ (BMV) ALC Grades 1, 2 and 3a agricultural land;
- peat, including areas of peat within the study area;
- farm holdings and/or enterprises;
- recreational resources including:
  - PRoW and other promoted routes, including public footpaths, bridleways, National Cycle Routes (NCRs), Long Distance Footpaths and National Trails;
  - users of PRoW and other promoted routes, including pedestrians, cyclists, equestrians and other forms of recreational users;
  - recreational facilities, such as golf courses, sports facilities, airports, livery yards and stables; and
  - land used by local communities, including areas of designated open country, registered common land and access land and public open space (e.g. registered parks and gardens, playing fields, public beaches).

7.7.2.2 With regard to farm holdings and/or enterprises, the ownership boundaries of farms with land that coincides with the Landfall or Onshore Transmission Infrastructure will be used to inform the assessment of land use and recreation. This means that impacts to an entire land holding will be considered, even where that extends beyond the boundary of the land required. As such, the study area for the purposes of the assessment of farm holdings and/or enterprises will encompass the land to be temporarily or permanently required for the Landfall or Onshore Transmission Infrastructure and the full extent of affected land holdings.

7.7.3 Baseline Environment

7.7.3.1 An outline of the baseline environment for land use and recreation based upon an initial review of identified land use and recreation receptors within the Onshore Scoping Boundary and Intertidal Scoping Boundary, is provided in the following sections. This is illustrated by **Figure 7.7.1** to **Figure 7.7.11**. The baseline environment set out here is based on a desk study review of key mapping data sets and EIA Scoping Reports and/or ESs for other projects and/or plans. Details of the data sources to be used to inform the more detailed baseline for the EIA are set out in **Table 7.7.4**.

Soilscapes

7.7.3.2 According to the BGS viewer, there are a total of 11 different soilscapes located within the Onshore Scoping Boundary and Intertidal Scoping Boundary. The area predominantly comprises soilscapes 21 and 18, interspersed with comparatively smaller areas of soilscapes 3, 5, 6, 7, 10, 15, 20, 22 and 23. A summary of each soilscape located within the Onshore Scoping Boundary and Intertidal Scoping Boundary, including the soilscape number and description is provided in **Table 7.7.1** below

Table 7.7.1: Summary of Soil Associations within the Onshore Scoping Boundary and Intertidal Scoping Boundary

Soilscape	Description
3	Shallow lime-rich soils over chalk or limestone
5	Freely draining lime-rich loamy soils
6	Freely draining slightly acid loamy soils
7	Freely draining slightly acid but base-rich soils
10	Freely draining slightly acid sandy soils
15	Naturally wet very acid sandy and loamy soils
18	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
20	Loamy and clayey floodplain soils with naturally high groundwater
21	Loamy and clayey soils of coastal flats with naturally high groundwater
22	Loamy soils with naturally high groundwater
23	Loamy and sandy soils with naturally high groundwater and a peaty surface

7.7.3.3 The location and geographic extent of soilscapes according to the BGS soilscapes mapping is presented in **section 7.2** of this section of the EIA Scoping Report.

Superficial Peat

7.7.3.4 The superficial geology underlying the Onshore Transmission Infrastructure (landward of MHWS) is set out in **section 7.2** of this EIA Scoping Report. As shown in **section 7.2,** the BGS mapping data indicates that superficial deposits of peat are likely to be present within the Onshore Scoping Boundary and Intertidal Scoping Boundary.

Agricultural Land Classification

Provisional ALC Mapping

7.7.3.5 The agricultural land quality within the Onshore Scoping Boundary and Intertidal Scoping Boundary, including the grade, quality, area of land (hectares, ha) and percentage coverage, according to the provisional ALC mapping data is summarised in **Table 7.7.2** below. The provisional ALC mapping within the Onshore Scoping Boundary and Intertidal Scoping Boundary is presented in **Figure 7.7.2.**

Table 7.7.2: Summary of Provisional ALC Mapping within the Onshore Scoping Boundary and Intertidal Scoping Boundary

ALC grade	Quality	Area of land (ha)	Coverage (%)
1	Excellent	19916.8	24.3
2	Very good	33441.8	41.0
3	Good to moderate	27538.4	33.6
4	Poor	516.1	0.6
Non-agricultural	N/A	487.6	0.6
Urban	N/A	109.6	0.1
Total		82010.3	100%

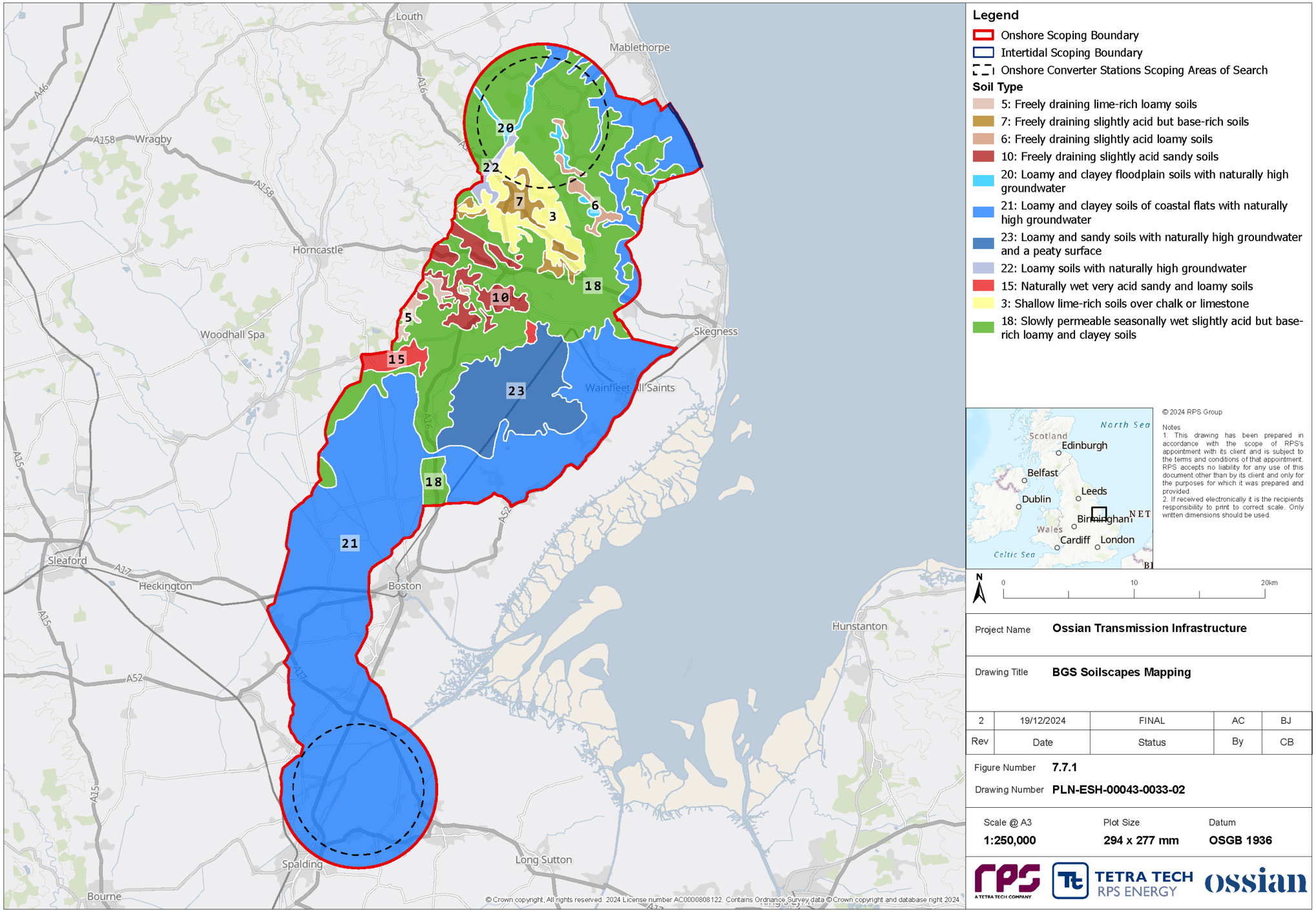


Figure 7.7.1: BGS Soilscapes Mapping

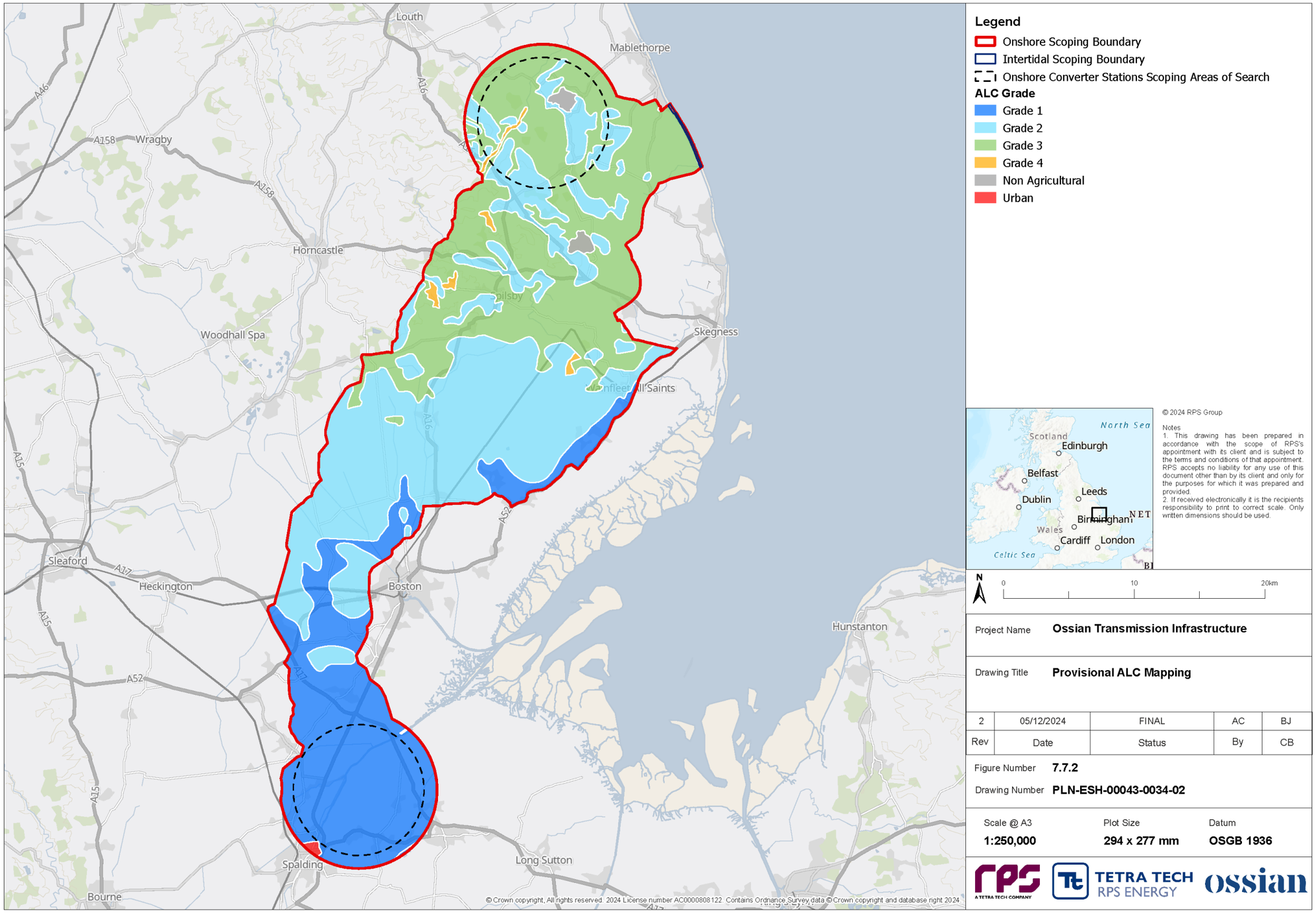


Figure 7.7.2: Provisional ALC Mapping

7.7.3.6 As shown in **Figure 7.7.2**, according to the provisional ALC mapping data, the Onshore Scoping Boundary and Intertidal Scoping Boundary comprises ALC Grade 1 (excellent quality), Grade 2 (very good quality) and Grade 3 (good to moderate quality) land, interspersed will smaller areas of ALC Grade 4 (poor quality), non-agricultural and urban land.

7.7.3.7 With respect to the Onshore Converter Stations, the northern search area predominantly comprises Grade 2 (very good quality) and Grade 3 (good to moderate quality) land, whilst the southern search area is situated entirely within an area of Grade 1 (excellent quality) land (see **Figure 7.7.2**).

7.7.3.8 However, whilst the provisional ALC mapping provides useful information on the relative quality of agricultural land, it does not differentiate areas of Subgrade 3a (good quality) and 3b (lower quality) land. It cannot, therefore, be used in isolation to accurately identify the distribution of ALC grades. Therefore, representative soil surveys will be undertaken to determine the quality of agricultural land within the Onshore Scoping Boundary and Intertidal Scoping Boundary and inform the assessment of land use and recreation to be reported in the ES.

Detailed post-1988 ALC Survey

7.7.3.9 Three areas within the Onshore Scoping Boundary and Intertidal Scoping Boundary have been subject to detailed surveys, which are presented in **Figure 7.7.3, Figure 7.7.4** and **Figure 7.7.5**.

7.7.3.10 The area of land subject to detailed post-1988 surveys located towards the northern part of the Onshore Scoping Boundary and Intertidal Scoping Boundary predominantly comprises Grade 3a (good quality) and Grade 3b (moderate quality) land, with a smaller area of Grade 2 (very good quality) land (see **Figure 7.7.3**).

7.7.3.16 provides a summary of the PRoW and other promoted routes, including public footpaths, bridleways, Byways Open to All Traffic (BOATs), NCR 1, MacMillan Way – Boston to Abbotsbury Long Distance Footpath and two separate sections of the proposed National Trail, King Charles III England Coast Path Route.

7.7.3.17 The location and geographic extent of the PRoW and other promoted routes within the Onshore Scoping Boundary and Intertidal Scoping Boundary is presented in **Figure 7.7.6**, **Figure 7.7.7** and **Figure 7.7.8**.

7.7.3.11 The area of land subject to detailed post-1988 surveys located towards the central part of the Onshore Scoping Boundary and Intertidal Scoping Boundary (west of the town of Boston) comprises Grade 1 (excellent quality) and Grade 2 (very good quality) land (see **Figure 7.7.4**).

7.7.3.12 The area of land subject to detailed post-1988 surveys located towards the southern part of the Onshore Scoping Boundary and Intertidal Scoping Boundary comprises Grade 2 (very good quality), Grade 3a (good quality) and Grade 3b (moderate quality) land (see **Figure 7.7.5**).

7.7.3.13 Where overlap exists between each of the three areas subject to detailed post-1988 surveys and provisional ALC mapping data, there is general alignment of the ALC grade identified between the two data sources.

Farm Holdings

7.7.3.14 The Onshore Scoping Boundary and Intertidal Scoping Boundary is intentionally broad at this stage of the site selection process. As such, the farm holdings potentially impacted during the construction, operation, maintenance, and decommissioning of the Onshore Transmission Infrastructure will be identified and evaluated in the land use and recreation chapter of the PEIR and subsequent ES, once the study area has been refined.

Recreational Resources

Public Rights of Way

7.7.3.15 The Onshore Scoping Boundary and Intertidal Scoping Boundary coincides with multiple definitive PRoW and other promoted routes.

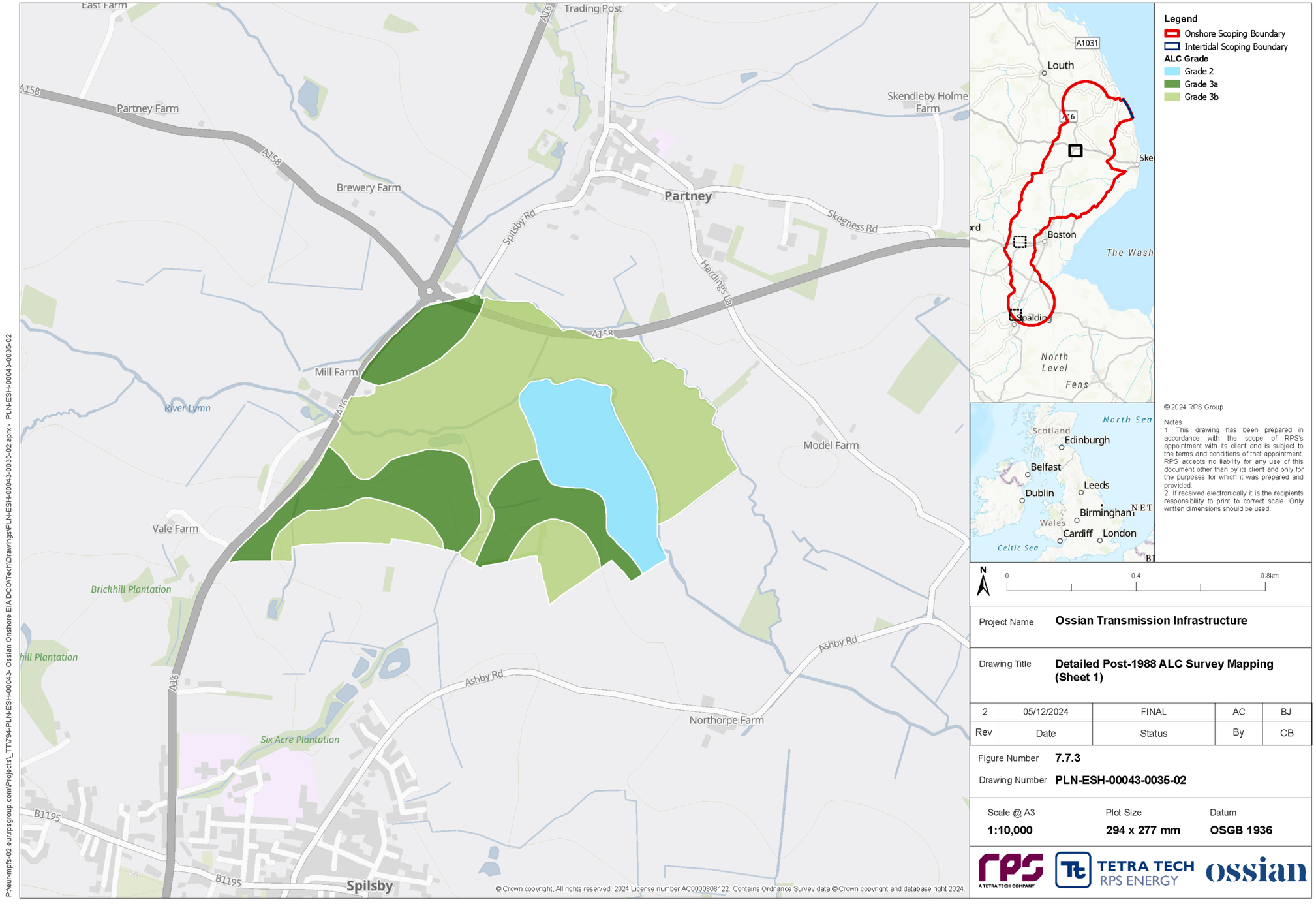


Figure 7.7.3: Detail Post-1988 ALC survey Mapping (sheet 1)

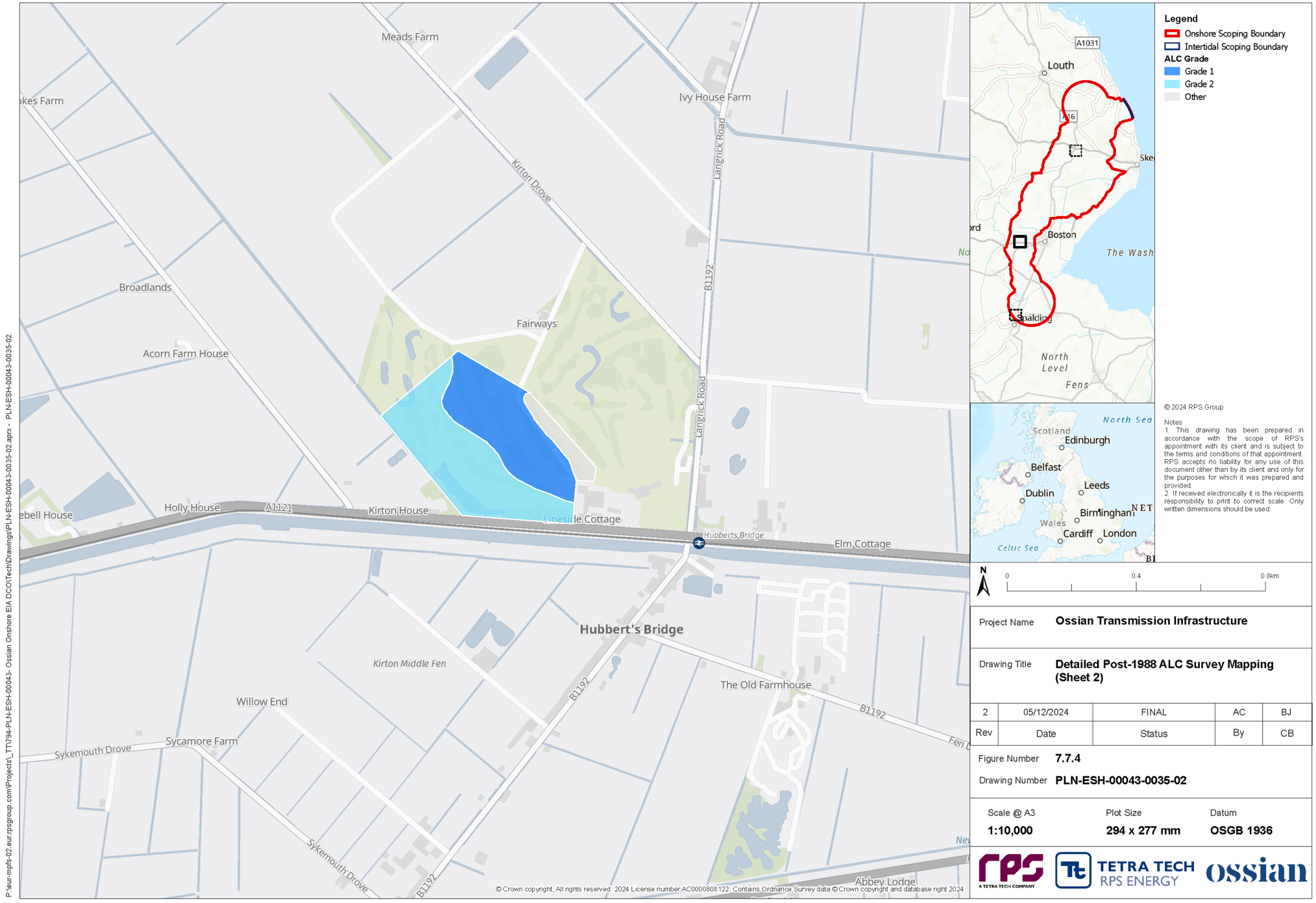


Figure 7.7.4: Detail Post-1988 ALC Survey Mapping (sheet 2)

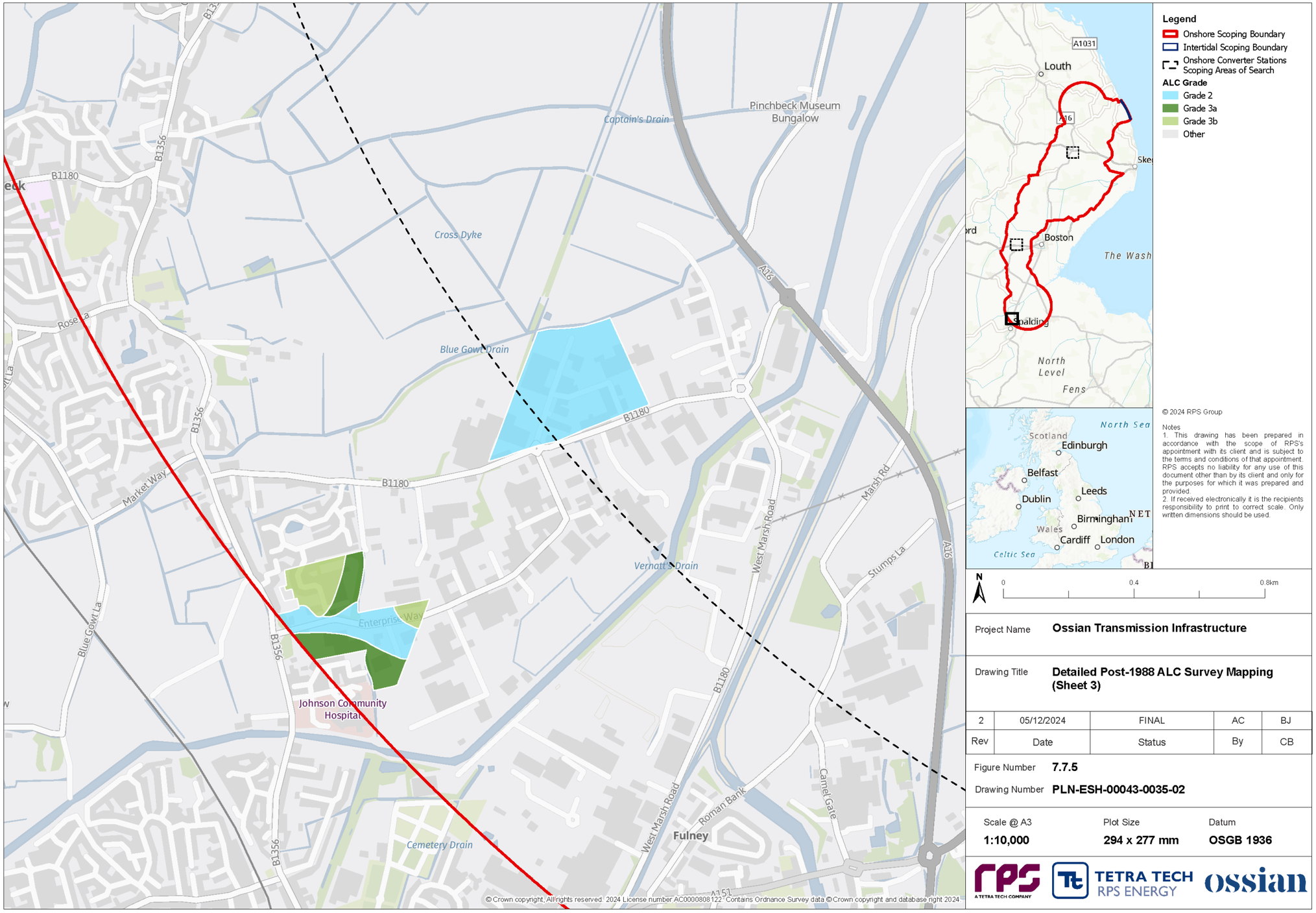
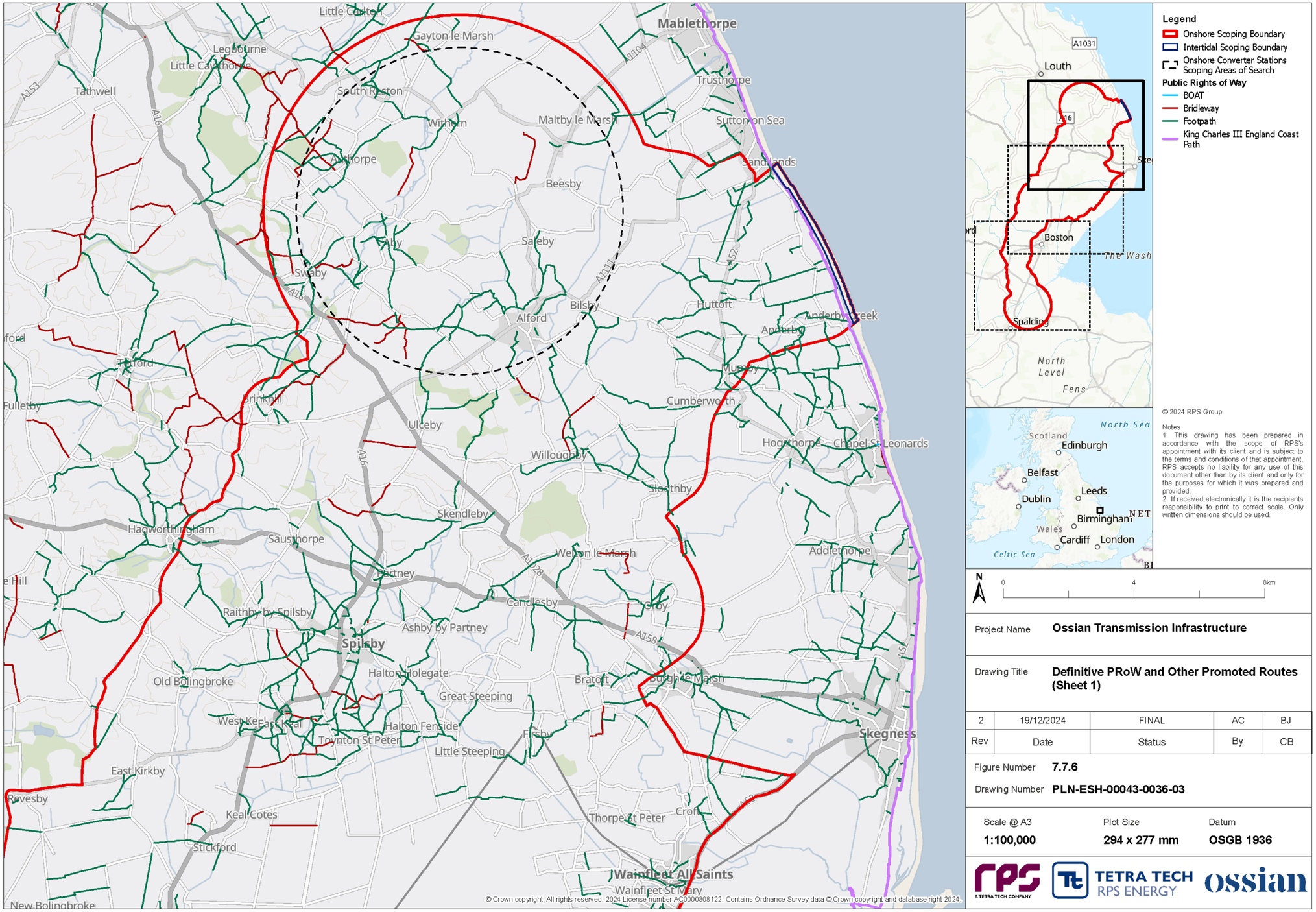


Figure 7.7.5: Detail Post-1988 ALC Survey Mapping (sheet 3)



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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Definitive PRoW and Other Promoted Routes (Sheet 1)**

Rev	Date	Status	By	
2	19/12/2024	FINAL	AC	BJ

Figure Number	**7.7.6**
Drawing Number	**PLN-ESH-00043-0036-03**

Scale @ A3	Plot Size	Datum
1:100,000	**294 x 277 mm**	**OSGB 1936**

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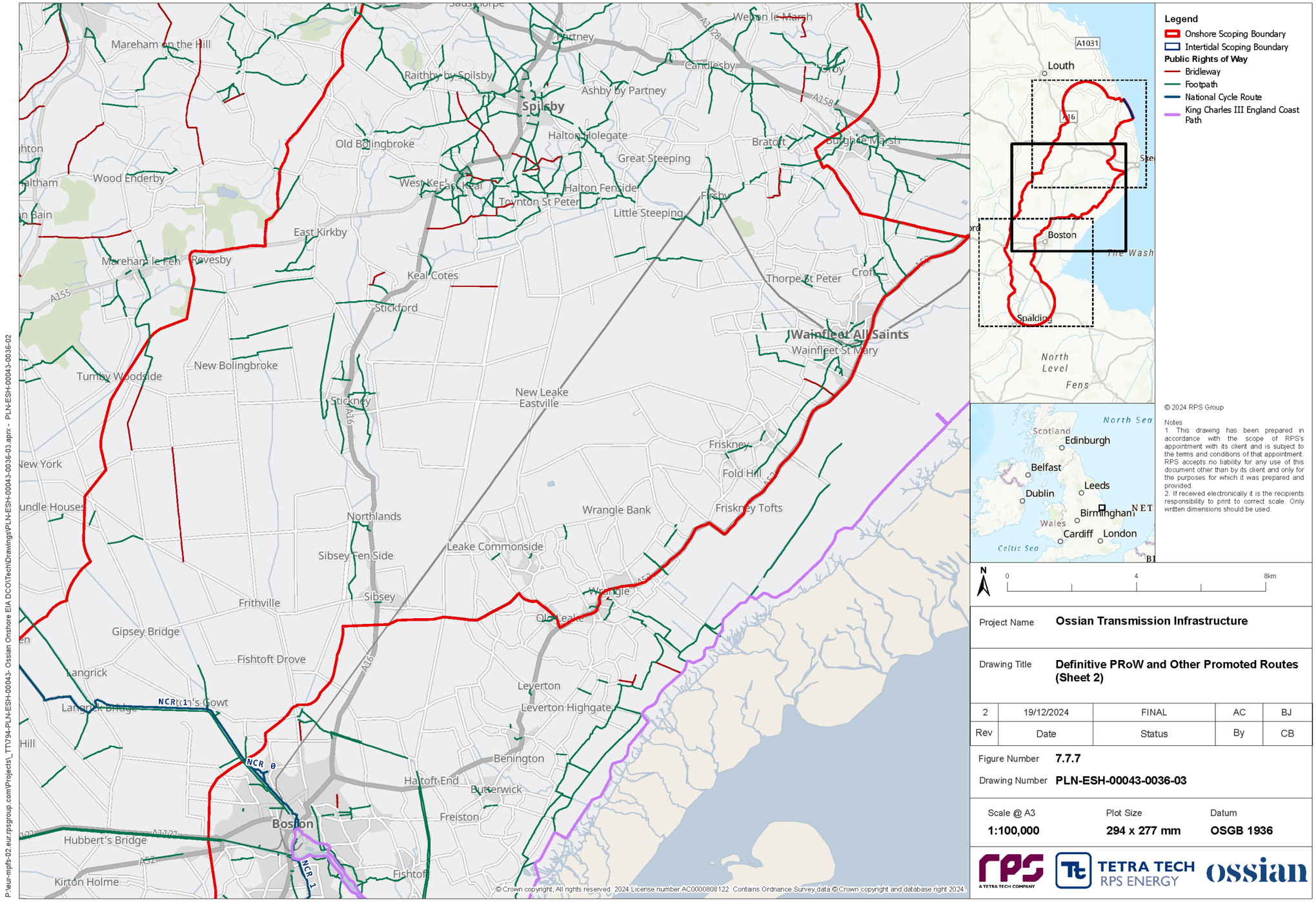
Figure 7.7.6: Definitive PRoW and Other Promoted Routes (sheet 1)



Legend

- Onshore Scoping Boundary
- Intertidal Scoping Boundary

Public Rights of Way

- Bridleway
- Footpath
- National Cycle Route
- King Charles III England Coast Path

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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Definitive PRoW and Other Promoted Routes (Sheet 2)**

Rev	Date	Status	By	
2	19/12/2024	FINAL	AC	BJ

Figure Number	**7.7.7**
Drawing Number	**PLN-ESH-00043-0036-03**

Scale @ A3	Plot Size	Datum
1:100,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.7.7: Definitive PRoW and Other Promoted Routes (sheet 2)

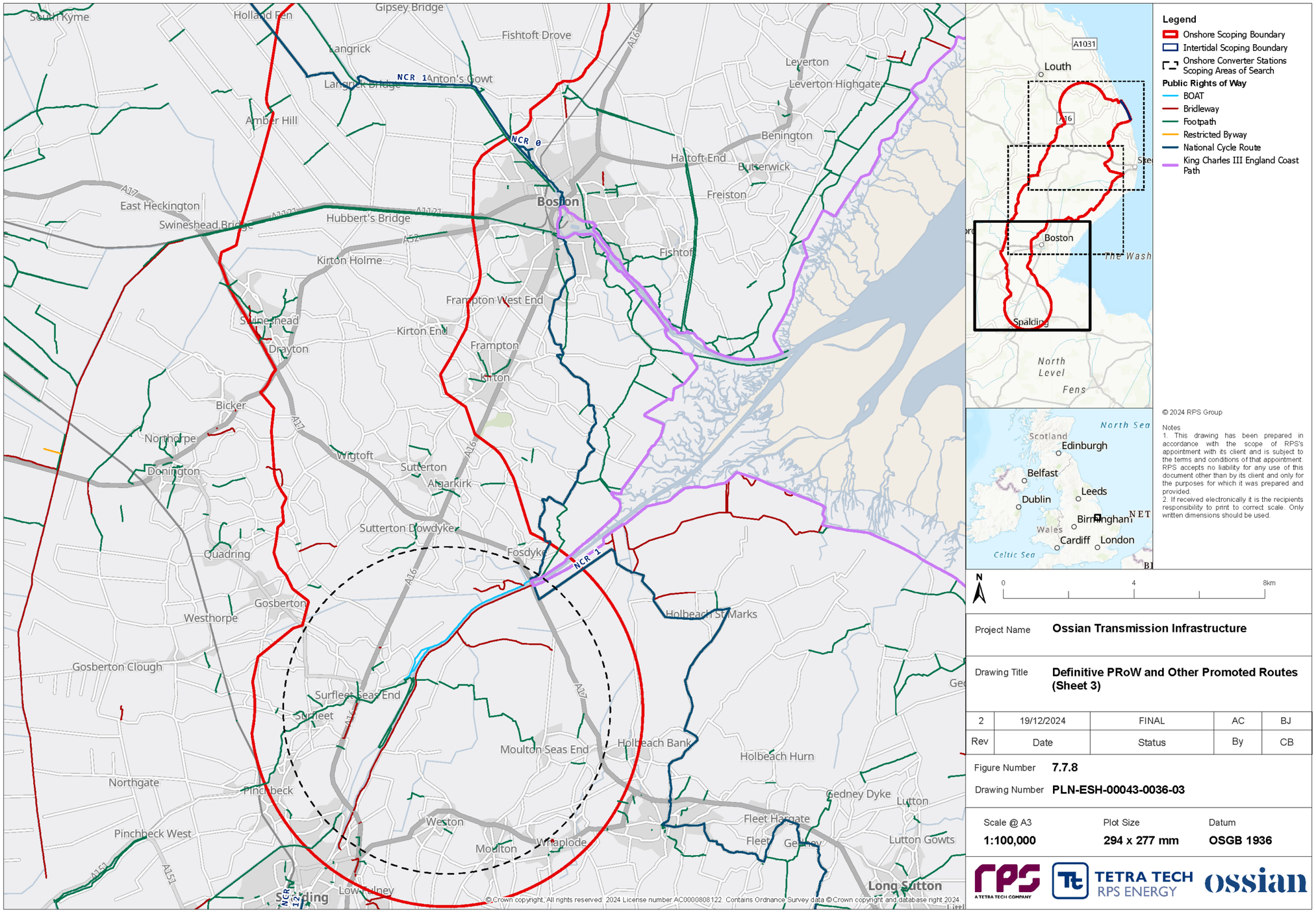


Figure 7.7.8: Definitive PRoW and Other Promoted Routes (sheet 3)

Table 7.7.3: PRoW and Other Promoted Routes within the Onshore Scoping Boundary and Intertidal Scoping Boundary

Type	Description
King Charles III England Coast Path Route - Skegness to Mablethorpe	The King Charles III England Coast Path Route is a new National Trail being created by Natural England under the Marine and Coastal Access Act 2009
King Charles III England Coast Path Route - Sutton Bridge to Skegness	
National Cycle Route 1	NCR 1 forms part of the National Cycle Network and routes from Dover up to the Highlands of Scotland.
MacMillan Way – Boston to Abbotsbury Long Distance Footpath	A long distance footpath, which runs along sea banks and river banks, across the Lincolnshire fens via Stamford, eventually to Abbotsbury on the Dorset Coast.
MacMillan Way – Cross Britain Way Long Distance Footpath	A long distance footpath, which begins at Boston, close to the east coast of England, crosses the Midlands, and central and north Wales to reach the Irish sea at Barmouth.
Greenwich Meridian Trail Long Distance Footpath	A long distance coast to coast walk following the line of the Greenwich Meridian from the Meridian Monument at Peacehaven in East Sussex to Tunstall Beach in East Yorkshire
Public bridleways	Multiple definite public bridleways are encompassed by or coincide with the Onshore Scoping Boundary and Intertidal Scoping Boundary.
Public footpaths	Multiple definite public bridleways are encompassed by or coincide with the Onshore Scoping Boundary and Intertidal Scoping Boundary.
Byways Open to All Traffic (BOAT)	A single BOAT coincides with the Onshore Scoping Boundary and Intertidal Scoping Boundary.

7.7.3.18 With respect to the Onshore Converter Stations, the northern search area coincides with several public bridleways and public footpaths but does not intersect any National Trails or NCRs.

7.7.3.19 However, the southern search area coincides with a number of public bridleways and public footpaths in addition to a single BOAT and a small section of NCR 1 and King Charles III England Coast Path Route - Sutton Bridge to Skegness. It is likely that once siting options for the Onshore Converter Stations have been identified, the majority of such receptors could be avoided.

Common Land, Access Land and Public Open Space

7.7.3.20 The land within the Onshore Scoping Boundary and Intertidal Scoping Boundary coincides with several areas of access and common land registered under the Countryside and Rights of Way Act 2000 (CRoW Act 2000), which are as follows:

- Green lane at Authorpe (Common Land Unit (CL)100);
- Sloothby Low Lane (CL1);
- Parish land near the old gravel pit (CL30);
- Allotment gardens (CL50);
- Clay Gardens (CL49);
- Braygate Lane (CL112);
- Land forming the East portion of Ing's Lane (CL87);
- Swan Lane (CL55);
- Hallgate (CL108);
- Abraham's Lane (CL98);
- Lane in the Parish of Frithville (CL127);
- Water-filled pit near Drayton Roundabout (CL22); and
- Andrews Common (CL4).

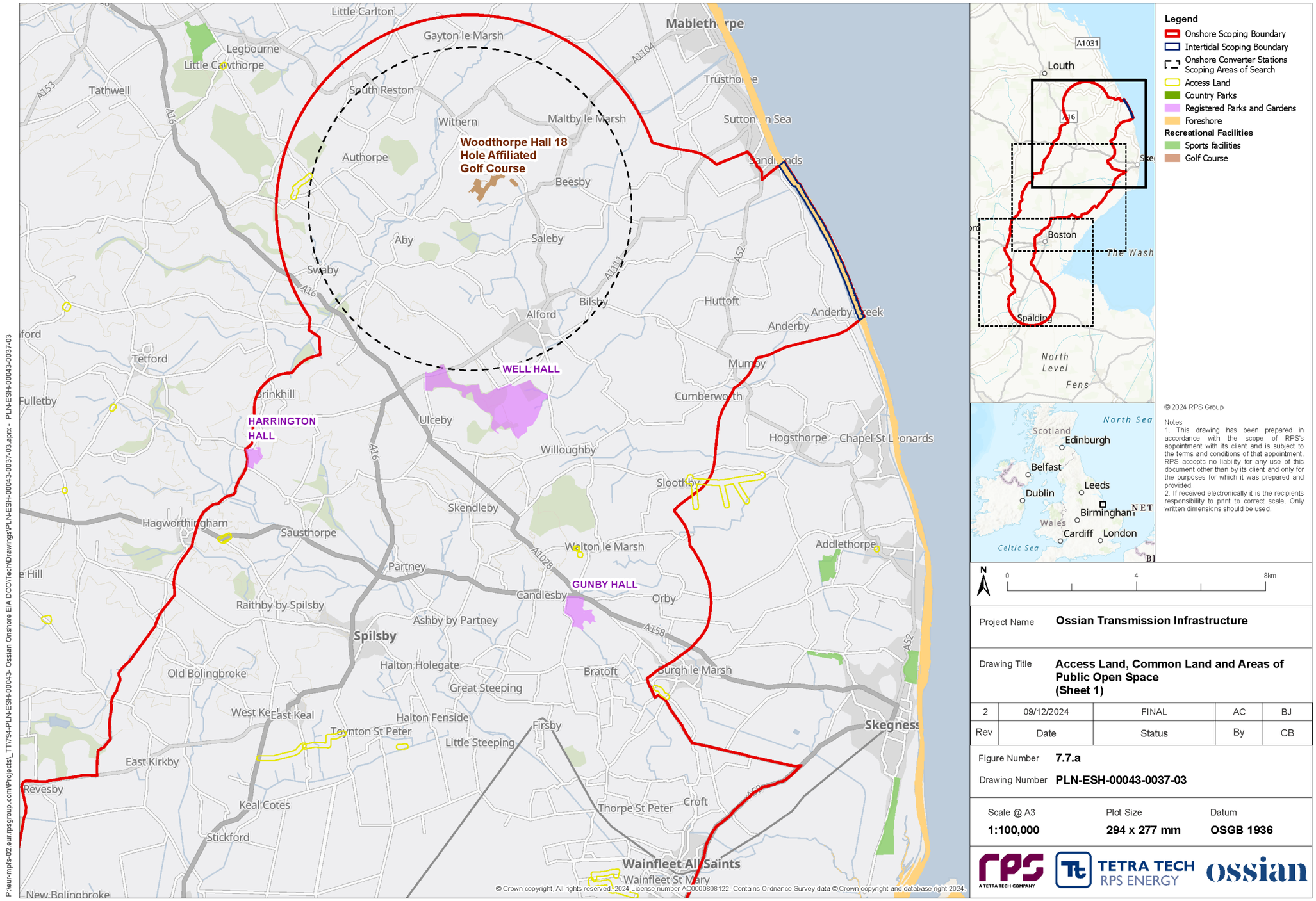
7.7.3.21 There are also multiple areas of public open space that coincide with land within the Onshore Scoping Boundary and Intertidal Scoping Boundary, including allotments or community growing spaces, cemeteries, sports facilities, public parks or gardens, campsites and caravan parks, religious grounds and a public beach (foreshore). Some notable areas of public open space located within the Onshore Scoping Boundary and Intertidal Scoping Boundary include:

- Grade II listed Registered Park and Gardens, including Well Hall (Claxby St Andrew), Harrington Hall (Spilsby) and Gunby Hall (Spilsby, National Trust);
- Witham Way Country Park (Boston); and
- Golf courses, including Woodthorpe Hall 18 Hole Affiliated Golf Course, Boston Golf Club, Boston West Golf Centre, Kirton Holm Golf Club and Spalding Golf Club.

7.7.3.22 With respect to the Onshore Converter Stations, the northern search area coincides with the registered access and common land, Green lane at Authorpe (Lindsey) and several areas of public open space. The southern search area does not coincide with any registered access and common land but does intersect several areas of public open space.

7.7.3.23 A more detailed and comprehensive baseline assessment of recreational resources, including common land, access land, public open space and other recreational resources not already identified above, will be undertaken once the siting for the Onshore Transmission Infrastructure has been refined.

7.7.3.24 The location and geographic extent of registered common land and public open space within the Onshore Scoping Boundary and Intertidal Scoping Boundary is presented in **Figure 7.7.9, Figure 7.7.10** and **Figure 7.7.11**.



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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Access Land, Common Land and Areas of Public Open Space (Sheet 1)**

Rev	Date	Status	By	
2	09/12/2024	FINAL	AC	BJ

Figure Number	**7.7.a**
Drawing Number	**PLN-ESH-00043-0037-03**

Scale @ A3	Plot Size	Datum
1:100,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.7.9: Access Land, Common Land and Areas of Public Open Space (sheet 1)

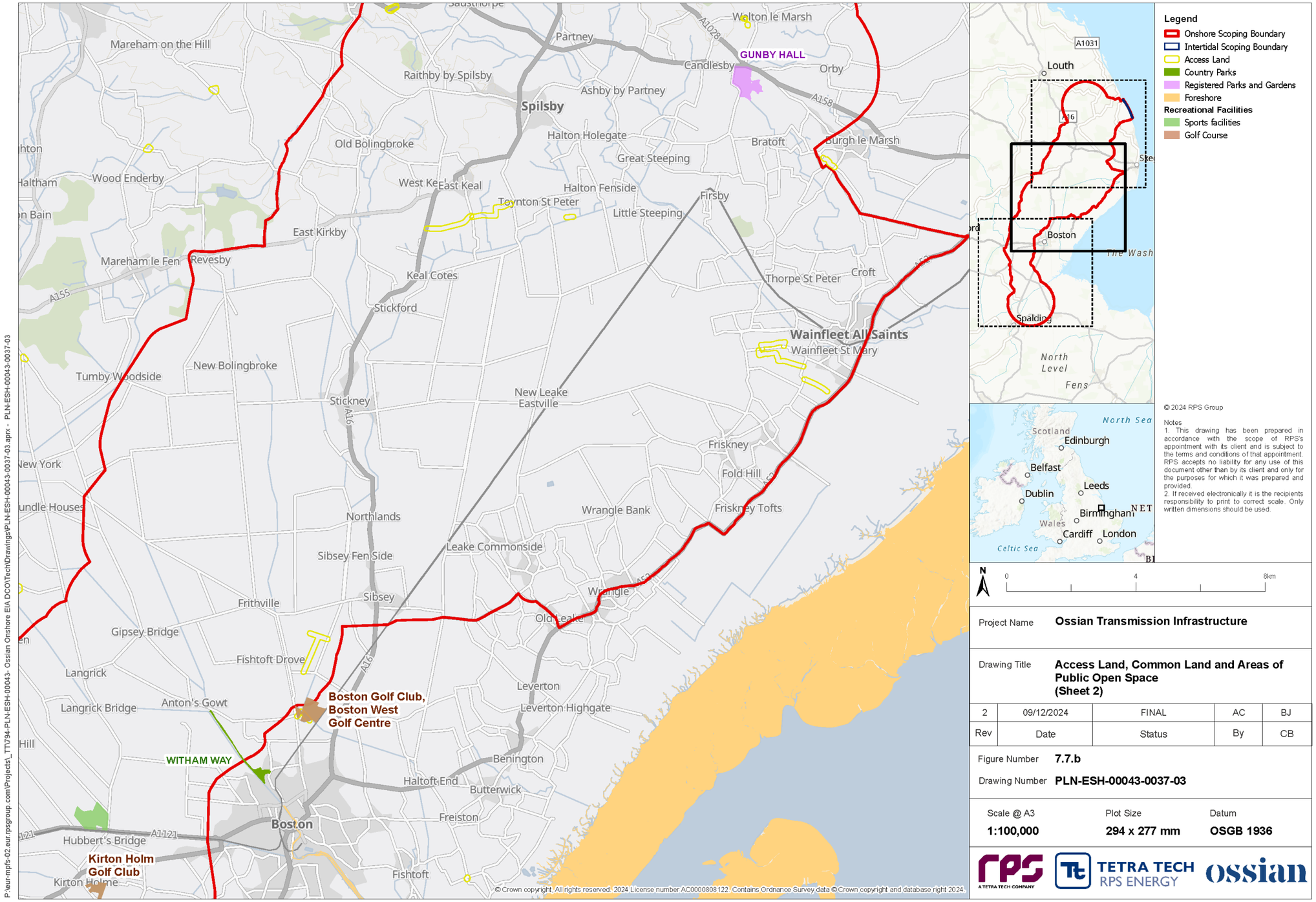
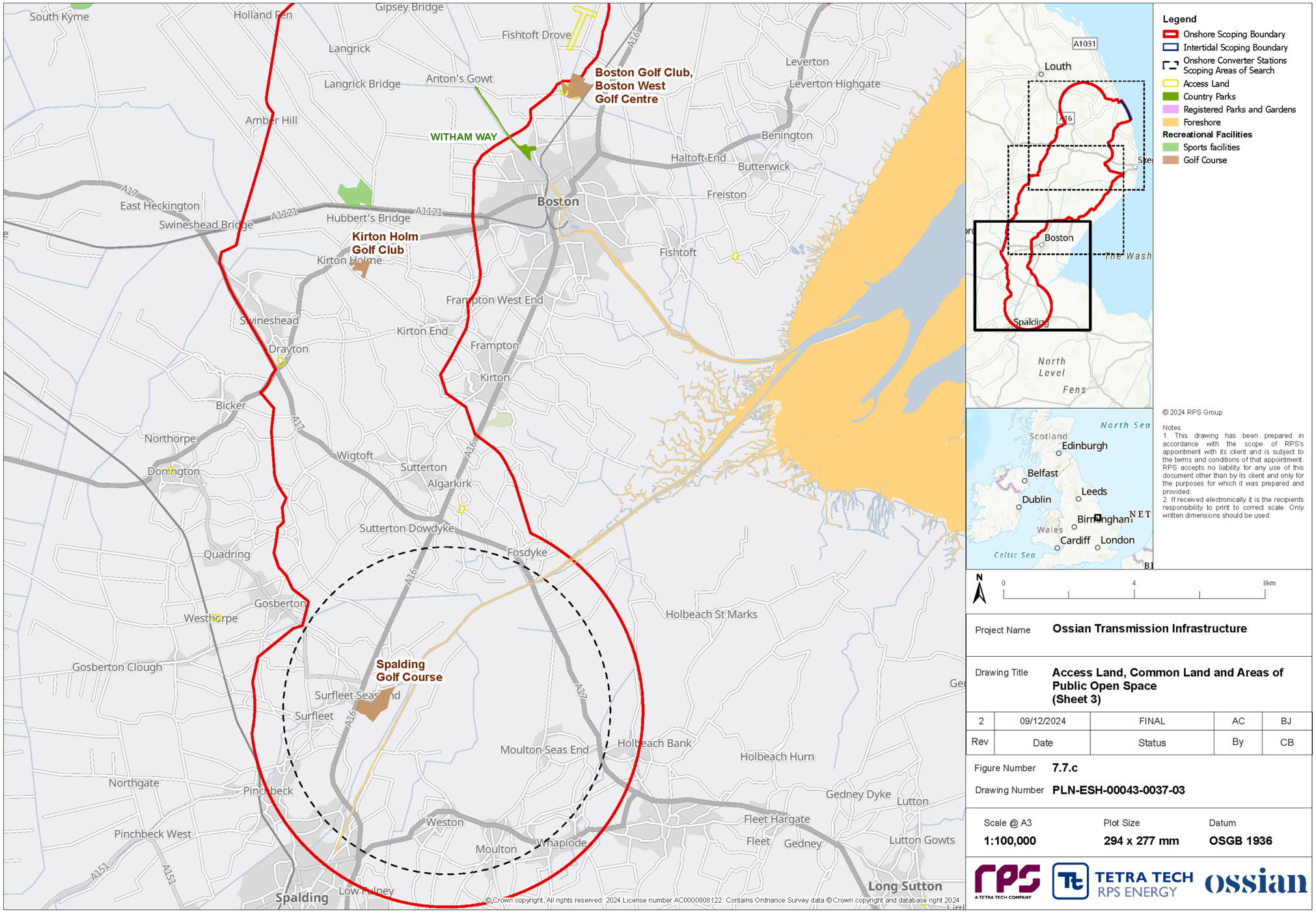


Figure 7.7.10: Access Land, Common Land and Areas of Public Open Space (sheet 2)



Legend

- Onshore Scoping Boundary
- Intertidal Scoping Boundary
- Onshore Converter Stations Scoping Areas of Search
- Access Land
- Country Parks
- Registered Parks and Gardens
- Foreshore

Recreational Facilities

- Sports facilities
- Golf Course

Notes
1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

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Project Name	**Ossian Transmission Infrastructure**
Drawing Title	**Access Land, Common Land and Areas of Public Open Space (Sheet 3)**

Rev	Date	Status	By	
2	09/12/2024	FINAL	AC	BJ

Figure Number	**7.7.c**
Drawing Number	**PLN-ESH-00043-0037-03**

Scale @ A3	Plot Size	Datum
1:100,000	**294 x 277 mm**	**OSGB 1936**

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Figure 7.7.11: Access Land, Common Land and Areas of Public Open Space (sheet 3)

Future Baseline Conditions

7.7.3.25 With respect to land use and recreation, no significant changes to the baseline conditions are anticipated. While it is possible that new developments, changes in land use and recreational activities or consequences of climate change may occur in the future, predicting the exact nature or location of these changes is challenging. However, future developments and potential impacts of climate change, where known, will be considered in the assessment of cumulative effects and reported in the land use and recreation chapter of the ES.

7.7.3.26 No changes in statutory legislation are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.7.4 Proposed Data Sources

Desk Studies

7.7.4.1 A desk-based review of existing studies and datasets will be undertaken to inform the baseline assessment for land use and recreation in the ES.

7.7.4.2 A summary of the desk study sources to be used for the assessment of land use and recreation is provided in **Table 7.7.4** below. In addition, where relevant and available, data from other projects in the area (such as Eastern Green Link 3 and 4, Outer Dowsing and Grimsby to Walpole) will be considered.

Table 7.7.4: Desk Study Sources to be Used for the Assessment of Land Use and Recreation

Title	Source	Summary
ALC Grades - Post-1988 Survey online mapping data	Natural England	Provides the ALC grades of agricultural land according to the Post-1988 Surveys within the study area.
Provisional ALC online mapping data	Natural England	Provides the ALC grades of agricultural land according to the Provisional ALC mapping within the study area.
Meteorological Office Climatological Data for ALC. Grid point datasets of climatic variables, at 5 km intervals for England and Wales.	The Meteorological Office Soil Survey and Land Research Centre	Provides climatological data relevant to the determination agricultural land quality within the study area.
Definitive PRoW mapping produced by Lincolnshire County Council	Lincolnshire County Council	Provides the location and geographic extent of PRoW, including public footpaths, bridleways, restricted byways and BOATs within the study area.
BGS Geology of Britain Viewer	British Geological Society	Provides information regarding bedrock and superficial geology and soil associations and soil types within the study area.
CRoW Act 2000 – Access Layer - land mapped as Access Land under the CRoW Act 2000	Natural England	Provides the location and geographic extent of access land registered under the CRoW Act 2000 within the study area.
CRoW Act 2000 – Section 4 Conclusive Open Country - land mapped as Conclusive Open Country under the CRoW Act 2000.	Natural England	Provides the location and geographic extent of open country land registered under the CRoW Act 2000 within the study area.
CRoW Act 2000 – Common Land Layer - land mapped as registered common land under the CRoW Act 2000.	Natural England	Provides the location and geographic extent of common land registered under the CRoW Act 2000 within the study area.
Ordnance Survey 1:25,000 mapping, including Open Green Space and Golf Courses.	Ordnance Survey	Provides the location and geographic extent of public open space within the study area.
National Trails mapping data	Natural England	Provides the location and geographic extent of existing National Trails within the study area.
King Charles III England Coast Path Route	Natural England	Provides the location and geographic extent of approved stretches of the new national trail, King Charles III England Coast Path within the study area.
National Cycle Network Map	Sustrans	Provides the location and geographic extent of NCRs within the study area.
National Soil Map of England and Wales - NATMAP	Soil Survey of England and Wales (SSEW)	Provides the distribution of soil types at a scale of 1:250,000 within the study area.
Soils of England and Wales Sheet 4 Eastern England 1:250,000	SSEW	Provides the distribution of soil associations at a scale of 1:250,000 within the study area.

Title	Source	Summary
Department for Environment, Food and Rural Affairs (Defra) agriculture (2021) Local Authority level breakdown of cropping and livestock areas.	Defra	Provides detailed annual statistics on the structure of the agricultural industry, including land and crop areas, livestock populations and agricultural workforce estimates.

Site-specific Surveys

7.7.4.3 Site-specific surveys will be undertaken to inform the baseline assessment for land use and recreation. A summary of the site-specific surveys to be used for the assessment of land use and recreation is provided in **Table 7.7.5** below.

Table 7.7.5: Site-specific surveys to be used for the assessment of land use and recreation

Survey type	Summary
Soil and ALC surveys	To verify the data provided from desk top sources as detailed above, surveys of soils and ALC grades will be undertaken in accordance with Natural England Guidance Note TIN 049 using a Dutch hand auger to examine soil profiles up to a depth of 1.2 m at approximately 100 m intervals within the areas of survey. The soil surveys will be undertaken in accordance with ALC of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). The location of soil surveys will include the areas of permanent infrastructure and any potential areas of peaty soils and may be supplemented by examination of any available data, such as soil pits. The samples collected during the soil surveys will be subject to textural analysis to determine the properties of soil and ALC grading. In addition to informing the land use and recreation assessment, the soil surveys will be used to inform relevant sections of the Outline Soil Management Plan, which will be submitted alongside the ES.
Walkover surveys of PRoW and other promoted routes	To determine the nature of usage and identify issues which may not be apparent based on desk based data alone, walkover surveys will be undertaken at various locations along the affected PRoW network and other promoted routes. In addition to informing the land use and recreation assessment, the walkover surveys will also be used to inform relevant sections of the Outline PRoW Management Plan, which will be submitted alongside the ES.

7.7.5 Mitigation Measures

7.7.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- The commitment to utilise trenchless techniques for the installation of the Landfall and Onshore Export Cables, where practicable, to avoid impacts to land use and recreation receptors. For example, the utilisation of trenchless techniques at the Landfall to avoid potential impacts on access to the public beach and proposed National Trail, King Charles III England Coast Path Route - Skegness to Mablethorpe.
- CoCP – which will include measures to reduce disturbance of agricultural land and subsequent impacts on the agricultural operations during construction of the Landfall and Onshore Transmission Infrastructure. An Outline CoCP will be provided as part of the application for development consent.
- Site selection and design processes will seek to avoid areas of peat where practicable.
- Soil Management Plan – which will contain measures to protect and maintain the quality of soils, including areas of peaty soils, during construction of the Onshore Transmission Infrastructure, including guidelines for the handling, storage and reinstatement of soils. This will ensure that land affected temporarily during construction can be restored to its former use. An Outline Soil Management Plan will be provided as part of the application for development consent.
- PRoW Management Plan – which will include measures to reduce disruption to the affected PRoW network during construction. For example, these measures may include requirements for managed crossings, temporary or permanent diversions and measures to ensure the safety of PRoW users during the construction phase, such as appropriate signage, installation of fencing and utilisation of banksmen. An Outline PRoW Management Plan will be provided as part of the application for development consent.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.7.5.2 The mitigation requirements for the land use and recreation will be discussed with relevant local authorities, where required, as part of the ETGs prior to submission of the application for development consent.

7.7.6 Proposed Scope of the Assessment

7.7.6.1 Potential impacts that are proposed to be scoped in to the assessment for land use and recreation are set out in **Table 7.7.6**.

7.7.7 Impacts Proposed to be Scoped Out

7.7.7.1 Impacts that are proposed to be scoped out of the assessment for land use and recreation and the justification are set out in **Table 7.7.7**.

Table 7.7.6: Potential Impacts Proposed to be Scoped In for Land Use and Recreation

Impact	C	O	D	Description	Proposed Approach to Assessment
Temporary loss of agricultural land, including BMV land. Temporary impacts on peat resources (where present).	✓	×	✓	Temporary impacts would occur during construction and decommissioning of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access (including temporary compounds for the Onshore Converter Stations).	The quality of agricultural land, including BMV land, within the study area will be established via a combination of desktop study and soil surveys undertaken in accordance with ALC guidelines (MAFF, 1988). The temporary and permanent impacts (including identification of the amount of land to be lost for each ALC classification) associated with construction of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology and significance criteria set out in DMRB LA 109 Geology and Soils (Highways England *et al.,* 2019).
Permanent loss of agricultural land, including BMV land. Permanent loss of peat resources (if present).	✓	×	✓	Permanent impacts would occur during construction of the Onshore Converter Stations, including associated permanent access, landscaping and drainage.	
Temporary disruption to the operation of farm holdings.	✓	×	✓	Temporary impacts would occur during construction and decommissioning of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access (including temporary compounds for the Onshore Converter Stations).	The farm holdings within the study area will be established via a combination of desk study and discussions with farmers and/or representatives (where required). The temporary and permanent impacts associated with construction of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology and significance criteria set out in DMRB LA 109 Geology and Soils (Highways England *et al*., 2019).
Permanent disruption to the operation of farm holdings.	✓	×	✓	Permanent impacts would occur during construction of the Onshore Converter Stations, including associated permanent access, landscaping and drainage.	
Temporary reduction in access to PRoW and other promoted routes.	✓	×	✓	Temporary impacts could occur during construction and decommissioning of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access (including temporary compounds for the Onshore Converter Stations).	The PRoW and other promoted routes (e.g. NCRs, National Trails etc) within the study area will be established via a combination of desk study and site surveys (if required), to determine the nature and usage of affected PRoW. The temporary and permanent impacts associated with construction of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology and significance criteria set out in DMRB LA 112 Population and Human Health (Highways England *et al*., 2020c).
Permanent reduction in access to PRoW and other promoted routes.	✓	×	✓	Permanent impacts could occur during construction of the Onshore Converter Stations, including associated permanent access, landscaping and drainage.	
Temporary reduction in access to registered common land and public open space.	✓	×	✓	Temporary impacts could occur during construction and decommissioning of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access (including temporary compounds for the Onshore Converter Stations).	The registered common land and public open space within the study area will be established via a combination of desktop study and site surveys (if required), to determine the nature and usage of affected areas. The temporary and permanent impacts associated with construction of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology and significance criteria set out in DMRB LA 112 Population and Human Health (Highways England *et al*., 2020c).
Permanent reduction in access to registered common land and public open space.	✓	×	✓	Permanent impacts could occur during construction of the Onshore Converter Stations, including associated permanent access landscaping and drainage.	
Temporary reduction in access to other recreational resources	✓	×	✓	Temporary impacts could occur during construction and decommissioning of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access (including temporary compounds for the Onshore Converter Stations).	The other recreational resources within the study area will be established via a combination of desktop study and site surveys (if required), to determine the nature and usage of affected resources. The temporary and permanent impacts associated with

Impact	C	O	D	Description	Proposed Approach to Assessment
(e.g. golf courses, sport facilities etc).					construction of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology and significance criteria set out in DMRB LA 112 Population and Human Health (Highways England *et al.,* 2020c).
Permanent reduction in access to other recreational resources (e.g. golf courses, sport facilities etc).	✓	×	✓	Permanent impacts could occur during construction of the Onshore Converter Stations, including associated permanent access landscaping and drainage.	

Table 7.7.7: Impacts Proposed to be Scoped Out of the Assessment for Land Use and Recreation

Impact	Justification
Operation and Maintenance	
Temporary and permanent loss of agricultural land, including BMV land during operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	The Onshore Converter Stations and Onshore Export Cables would be monitored and operated remotely during the operational lifetime of the Onshore Transmission Infrastructure. As such, potential impacts during operation of the Landfall and Onshore Transmission Infrastructure would be limited to repair and maintenance activities, which would be short term, infrequent in nature and small in scale. Any land affected during repair and maintenance activities would be very limited in scale and reinstated to its previous (or an otherwise agreed upon) condition. Any permanent impacts arising from construction of the Landfall and Onshore Transmission Infrastructure (such as permanent loss of land for the Onshore Converter Stations) will have been considered as part of the assessment for construction. On this basis, no temporary and permanent impacts during operation and maintenance phase are to occur that could result in likely significant effects. Impacts and effects during the operation and maintenance phase are therefore proposed to be scoped out of the assessment for land use and recreation.
Temporary and permanent disruption to the operation of farm holdings during operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	
Temporary and permanent reduction in access to PRoW and other promoted routes during operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	
Temporary and permanent reduction in access to registered common land and public open space during operation and maintenance.	
Temporary and permanent reduction in access to other recreational resources (e.g. golf courses, sport facilities etc) during operation and maintenance.	

7.7.8 Proposed Assessment Methodology

7.7.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.7.6** is described below.

Legislation and Policy

7.7.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.7.8.3 The assessment of land use and recreation will be undertaken in accordance with the following guidance documents:

- Design Manual for Roads and Bridges (DMRB) LA 109 Geology and Soils (Highways England *et al*, 2019);
- DMRB LA 112 Population and Human Health (Highways England *et al*, 2020c); and
- A New Perspective on Land and Soil in Environmental Impact Assessment, IEMA (2022).

7.7.8.4 The above documents provide the sensitivity and magnitude criteria to be applied when determining the overall likely significance of effects of the Onshore Transmission Infrastructure on identified land use and recreation receptors.

7.7.8.5 With respects to the proposed soil surveys, these will be undertaken in accordance with the following guidance documents:

- Agricultural Land Classification (ALC) guidelines (MAFF, 1988); and
- Agricultural Land Classification: protecting the best and most versatile agricultural land - Natural England Technical Information Note TIN049 (2012).

7.7.8.6 The measures included in the Outline Soil Management Plan to be submitted will align with the following guidance documents produced by the Department for Environment, Food and Rural Affairs (Defra), Institute of Quarrying (IQ) and British Society of Soil Science (BSSS), where appropriate:

- Construction Code of Practice for Sustainable Use of Soils on Construction Sites (Defra, 2009);
- Good Practice Guide for Handling Soils in Mineral Workings (IQ, 2021); and
- Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction (BSSS, 2022).

7.7.8.7 The land use and recreation assessment will also consider additional guidance documents identified by relevant local authorities as part of the non-statutory and statutory consultation process for the Onshore Transmission Infrastructure.

Assessment of Effects

7.7.8.8 Potential impacts of the Landfall and Onshore Transmission Infrastructure on land use and recreation will be assessed in accordance with the method set out in **section 5.5** of this EIA Scoping Report in addition to the following guidance documents, which are specific to the assessment of land use and recreation:

- Design Manual for Roads and Bridges (DMRB) LA 109 Geology and Soils (Highways England *et a*l, 2019); and
- DMRB LA 112 Population and Human Health (Highways England *et al,* 2020c).

7.7.8.9 Where significant adverse effects of the Onshore Transmission Infrastructure are likely to occur to land use and recreation receptors, suitable mitigation measures will be identified.

7.7.8.10 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for land use and recreation. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

7.7.8.11 Ongoing engagement will be undertaken to ensure that stakeholders are aware of emerging survey results and the likely mitigation requirements. The approach to mitigation will be discussed with the ETGs, with a view to agreeing the proposed mitigation and Commitments Register with stakeholders ahead of the applications, where practicable.

Receptor Sensitivity

7.7.8.12 The criteria to be used for defining the sensitivity of land use and recreation receptors are outlined in **Table 7.7.8.** These are based on the criteria defined in Highways England *et a*l. (2019) and Highways England *et al.* (2020c).

Table 7.7.8: Sensitivity Criteria for the Land Use and Recreation Assessment

Sensitivity	Sub-topic	Definition
Very High	Agricultural land use	**Soils**: • ALC Grade 1 (excellent quality) agricultural land; and • ALC Grade 2 (very good quality) agricultural land.
		Agricultural land holdings: • land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and access between land and key agricultural infrastructure is required on a frequent basis (daily).
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • National trails and other linear routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient route. Little/no potential for substitution. • Routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could

Sensitivity	Sub-topic	Definition
		be disproportionately affected by small changes in the baseline due to potentially different needs. • Rights of way crossing roads at grade with >16,000 vehicles per day.
High	Agricultural land use	**Soils**: • ALC Grade 3a (good quality) agricultural land.
		Agricultural land holdings: • land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and • access between land and key agricultural infrastructure is required on a frequent basis (weekly).
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • regional trails and routes likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use; • limited potential for substitution; and • rights of way crossing roads at grade with >8,000 – 16,000 vehicles per day.
Medium	Agricultural land use	**Soils**: • ALC Grade 3b (moderate quality) agricultural land.
		Agricultural land holdings: • land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and • access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly).
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • PRoW and other routes close to communities which are used for recreational purposes, but for which alternative routes can be taken; • these routes are likely to link to a wider network of routes to provide Options for longer recreational journeys; and • rights of way crossing roads at grade with >4,000 – 8,000 vehicles per day.
Low	Agricultural land use	**Soils**: • ALC Grade 4 (poor quality) agricultural land; and • ALC Grade 5 (very poor quality) agricultural land.
		Agricultural land holdings:

Sensitivity	Sub-topic	Definition
		• land in which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and • access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less).
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • routes which have fallen into disuse through past severance, or which are scarcely used because they do not currently offer a meaningful route for utility/recreational purposes; and • rights of way crossing roads at grade with <4,000 vehicles per day.
Negligible	Agricultural land use	**Soils**: • previously developed land with little potential to return to agriculture.
		Agricultural land holdings: • areas of land which are infrequently used on a non-commercial basis.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • N/A.

Impact Magnitude

7.7.8.13 The criteria to be used for defining the magnitude of impacts on land use and recreation receptors are outlined in **Table 7.7.9**.

Table 7.7.9: Impact Magnitude Criteria for the Land Use and Recreation Assessment

Magnitude of impact	Sub-topic	Definition
High	Agricultural land use	**Soils**: • physical removal or permanent sealing of more than 20 ha of agricultural land.
		Agricultural land holdings: • loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features, or elements (e.g. direct acquisition and demolition of buildings and direct development of land to accommodate highway assets); and

Magnitude of impact	Sub-topic	Definition
		• introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • >500 m increase (adverse) or decrease (beneficial) in journey length.
Medium	Agricultural land use	**Soils**: • physical removal or permanent sealing on 1 to 20 ha of agricultural land; and • permanent loss/reduction of one or more soil function(s) and restriction to current or approved future use.
		Agricultural land holdings: • partial loss of/damage to key characteristics, features, or elements (e.g. partial removal or substantial amendment to access or acquisition of land compromising the viability of agricultural holdings); and • introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • >250 m - 500 m increase (adverse) or decrease (beneficial) in journey length.
Low	Agricultural land use	**Soils**: • temporary loss/reduction of one or more soil function(s) and restriction to current or approved future use.
		Agricultural land holdings: • a discernible change in attributes, quality or vulnerability, or alteration to one (maybe more) key characteristics, features, or elements (e.g. amendment to access or acquisition of land resulting in changes to the operating conditions that do not compromise overall viability of agricultural holdings); and • introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • >50 m - 250 m increase (adverse) or decrease (beneficial) in journey length.
Negligible	Agricultural land use	**Soils**: • no discernible loss/reduction in soil function(s) that restrict current or approved future use.
		Agricultural land holdings: • very minor loss or detrimental alteration to one or more characteristics, features, or elements (e.g. acquisition of non-operational land or buildings not directly affecting the viability of agricultural holdings); and • very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • <50 m increase (adverse) or decrease (beneficial) in journey length.
No change	Agricultural land use	**Soils**: • no loss/reduction of soil function(s) that restrict current or approved future use.
		Agricultural land holdings: • no loss or alteration of characteristics, features, or elements or accessibility; no observable impact in either direction.
	PRoW and other promoted routes	**Walkers, cyclists, and equestrians**: • no loss or alteration of characteristics, features, elements, or accessibility; no observable impact in either direction.

7.7.8.14 The duration of the impacts will be described as set out in **section 5.5** of this EIA Scoping Report.

7.7.8.15 For the purposes of the assessment, it will be considered that construction of the Landfall and Onshore Export Cables, temporary construction compounds and temporary access would result in temporary impacts (short, medium or long term) on land use and recreation receptors (see **section 5.5** of this EIA Scoping Report).

7.7.8.16 Conversely, construction of the Onshore Converter Stations, including associated permanent access, landscaping and drainage would result in permanent impacts on land use and recreation, occurring throughout the operational lifetime of the Onshore Transmission Infrastructure.

Significance of Effect

7.7.8.17 The significance of the effect upon land use and recreation will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.7.8.18 Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement. For the purpose of this assessment, any effect with a significance level of moderate or above will be considered to be a likely significant effect in terms of the EIA Regulations. Where the magnitude of impact is 'no change', no effect would arise.

7.7.8.19 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.7.8.20 The CEA for land use and recreation will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The land use and recreation chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.7.8.21 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on land use and recreation are screened out from the EIA process.

Relevant Consultation

7.7.8.22 The Applicant has undertaken introductory consultation with statutory consultees, including Lincolnshire County Council and Natural England, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken as required throughout the PEIR and ES phases.

7.7.9 Next Steps

7.7.9.1 The following are proposed as next steps in relation to land use and recreation.

- After submitting the EIA Scoping Report, the study area will be further refined in response to identified design and/or environmental constraints as part of the iterative design process for the Onshore Transmission Infrastructure.
- Upon receiving the EIA Scoping Opinion from the Planning Inspectorate, feedback from both statutory and non-statutory consultees will be used to guide the assessment of land use and recreation. This assessment will be detailed in the PEIR.
- Further work will be conducted to establish the baseline environment within the refined study area for the land use and recreation assessment to be reported in the PEIR. This work will include:
  - desk-based analysis of data sources (see **Table 7.7.4**);
  - soil and ALC surveys to determine the quality of agricultural land (see **Table 7.7.5**); and
  - walkover surveys to assess the nature and usage of recreational resources, such as PRoW (see **Table 7.7.5**).
- Additionally, further non-statutory consultation will be carried out via ETG and other technical meetings. These meetings will serve as a platform to discuss key issues with relevant local authorities, including the approach to assessment and mitigation proposals.
- Prior to publication of the PEIR, it is anticipated that a meeting will be held with PRoW officers from Lincolnshire County Council to discuss and agree outline management measures to be included in the Outline PRoW Management Plan, including requirements for managed crossings and temporary or permanent diversions (where appropriate).

7.7.9.2 Once the above steps have been completed, the land use and recreation assessment will be submitted alongside supporting appendices and relevant outline management plans for statutory consultation as part of the PEIR for the Onshore Transmission Infrastructure.

7.8. Traffic and Transport

7.8.1 Introduction

7.8.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for traffic and transport. This section considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Ossian Transmission Infrastructure landward of MHWS on traffic and transport receptors, and any resulting likely significant effects. Impacts on noise and vibration are addressed in **section 7.9** and air quality is addressed in **section 7.10** of this EIA Scoping Report. **Section 7.7** of this EIA Scoping Report addresses impacts on PRoW. Impacts on shipping and navigation are addressed in **section 6.8** and infrastructure and other sea users in **section 6.10** of this EIA Scoping Report.

7.8.1.2 A separate Transport Assessment will be also prepared to support the EIA process. The Transport Assessment and the assessment of likely significant effects for traffic and transport under the EIA will utilise the same baseline data, however, the Transport Assessment will be prepared in accordance with its own relevant guidance and best practice. The Transport Assessment will focus on the operational capacity of the highway network and the impact upon the operation and performance of key highway links and junctions.

7.8.2 Proposed Study Area for the Assessment

7.8.2.1 The initial study area for the assessment of traffic and transport comprises the highway network, landward of MHWS, expected to be used by construction vehicles for the Ossian Transmission Infrastructure landward of MHWS (i.e. the Onshore Transmission Infrastructure and those parts of the Landfall located above MHWS).

7.8.2.2 The initial study area covers the routes up until construction vehicles disperse to levels that would have no significant effect on traffic flows or where they make up only a small portion of the existing traffic, such that effects could be not significant. This initial study area will be refined to provide the study area for the assessment once the location of the Landfall and Onshore Transmission Infrastructure has been refined.

7.8.2.3 Agreement will be sought with Lincolnshire County Council and National Highways, as the highway authorities, regarding any additional parts of the highway network that may need to be considered in the traffic and transport assessment.

7.8.2.4 The study area will be reviewed and modified, if necessary, in response to any refinements that may be made to the design of the Ossian Transmission Infrastructure and/or any additional environmental and/or design constraints identified as part of the EIA process.

7.8.2.5 The location and geographic extent of the initial traffic and transport study area is presented in **Figure 7.8.1**.

7.8.3 Baseline Environment

7.8.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary based on publicly available information. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **Table 7.8.1.**

7.8.3.2 An outline of the baseline environment for traffic and transport based upon an initial review of receptors within the Onshore Scoping Boundary is provided below.

Highway Network

7.8.3.3 There are no parts of the Strategic Road Network located within the Onshore Scoping Boundary. However, there are several A classification roads. Of these, the following A classification roads are key distributor roads which coincide with the initial traffic and transport study area.

- The A16, which routes broadly north to south between Grimsby, Louth, Boston and beyond.
- The A158, which routes broadly west to east between Lincoln, Horncastle and Skegness.
- The A52, which routes broadly south-west to north-east between Grantham, Boston, Skegness and Mablethorpe.
- The A17 which routes broadly north-west between Sleaford, Boston and Kings Lynn.

7.8.3.4 In addition, there are a number of other A classification roads that act as connector roads, and which coincide with the area within the Onshore Scoping Boundary as follows: A1031; A1104; A157; A1111; A153; A1028; A155; A1121; A152; A151; and A1101.

7.8.3.5 The network of A classification roads within the Onshore Scoping Boundary and the initial traffic and transport study area is presented in **Figure 7.8.1.**

Public Transport

7.8.3.6 There is one railway line within the Onshore Scoping Boundary. This is the Poacher Line, which routes broadly south-west to north-east between Grantham and Skegness.

Public Rights of Way

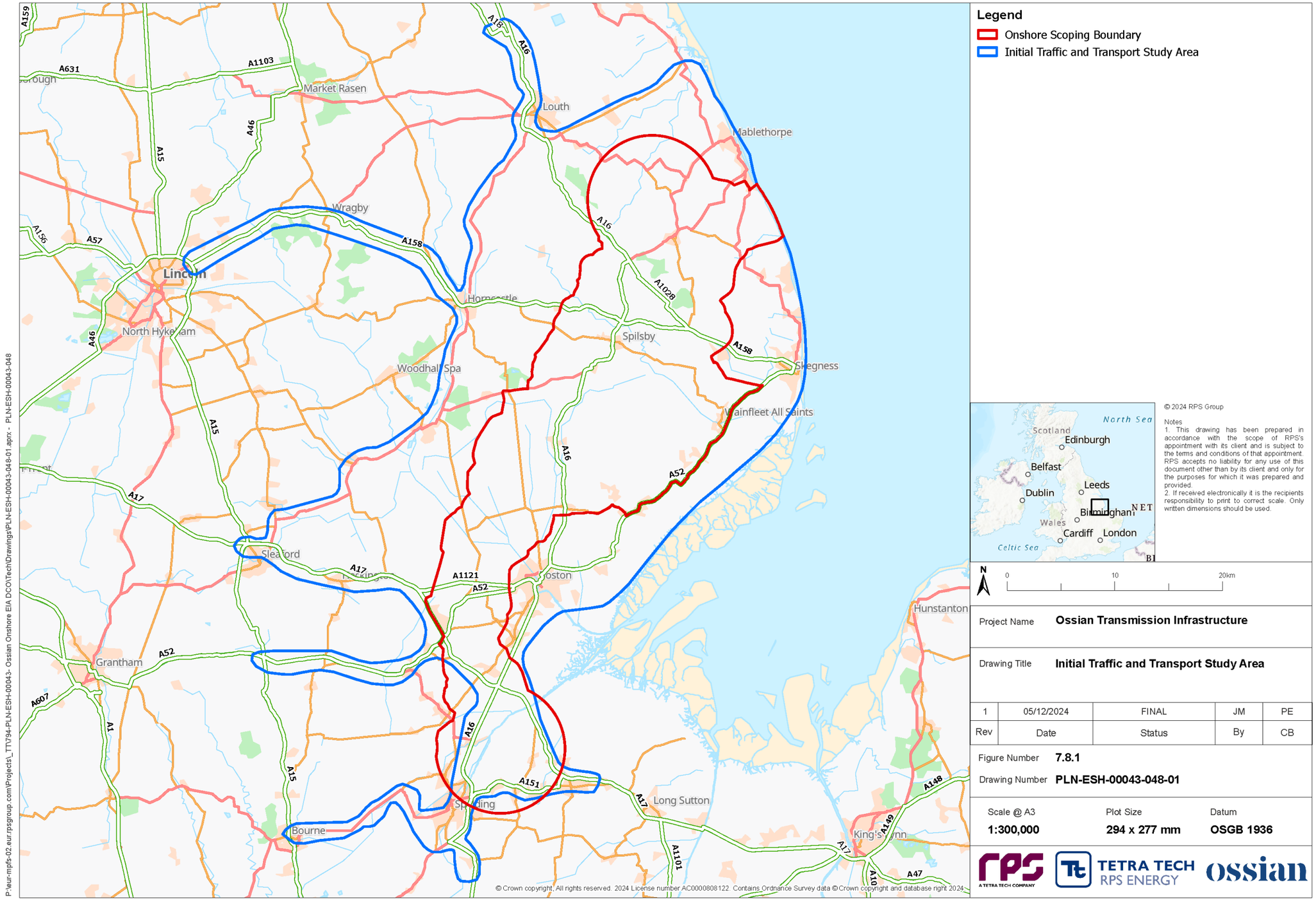
7.8.3.7 There is one National Cycle Network route (NCR1) that intersects with the Onshore Scoping Boundary, which routes broadly north to south through Boston.

7.8.3.8 There are several PRoW located within and surrounding the Onshore Scoping Boundary, as set out in **section 7.7** of this EIA Scoping Report.

7.8.3.9 The potential impacts of the Landfall and Onshore Transmission Infrastructure on PRoW will be considered separately in the assessment of land use and recreation. The scope of the assessment for land use and recreation is provided in **section 7.7** of this EIA Scoping Report.

Urban Areas

7.8.3.10 There are several built up and urban areas within and adjacent to the Onshore Scoping Boundary. Within each of these urban areas, there are a range of sensitive receptors, all of which will be considered as part of the baseline environment for traffic and transport.



P:\eur-mpfs-02.eur.rpsgroup.com\Projects_TT\794-PLN-ESH-00043- Ossian Onshore EIA DCO\Tech\Drawings\PLN-ESH-00043-048-01.aprx - PLN-ESH-00043-048

Figure 7.8.1: Initial Traffic and Transport Study Area

Future Baseline Conditions

7.8.3.11 The EIA process will consider the existing baseline conditions within the traffic and transport study area and the future baseline conditions (as far as reasonably practicable) using traffic growth rates and considerations to any committed developments or committed transport interventions, to be agreed with Lincolnshire County Council and National Highways, as the highway authorities. These will include committed developments and interventions that have already been assessed by Lincolnshire County Council and National Highways as part of the planning process, have received planning consent and thus form part of the predicted future year baseline scenario in traffic and transport terms.

7.8.4 Proposed Data Sources

Desk Studies

7.8.4.1 The data sources to be used to inform the baseline assessment will include published material, which is publicly available and material available to purchase from the relevant highway authorities. These data sources will be supplemented by site visits to be undertaken by competent experts and the analysis of newly commissioned (by the Applicant) traffic survey data.

7.8.4.2 An initial desk-based review has identified a number of existing data sources that provide baseline data coverage. These data sources are summarised in **Table 7.8.1**.

Table 7.8.1: Baseline Data Sources for Traffic and Transport

Source	Summary
Local Highway Authority and National Highways	Existing traffic flow information from the Local Highway Authority (and National Highways where relevant) to identify the current operation of the road network. This will include results from automatic traffic counts and manual classified counts.
www.crashmap.co.uk and the Local Highway Authority	Personal Injury Accident data for road traffic collisions will also be obtained from Crashmap and the Local Highway Authority.
Bus and rail service operators	Records of existing bus and rail services will be obtained from a desktop analysis of route maps and timetables published by the relevant service operators.
Lincolnshire County Council and National Highways	Records of existing PRoWs and cycle routes will be obtained from the Local Highway Authority.
Lincolnshire County Council and National Highways	Records of the adopted highway boundary along the highway network will be obtained from the Local Highway Authority.
Sustrans Interactive Mapping System Great Britain: National Cycle Network Map	Details of National Cycle Network routes located within each Local Authority area within the initial traffic and transport study area.

7.8.4.3 These baseline data sources will be discussed with the Lincolnshire County Council and National Highways to enable a single future year baseline scenario to be created on an agreed basis.

7.8.4.4 The baseline data sources identified in this EIA Scoping Report will remain under review and may be updated in response to feedback from relevant authorities and interested parties during the EIA process, or in response to new sources of information becoming available.

Site-specific Surveys

7.8.4.5 Site visits and traffic surveys will be used to inform the baseline assessment for traffic and transport. The nature and type of traffic surveys will be determined once the design for the Landfall and Onshore Transmission Infrastructure and subsequent study area has been refined. However, traffic surveys are likely to comprise traffic counts (either automated or manual) and queue length surveys (where appropriate).

7.8.5 Mitigation Measures

7.8.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Utilise trenchless techniques for the installation of the Landfall and Onshore Export Cables, where practicable, to avoid impacts to traffic and transport receptors (e.g. roads, rail, PRoW). For example, the utilisation of trenchless techniques to avoid potential impacts on the Poacher Line.
- Construction Traffic Management Plan (CTMP) - which will include measures to manage the movement of construction vehicles entering or exiting construction sites and utilising the highway network as to avoid or reduce potential impacts on sensitive traffic and transport receptors. An Outline CTMP will be provided as part of the application for development consent.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.8.5.2 The mitigation requirements for traffic and transport will be discussed with relevant local authorities, where required, as part of the relevant ETG prior to submission of the application.

7.8.6 Proposed Scope of the Assessment

7.8.6.1 Potential impacts that are proposed to be scoped in to the assessment for traffic and transport are set out in **Table 7.8.2**.

7.8.7 Impacts Proposed to be Scoped Out

7.8.7.1 Impacts that are proposed to be scoped out of the assessment for traffic and transport and the justification are set out in **Table 7.8.3**.

Table 7.8.2: Potential Impacts Proposed to be Scoped in for Traffic and Transport

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact upon driver (including public transport) and non-motorised user delay and fear and intimidation (non-motorised user amenity) for users of the highway network resulting from increases in traffic flows as a result of construction traffic or works due to construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Additional vehicle movements or works required to facilitate construction of the Landfall and Onshore Transmission Infrastructure may impact the effective operation of the road network and other transport receptors and cause driver (including public transport) and non-motorised user delay/impact on fear and intimidation (non-motorised user amenity).	• The type, number, frequency and assignment of additional vehicle movements on the highway network generated during construction will be predicted using first principles from an understanding of the construction process, likely material quantities and construction programme. The location of any crossings or cable trenching within any local roads will be identified. • Where predicted traffic flows within the initial traffic and transport study area exceed Rule 1 and Rule 2 (see **paragraph 7.8.8.9**), or where any cable trenching would be within a local road, the impact of these upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity) and severance for users of the highway network will be assessed in accordance with the Environmental Assessment of Traffic and Movement (IEMA, 2023). • The impact of additional vehicle movements upon the effective operation and performance of key highway links and junctions of the highway network (in terms of highway capacity) will be assessed as part of the EIA. • Assessments will be undertaken in accordance with Strategic Road Network and the Delivery of Sustainable Development (Department for Transport Circular 01/2022), Planning Practice Guidance: Travel Plans, Transport Assessments and Statements (MHCLG, 2014), Environmental Assessment of Traffic and Movement (IEMA, 2023) and DMRB LA104: Environmental Assessment and Monitoring (Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland, 2020a).
The impact upon severance for users of the highway network resulting from increases in traffic flows as a result of construction traffic or works due to construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Additional vehicle movements or works required to facilitate construction of the Landfall and Onshore Transmission Infrastructure could limit the mobility/access of users of the highway network and other transport receptors, causing severance between communities.	
The impact upon road safety for users of the highway network and other transport receptors resulting from increases in traffic flows as a result of construction traffic or works due to construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Additional vehicle movements required to facilitate construction of the Landfall and Onshore Transmission Infrastructure could impact the safety of users of the road network and other transport receptors.	• The type, number, frequency and assignment of additional vehicle movements on the highway network generated during construction of the Landfall and Onshore Transmission Infrastructure will be predicted using first principles, from an understanding of the construction process, likely material quantities and construction programme. • An analysis of Personal Injury Accident (PIA) data will be undertaken to identify locations on the highway network which exhibit concentrations of collisions with similar patterns or collision rates above the national average. • These locations on the highway network will be considered as receptors sensitive to changes in traffic flows and will be subject to further detailed impact assessment. • The impact of the additional vehicle movements on road safety for users of the highway network will be assessed in accordance with Environmental Assessment of Traffic and Movement (IEMA, 2023), in addition to the application of professional judgement where required.
The impact upon the safety of users of the highway network and other transport receptors resulting from Abnormal Indivisible Loads (AILs) during construction of the Ossian Transmission Infrastructure landward of MHWS.	✓	×	×	Construction of the Landfall and Onshore Transmission Infrastructure will require the transportation of AILs, which may impact the safety of users of the road network and other transport receptors.	• A qualitative assessment of the impact of AILs on the safety of users of the highway network and other transport receptors will be undertaken using professional judgement where required. • This will comprise analysis to identify sections of the highway network which may require modifications to facilitate the transport of AILs to the Landfall and Onshore Transmission Infrastructure.

Table 7.8.3: Impacts Proposed to be Scoped Out of the Assessment for Traffic and Transport

Impact	Justification
Operation and Maintenance	
The impact upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety for users of the highway network and other transport receptors resulting from increases in traffic flows as a result of the operation and maintenance of the Ossian Transmission Infrastructure landward of MHWS.	Operation and maintenance of the Landfall and Onshore Transmission Infrastructure will generate a limited number of additional vehicle movements on the highway network. Typically operation and maintenance activities would not exceed ten vehicles per day (for periodic maintenance, likely to be one week once per year, a week of maintenance every three years and for occasional unscheduled maintenance – typically one to three days per month). Such a level of movement would not exceed the Rule 1 or Rule 2 thresholds set out in the IEMA Guidelines (see 7.8.8.9). Therefore, the potential impacts upon users of the highway network and other transport receptors resulting from additional vehicle movements during operation and maintenance of the Onshore Transmission Infrastructure are not expected to result in likely significant effects and are proposed to be scoped out of the assessment for traffic and transport.
Decommissioning	
The impact upon driver (including public transport) and non-motorised user delay, fear and intimidation (non-motorised user amenity), severance and road safety for users of the highway network and other transport receptors resulting from increases in traffic flows as a result of decommissioning of the Ossian Transmission Infrastructure landward of MHWS.	Decommissioning of the Landfall and Onshore Transmission Infrastructure will generate a lower number of additional vehicle movements on the highway network than the construction phase. This is because retired infrastructure/equipment will either be left *in situ* or transported away from site in bulk, reducing the number of additional vehicle movements required to facilitate decommissioning. In addition, measures to be included in the CTMP, updated as necessary, will also be employed during the decommissioning phase. Therefore, the potential impacts of additional vehicle movements during decommissioning based upon future year baseline conditions that could be estimated at this time would be no higher than those impacts during the construction phase and are proposed to be scoped out of the assessment for traffic and transport. An Onshore Decommissioning Plan will be prepared to mitigate effects generated by traffic.

7.8.8 Proposed Assessment Methodology

7.8.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in, as set out in **Table 7.8.2** is described below.

Legislation and Policy

7.8.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.8.8.3 Guidance documents relevant to traffic and transport that will be considered within the assessment process include the following.

- Environmental Assessment of Traffic and Movement, IEMA, 2023 (the 'IEMA Guidelines').
- DMRB LA104: Environmental Assessment and Monitoring (Highways England, Transport Scotland, Welsh Government and Department for Infrastructure Northern Ireland, 2020).

Assessment of Effects

7.8.8.4 Additional vehicle movements generated during construction of the Landfall and Onshore Transmission Infrastructure will be determined using first principles, from an understanding of the construction process, likely material quantities and construction programme as the design progresses.

7.8.8.5 A detailed analysis of the highway network will then be undertaken to identify key locations where potential traffic and transport impacts may occur. This analysis will identify highway network constraints and inform the access strategy for construction related vehicles (i.e., types, numbers, frequency and timings).

7.8.8.6 The access strategy to be utilised during the construction will be consulted and agreed upon with the highway authorities.

7.8.8.7 The assessment will assess the predicted traffic flows against forecast baseline traffic flows to determine if an impact is likely to occur. The scope and duration of predicted impacts will be quantified for each phase of the construction programme.

7.8.8.8 In addition, the ES will include an outline of the proposed construction compounds, which will be further developed as the design progresses, to indicate the potential size and broad spread of construction compounds that are likely to be required.

7.8.8.9 In terms of the assessment of the environmental impacts of traffic and movement, the IEMA guidelines sets out the following two 'rules' to delimit the geographic extent of assessment.

- Rule 1 – Include road links where traffic flows will increase by more than 30% or where the number of Heavy Goods Vehicles (HGVs) will increase by more than 30%.
- Rule 2 – Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

Receptor Sensitivity

7.8.8.10 The assessment will identify the sensitivity of affected transport routes, taking into account the presence and location of sensitive receptors or route users. The definition of sensitivity in this section uses professional judgement and guidance provided in the IEMA Guidelines. These are outlined in **Table 7.8.4**.

Table 7.8.4: Definitions of Sensitivity for Traffic and Transport

Sensitivity	Typical Descriptors
High	High concentration of receptors with greatest sensitivity due to site-specific characteristics which make them particularly sensitive to changes in traffic flow, high instances of road collisions (with reference to PIA data and PIA rates being well above the national average), urban/residential/built-up roads without commensurate footway provision, high footfall, severely congested junctions.
Medium	Some concentrations of receptors with some sensitivity to traffic flows including congested junctions, urban/residential/built-up areas with narrow footway provision for its use, demand and footfall or with receptors where there are no/limited setbacks from affected roads and junctions, unsegregated cycleways, roads with PIA rates slightly above the national average.
Low	Low concentrations of receptors with some sensitivity to traffic flows including urban/residential/built-up areas with good footway provision commensurate for its use, demand and footfall and other receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.
Negligible	Receptors with negligible sensitivity to traffic flows and those sufficiently distant from affected roads and junctions or where no receptors are present.

Magnitude of Impact

7.8.8.11 Rules 1 and 2 are used as a tool to delimit the geographic extent of assessment. Highway links which are identified as negligible, low or medium sensitivity will be considered against the Rule 1 threshold. Highway links which are identified as high sensitivity will be considered against the Rule 2 threshold. Where predicted changes in traffic flow fall beneath these levels, a full assessment of likely significant effects will not be required and no likely significant effects upon that highway link would be predicted (in accordance with the IEMA guidelines).

7.8.8.12 Consistent with the IEMA Guidelines, the following will be considered within the traffic and transport assessment:

- driver delay (including public transport);
- severance;
- pedestrian delay;
- fear and intimidation (non-motorised user amenity);
- road safety; and
- abnormal indivisible loads.

7.8.8.13 **Table 7.8.5** sets out the considerations for defining the magnitude of impact (change) that has been informed by the IEMA Guidelines.

Table 7.8.5: Magnitude of Impact (Change) for Traffic and Transport

Impact	Negligible	Low	Medium	High
Driver delay	Defined in accordance with Transport Assessment guidance and a review of the change in operation of a junction or highway link with a particular focus on the weekday peak hour periods when baseline traffic flows are at their highest.			
Severance	Change in total traffic flow of less than 30%.	Change in total traffic flow of 30% to 60%.	Change in total traffic flow of 60% to 90%.	Change in total traffic flow of more than 90%.
Non-motorised user delay	Change in total traffic flow of less than 30%.	Change in total traffic flow of 30% to 60%.	Change in total traffic flow of 60% to 90%.	Change in total traffic flow of more than 90%.
Fear and intimidation (non-motorised user amenity)	No step changes in the level of fear and intimidation.	One step change in the level of fear and intimidation, with <400 vehicles increase in average 18hr vehicle movements and / or <500 HGV increase in total 18hr HGV flow.	One step change in the level of fear and intimidation, but with >400 vehicles increase in average 18hr vehicle movements and / or >500 HGV increase in total 18hr HGV flow.	Two step changes in the level of fear and intimidation.
Road safety	Defined from a review of PIA data along road links and the predicted changes in traffic flow			
AILs	Defined by an assessment of the suitability of the access routes to accommodate AILs			

Significance of Effect

7.8.8.14 The significance of the effect upon traffic and transport will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.8.8.15 Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement. For the purpose of this assessment, any effects with a significance level of moderate or above will be considered to be significant in terms of the EIA Regulations. Where the magnitude of impact is 'no change', no likely significant effect would arise.

7.8.8.16 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.8.8.17 The CEA for traffic and transport will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The traffic and transport chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.8.8.18 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on traffic and transport are screened out from the EIA process.

Relevant Consultation

7.8.8.19 The Applicant has undertaken introductory consultation with statutory consultees, including Lincolnshire County Council, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Traffic and Transport chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- National Highways; and
- Lincolnshire County Council.

7.8.9 Next Steps

7.8.9.1 The following are proposed as next steps in relation to traffic and transport.

- The approach to the assessment (including the assessment methodology, study area, data sources) will be informed using feedback from the Scoping Opinion.
- Further non-statutory consultation will be carried out via the relevant ETG and other technical meetings. These meetings will serve as a platform to discuss key issues with relevant local authorities, including the approach to assessment and mitigation proposals.
- As part of the evolving design, an access strategy will be progressed to identify access routes. The approach to this access strategy would be discussed with the ETG prior to the assessment being undertaken.

7.9. Noise and Vibration

7.9.1 Introduction

7.9.1.1 This section of the EIA Scoping Report presents the proposed scope of the assessment for noise and vibration from the Ossian Transmission Infrastructure landward of MLWS. This section considers the potential impacts arising from the construction, operation and maintenance and decommissioning of the Landfall and Onshore Transmission Infrastructure and identifies the proposed scope of, and methodology for, the EIA process for noise and vibration.

7.9.1.2 The potential impacts arising from underwater noise and vibration generated during the construction, operation and maintenance, and decommissioning of the Offshore Transmission Infrastructure are described in **section 6.5** of the EIA Scoping Report. Noise disturbance to sensitive ecological receptors is addressed in **section 7.4** of the EIA Scoping Report.

7.9.2 Proposed Study Area for the Assessment

7.9.2.1 The noise and vibration study areas proposed to be used for the assessment will be defined in line with best practice guidance. This will cover the Landfall and Onshore Transmission infrastructure, landward of MLWS.

7.9.2.2 The construction and decommissioning study areas will be defined with reference to the guidance in the Design Manual for Roads and Bridges (DMRB) LA111 – Noise and Vibration (Highways England *et al.,* 2020e). Note 1 of paragraph 3.5 of LA111 states the following regarding noise sensitive receptors:

'A study area of 300 m from the closest construction activity is normally sufficient to encompass noise sensitive receptors.'

7.9.2.3 Similarly, Note 1 of paragraph 3.29 of LA111 states the following regarding vibration sensitive receptors:

'A study area of 100 m from the closest construction activity with the potential to generate vibration is normally sufficient to encompass vibration sensitive receptors.'

7.9.2.4 The assessment of operation and maintenance noise impacts will be undertaken at the noise sensitive receptors most likely to be affected by noise during the operational phase of the Onshore Transmission Infrastructure. In line with guidance, such as BS4142, the study area should allow for the assessment to include the closest residential receptors in all directions. A study area of 1 km around the Onshore Converter Stations is proposed. This would capture the closes receptors in all directions for any site that may be selected within the Onshore Converter Station Search Areas.

7.9.2.5 In summary, the noise and vibration study areas proposed for the assessment are defined as follows.

- Noise sensitive receptors located within 300 m of construction and decommissioning activities associated with the Landfall, Onshore Export Cable Corridor and the Onshore Converter Stations, including construction compounds and construction accesses.
- Vibration sensitive receptors located within 100 m of construction and decommissioning activities with the potential to generate vibration that are associated with the Landfall, Onshore Export Cable Corridor and the Onshore Converter Stations, including construction compounds and construction accesses.
- Noise sensitive receptors located within 1 km of the Onshore Converter Stations that may be subject to noise effects during the operation and maintenance phase.

7.9.2.6 The ES will include appropriate figures to illustrate the study area adopted for the construction noise assessment and noise sensitive receptors within the study area. Agreement about the study area and noise monitoring locations will be sought with the relevant consultation bodies.

7.9.3 Baseline Environment

7.9.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary and Landfall based on an initial review. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **section 7.9.4**.

7.9.3.2 A large proportion of the areas within the Onshore Scoping Boundary and Intertidal Scoping Boundary is located within a rural and agricultural setting, which may be indicative of low ambient sound levels. However, ambient sound levels are likely to increase in areas located in proximity to urban areas, such as towns and villages.

7.9.3.3 A number of larger settlements and smaller villages and hamlets are present within the Onshore Scoping Boundary and Intertidal Scoping Boundary, as well as isolated rural properties. Although the site selection process will avoid these in terms of the siting for Onshore Converter Stations, Landfall and the routing of the Onshore Export Cable Corridor, some of the properties may be located within the noise and vibration study areas.

7.9.3.4 Higher ambient sound levels are likely to be experienced by sensitive receptors located in proximity to the local highway network or other forms of transport infrastructure (e.g. railways, flightpaths). The Onshore and Intertidal Scoping Boundary includes or is close to several main transport routes, including the following national and regional roads.

- A-Roads (main trunk roads): A1028, A1104, A1111, A1121, A151, A152, A155, A157, A158, A16, A17, and the A52.
- B-Roads (lower traffic densities than the main trunk roads): B1180, B1181, B1183, B1184, B1192, B1195, B1196, B1356, B1357, B1373, B1391, B1397, and the B1449.

7.9.3.5 There is one railway line within the Onshore and Intertidal Scoping Boundary. This is the Poacher Line, which routes broadly south-west to north-east between Grantham and Skegness.

7.9.3.6 Noise Important Areas (NIA) are determined via strategic noise maps and highlight the residential areas experiencing the highest 1% of noise levels from road and rail sources in England. There are no NIAs related to road traffic or rail noise within the Onshore and Intertidal Scoping Boundary.

7.9.3.7 There are no statutory or non-statutory designations specifically related to matters of noise and vibration, or how it should be controlled. However, early engagement with the relevant Local Authority Environmental Health Officer (EHO) will facilitate the identification of sensitive receptors for assessment to ensure the noise and vibration assessment is robust and proportionate.

7.9.3.8 It is assumed that the existing vibration levels within the Onshore Scoping Boundary and Intertidal Scoping Boundary would be negligible when compared to construction vibration threshold values, which is likely to be the case even close to railways or busy main roads. The assessment will therefore consider potential construction vibration impacts against threshold values assuming no significant existing vibration sources are present.

7.9.3.9 The baseline for the assessment of noise and vibration impacts will primarily be drawn from evidence collated during review of desk study data and site-specific surveys. Consideration will also be given to any likely changes between the time of data collection/survey and the future baseline for the construction, operation and maintenance, and decommissioning of the Landfall and Onshore Transmission Infrastructure.

7.9.3.10 In addition to residential receptors, consideration will also be given to other types of noise and vibration sensitive receptors which are within the study area, such as schools, medical facilities, community facilities, international and national or statutorily designated sites, public rights of way, nature reserves, and cultural heritage assets.

Future Baseline Conditions

7.9.3.11 As the proportion of road traffic vehicles that are electrically powered increases, it is possible that baseline traffic noise levels may reduce slightly due to the lower engine-noise levels, although on open roads and motorways, there will still be influence from noise due to tyre-road interaction and aerodynamic deflections over the vehicle surface.

7.9.3.12 Where sufficient and robust information is available, such as expected traffic growth figures, other future developments will be considered as part of the future baseline conditions. In all other cases, planned future developments will be considered within the assessment of cumulative effects. The consideration of future baseline conditions will also take into account the likely effects of climate change, as far as these are known at the time of writing.

7.9.4 Proposed Data Sources

Desk Studies

7.9.4.1 Data sources will primarily derive from site-specific surveys. However, studies undertaken for other similar projects in the area will be reviewed.

Site-specific Surveys

7.9.4.2 Sound monitoring surveys will be undertaken to characterise the baseline sound levels. The location of baseline sound surveys will be determined through a desk-based review of OS mapping data and satellite imagery to identify sensitive receptors, within the noise and vibration study areas for the Landfall and Onshore Transmission Infrastructure, which are most likely to be impacted by noise generated during construction, operation and maintenance, and decommissioning.

7.9.4.3 The location of baseline sound surveys will be suitably representative and agreed with EHOs from the relevant Local Planning Authority.

7.9.4.4 In addition, a weather station will be deployed at one (or more) locations to record site-specific meteorological conditions during baseline sound surveys. The meteorological information collected will be reviewed and, as appropriate, sound measurement data will be excluded from the dataset to ensure that representative ambient and background noise levels can be derived.

7.9.4.5 The baseline sound surveys (and data scoping) will be undertaken in accordance with British Standard (BS) 4142:2014 Methods for rating and assessing industrial and commercial sound (BSI, 2019) and BS 7445:1991 Description and measurement of environmental noise Part 2: Guide to the acquisition of data pertinent to land use (BSI, 1991a).

7.9.5 Mitigation Measures

7.9.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- CTMP – The movement of construction vehicles entering or exiting construction sites and utilising the local highway network would be controlled as to avoid or reduce potential impacts of noise emissions on sensitive receptors. An outline CTMP will be provided as part of the application for development consent.
- Construction Noise and Vibration Management Plan (CNVMP) – Construction would be undertaken in accordance with the relevant best practice measures as recommended in British Standard Institute (BSI) BS 5228:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration (BSI, 2014). The CNVMP will include detail such as construction working hours and access routes, exposure limits, monitoring and reporting requirements, mitigation, and complaint management. An Outline CNVMP will be provided as part of the application for development consent and agreed in advance with relevant consultees.
- The following noise and vibration control measures will be considered in the design of the Onshore Converter Stations.
  - The location, orientation and layout of the Onshore Converter Stations will be designed to reduce noise levels at nearby sensitive receptors, as far as practicable. This will take into account, for example, the guidance set out in NPS EN-1 and EN-3 relating to the principles of good design.
  - Vibration isolation measures will be included to protect the plant from potential external sources of vibration, that will also serve to attenuate vibration from the plant.
  - Quieter equipment will be selected, where available and practicable and mitigation measures such as acoustic barriers and enclosures will be specified where necessary.

- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.9.5.2 The requirement for and feasibility of any mitigation measures will be dependent on the significance of effects and will be consulted upon with statutory and non-statutory consultees as appropriate throughout the EIA process.

7.9.5.3 Any requirements for additional noise and vibration mitigation measures will be determined through discussions with the EHOs from each Local Planning Authority likely to be affected as part of the noise and vibration assessment.

7.9.6 Proposed Scope of the Assessment

7.9.6.1 Potential impacts that are proposed to be scoped into the assessment for noise and vibration are set out in **Table 7.9.1**.

7.9.7 Impacts Proposed to be Scoped Out

7.9.7.1 Impacts that are proposed to be scoped out of the assessment for noise and vibration and the justification are set out in **Table 7.9.2**.

7.9.7.2 Consideration of noise in relation to non-human receptors (such as ecological receptors and underwater receptors) will be assessed in the relevant topic chapter, based on source levels provided within the noise and vibration assessment.

Table 7.9.1: Potential Impacts Proposed to be Scoped In for Noise and Vibration

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact of noise and vibration generated by construction and decommissioning activities for the Landfall and Onshore Transmission Infrastructure on human receptors.	✓	N/A	✓	Activities required for the construction and decommissioning of the Landfall and Onshore Transmission Infrastructure would generate noise and vibration emissions which could adversely impact the health and quality of life of human receptors.	Human receptors sensitive to noise and vibration located within the noise and vibration study areas will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative, focused on key areas of impact and agreed with the EHO from the relevant Local Planning Authority. Consideration will also be given to recreational receptors, where necessary, to protect the amenity of the local natural environment for the general public. Predicted noise and vibration levels arising from on-site construction and decommissioning activities will be calculated using modelling, in accordance with the methodology in BS 5228:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration (BSI, 2014), where applicable. The impact of noise and vibration will be assessed in accordance with BS 5228:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration (BSI, 2014), with mitigation considered as appropriate. The significance of likely effects will be determined in accordance with IEMA Guidelines for Environmental Noise Impact Assessment (IEMA, 2014).
The impact of noise generated by additional vehicle movements on the local highway network during the construction and decommissioning phases for the Landfall and Onshore Transmission Infrastructure on human receptors.	✓	×	✓	Additional vehicle movements on the local highway network required to facilitate construction and decommissioning of the Landfall and Onshore Transmission Infrastructure would generate noise emissions which could adversely affect the health and quality of life of human receptors.	Human receptors sensitive to noise located within the noise and vibration study areas will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative and agreed with the EHO from the relevant Local Planning Authority. The number of additional vehicle movements required to facilitate construction and decommissioning of the Onshore Transmission Infrastructure will be determined as part of the assessment for traffic and transport (see **section 7.8** of this EIA Scoping Report). Predicted noise levels arising from additional vehicle movements on the local road network during the construction and decommissioning phase will likely be calculated using the Calculation of Road Traffic Noise (CRTN) (Department of Transport, 1988). If the traffic volumes fall below the thresholds of CRTN then an alternative method may be used, or corrections may be applied to the data, as appropriate. Although the guidance in DMRB LA111 – Noise and Vibration (Highways England *et al.,* 2020e) is not directly applicable as this is not a new road scheme, the thresholds presented therein will be used as a basis for the impact of traffic noise on human receptors. The details of the scenarios to be assessed will be evaluated following receipt of the traffic data. The significance of likely effects will be determined in accordance with the IEMA Guidelines for Environmental Noise Impact Assessment (2014).
The impact of noise generated during the operation and maintenance of the Onshore Converter Stations on human and ecological receptors.	N/A	✓	N/A	Operation of the proposed Onshore Converter Stations would generate noise emissions which could adversely affect the health and quality of life of human receptors.	Human receptors sensitive to noise located within the noise and vibration study areas will be identified using desk-based analysis. Where existing baseline data coverage is insufficient, baseline sound levels will be obtained through sound monitoring surveys. The locations and durations of baseline sound surveys will be suitably representative and agreed with the EHO from the relevant Local Planning Authority. Predicted noise levels arising from operation of the Onshore Converter Stations will be calculated using computational modelling software implementing the methodology in ISO 9613-2:2024 - Acoustics -

Impact	C	O	D	Description	Proposed Approach to Assessment
					Attenuation of sound during propagation outdoors - Part 2: Engineering method for the prediction of sound pressure levels outdoors (ISO, 2024). The impact of noise on human receptors will be assessed in accordance with BS 4142 and relevant World Health Organisation guidance. The significance of likely effects will be determined in accordance with the IEMA Guidelines for Environmental Noise Impact Assessment (2014).

Table 7.9.2: Impacts Proposed to be Scoped Out of the Assessment for Noise and Vibration

Impact	Justification
Construction and Decommissioning	
The impact on human receptors arising from vibration generated by additional vehicle movements on the local highway network during construction and decommissioning of the Landfall and Onshore Transmission Infrastructure.	Additional vehicle movements on the local highway network during construction and decommissioning are unlikely to generate high levels of vibration. The explanatory Note to DMRB LA111 – Noise and Vibration (Highways England *et al.,* (2020e) paragraph 1.4 states that: '*Operational vibration is scoped out of the assessment methodology as a maintained road surface will be free of irregularities as part of project design and under general maintenance, so operational vibration will not have the potential to lead to significant adverse effects*.' Therefore, the potential impact of vibration from additional vehicle movements on human receptors during construction of the Landfall and Onshore Transmission Infrastructure is unlikely to result in significant effects and is proposed to be scoped out of the assessment for noise and vibration.
The impact on human receptors (onshore) of noise and vibration generated during the construction of the Offshore Transmission Infrastructure.	Due to the nature of the offshore works during construction, the distance from onshore sensitive receptors and the duration of the works, effects from the Offshore Transmission Infrastructure on onshore receptors are proposed to be scoped out of the assessment for noise and vibration.
Operation and Maintenance	
The impact on human receptors arising from vibration generated during the operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	Operation and maintenance of the Landfall and Onshore Transmission Infrastructure is unlikely to generate high levels of vibration. The design of the Onshore Converter Stations will incorporate vibration control where required to ensure no significant effects on receptors. Therefore, the potential impact on human receptors during the operation and maintenance of the Landfall and Onshore Transmission Infrastructure is unlikely to result in significant effects and is proposed to be scoped out of the assessment for noise and vibration.
The impact on human receptors of noise and vibration generated during the operation and maintenance of the Landfall and Onshore Export Cables.	Operation and maintenance of the Onshore Export Cables and associated infrastructure is unlikely to generate high levels of noise and vibration. The impact of noise and vibration on sensitive receptors during maintenance activities would be intermittent, short term and temporary in nature. Additional vehicle movements associated with operation and maintenance of the Landfall, Onshore Export Cables and associated infrastructure would also be intermittent, short term and temporary in nature and unlikely to exceed the thresholds that would warrant an assessment with the DMRB LA111 – Noise and Vibration (Highways England *et al*., 2020e) (see **sections 7.8** and **section 4**). Therefore, the potential impact on human and ecological receptors during operation and maintenance of the Landfall and Onshore Export Cables and associated infrastructure is unlikely to be significant and is proposed to be scoped out of the assessment for noise and vibration.
The impact on human receptors of noise from the Onshore Converter Stations switchgear and auxiliary plant.	Switchgear noise is generated, in the main, by the operation of circuit breakers, for which the noise emissions are 'impulsive' in character (i.e. of short duration). Modern switchgear operates with a dull 'thud'. Switchgear would operate very infrequently and is therefore proposed to be scoped out. Auxiliary plant may comprise standby diesel generators and air compressors to provide emergency back-up power to cooling plant. When present and operating, these maybe audible at receptors, however they do not run continuously, and in any case, would be housed in a building or outdoor acoustic enclosure. Noise from such assets is therefore not considered significant, given its emergency function and as such is proposed to be scoped out.

7.9.8 Proposed Assessment Methodology

7.9.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.9.1** is described below.

Legislation and Policy

7.9.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.9.8.3 The noise and vibration assessment for the Landfall and Onshore Transmission Infrastructure will be undertaken taking into account the following guidance.

- BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound (BSI, 2019).
- BS 5228:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration (BSI, 2014).
- BS 7445:2003 – Part 1 Description and measurement of environmental noise. Guide to quantities and procedures (BSI, 2003).
- BS 7445:1991 – Part 2 Description and measurement of environmental noise. Guide to the acquisition of data pertinent to land use (BSI, 1991a).
- BS 7445:1991 – Part 3 Description and measurement of environmental noise. Guide to application to noise limits (BSI, 1991b).
- Calculation of Road Traffic Noise (BSI, 1988).
- DMRB – LA111 – Noise and Vibration (Highways England *et al*., 2020e).
- DMRB - LA104 - Environmental assessment and monitoring (Highways England *et al*., 2020)
- IEMA - Guidelines for Environmental Noise Impact Assessment (IEMA, 2014).
- ISO 9613-2:2024 - Acoustics - Attenuation of sound during propagation outdoors - Part 2: Engineering method for the prediction of sound pressure levels outdoors (ISO, 2024).
- NPPF (Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities, 2024).
- Noise Policy Statement for England (NPSE) (Defra, 2010).
- Planning Practice Guidance – Noise (Department for Levelling Up, Housing and Communities, 2019).
- World Health Organisation (WHO) - Guidelines for Community Noise (WHO, 2000).

Assessment of Effects

7.9.8.4 Potential noise and vibration impacts of the Landfall and Onshore Transmission Infrastructure will be assessed in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report, in addition to the topic-specific methodology outlined below. Further detail regarding the methodology to be used for the assessment of noise and vibration effects will be provided as part of the noise and vibration chapter of the PEIR and subsequent ES.

7.9.8.5 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for noise and vibration. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

Receptor Sensitivity

7.9.8.6 The criteria for defining the sensitivity of noise and vibration receptors, from DMRB LA104, is provided in **Table 7.9.3** below. Further detail on the types of receptors will be provided as part of the noise and vibration chapter of the ES.

Table 7.9.3: Sensitivity Criteria

Sensitivity	Definition
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Construction and Decommissioning Noise

7.9.8.7 Impact criteria for construction and decommissioning noise will be determined in accordance with the DMRB LA 111 (Highways England *et al*., 2020e) and Annex E of BS 5228-1:2009+A1:2014 (BSI, 2014). The Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) are defined in **Table 7.9.4** below, and the impact criteria are presented in **Table 7.9.5**.

Table 7.9.4: Construction Time Period – LOAEL and SOAEL

Time Period	LOAEL	SOAEL
• Weekdays (07:00-19:00 hours) • Saturdays (07:00-13:00 hours)	Baseline sound levels, $L_{Aeq,T}$	Relevant threshold values as presented Table E.1 BS 5228-1:2009+A1:2014(1).
• Evenings (19:00-23:00 hours) • Saturdays (13:00-23:00 hours) • Sundays (07:00-23:00 hours)		
• Night (23:00-07:00 hours)		

(1) This assumption may result in an overestimation of the effects due to construction noise at a limited number of locations and thus forms basis of a robust assessment.

Table 7.9.5: Construction and Decommissioning Noise Impact Magnitude Criteria

Magnitude of Impact	Construction Noise Level
High	$L_{Aeq,T}$ ≥ SOAEL + 5 dB
Medium	SOAEL ≤ $L_{Aeq,T}$ < SOAEL +5 dB
Low	LOAEL ≤ $L_{Aeq,T}$ < SOAEL
Negligible	$L_{Aeq,T}$ < LOAEL

7.9.8.8 With regard to duration of impacts, section 3 of DMRB LA 111 (Highways England *et al*., 2020e) states the following '*Construction noise and construction traffic noise shall constitute a significant effect where it is determined that a major or moderate magnitude of impact will occur for a duration exceeding:*

- *10 or more days or nights in any 15 consecutive days or nights;*
- *a total number of days exceeding 40 in any 6 consecutive months*.'

7.9.8.9 In the context of this assessment, the terms 'major' and 'moderate' in DMRB LA 111 equate respectively to high and medium impact magnitude.

Construction and Decommissioning Traffic Noise

7.9.8.10 There may be a change in noise levels at receptors due to contributions from construction traffic on local road networks and temporary diversion networks during the construction of the Landfall and Onshore Transmission Infrastructure. The impact assessment will consider the level of the road traffic noise both with and without the construction traffic and the existing sound levels at the nearest receptors. Impact criteria for these changes have been obtained from the guidance in DMRB LA 111 (Highways England *et al.,* 2020e) and are presented in **Table 7.9.6** below.

Table 7.9.6: Construction and Decommissioning Traffic Noise Impact Magnitude Criteria

Magnitude of Impact	Increase in BNL of Closest Public Road Used for Construction Traffic (dB)
High	BNL ≥ 5
Medium	3 ≤ BNL < 5
Low	1 ≤ BNL < 3
Negligible	BNL < 1

Construction and Decommissioning Vibration

7.9.8.11 Impact criteria for vibration from construction have been identified based on guidance provided in BS 5228-2:2009+A1:2014 (BSI, 2014). The following outline criteria in **Table 7.9.7** in terms of Peak Particle Velocity (PPV) will be used to identify potential impacts on nearby receptors.

Table 7.9.7: Construction and Decommissioning Vibration Impact Magnitude Criteria

Magnitude of Impact	Vibration Level, PPV, mm/s
High	PPV ≥ 10(1)
Medium	1 ≤ PPV < 10
Low	0.3 ≤ PPV < 1
Negligible	PPV < 0.3

(1) Vibration at these levels is unlikely to be tolerable for more than a very brief period and major effects could occur below these levels, particularly where impacts occur for longer periods.

Operational Noise

7.9.8.12 Noise impacts associated with the operation and maintenance of the Onshore Converter Stations will be determined using the BS 4142:2014+A1:2019 methodology (BSI, 2019). This will involve calculating the operational rating sound level ($L_{Ar,Tr}$) at nearby receptors, including any acoustic character corrections for tonality, impulsivity, intermittency, or other distinct characteristics.

7.9.8.13 The rating sound level will be compared to the representative background sound level ($L_{A90,T}$) at the nearest receptors, obtained from baseline acoustic environment measurements. The difference will determine the impacts, assessed per section 11 of BS 4142:2014+A1:2019 (BSI, 2019), considering the context of the sound assessment.

7.9.8.14 Based on the above, the following impact criteria in **Table 7.9.8** have been defined for operational noise.

Table 7.9.8: Operational Noise Impact Magnitude Criteria

Magnitude of Impact	BS 4142:2014+A1:2019 Semantic Description	Difference Δ between rating sound Level $L_{Ar,Tr}$ and background sound level $L_{A90,T}$ (dB)
High	A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.	Δ ≥ 10
Medium	A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.	5 ≤ Δ < 10
Low	Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.	0 ≤ Δ < 5
Negligible		-10 ≤ Δ < 0
No change	-	Δ < -10

Significance of Effects

7.9.8.15 The significance of the effect will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.9.8.16 Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement. For the purpose of this assessment, any effects with a significance level of moderate or above will be considered to be significant. Where the magnitude of impact is 'no change', no effect would arise.

7.9.8.17 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.9.8.18 The CEA for noise and vibration will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The noise and vibration chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.9.8.19 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on noise and vibration are screened out from the EIA process.

Relevant Consultation

7.9.8.20 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Noise and Vibration chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- South East Lincolnshire Councils Partnership (environmental health teams).

7.9.9 Next Steps

7.9.9.1 The following are proposed as next steps in relation to noise and vibration.

- Seek agreement on the scope of the assessment, including the location and methodology for sound surveys to inform the assessment. This will be undertaken once the siting and design of the Landfall and Onshore Transmission Infrastructure have been refined.

7.10. Air Quality

7.10.1 Introduction

7.10.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for air quality. In addition, this section identifies relevant air quality receptors and considers the potential impacts arising from the construction, operation and maintenance, and decommissioning of the Ossian Transmission Infrastructure landward of MHWS.

7.10.1.2 Impacts on ecology (including those arising from changes in air quality) are considered in **section 7.4** of this EIA Scoping Report. Impacts on human health are considered in **section 7.12** of this EIA Scoping Report.

7.10.2 Proposed Study Area for the Assessment

7.10.2.1 The study area for the assessment of air quality will comprise the receptors located within the area to be temporarily or permanently required for the Ossian Transmission Infrastructure, landward of MHWS (i.e. the Onshore Transmission Infrastructure and those parts of the Landfall located landward of MHWS). In addition, the study area will include receptors within the following distances depending on the types of emissions and receptors concerned (distances based on IAQM, 2024).

- Dust:
  - people and property located within 250 m of the land required for construction works associated with the Ossian Transmission Infrastructure landward of MHWS;
  - ecological receptors sensitive to dust located within 50 m of the land required for construction works for the Ossian Transmission Infrastructure landward of MHWS; and
  - ecological receptors, people and property sensitive to dust located within 50 m of roads used by construction vehicles and up to 250 m of the entrance to the land required for construction works for the Ossian Transmission Infrastructure landward of MHWS.
- Vehicle emissions:
  - human and ecological receptors sensitive to vehicle emissions within 200 m of the road network to be used by construction vehicles, where either of the following criteria for detailed air quality assessment from the Land-Use Planning & Development Control: Planning for Air Quality (IAQM and EPUK, 2017) are satisfied;
  - a change in Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA), or more than 500 AADT elsewhere; or

– a change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere.

7.10.2.2 Human receptors to be considered in the air quality assessment include residential and commercial properties (e.g. places of work), educational facilities (e.g. nurseries, schools, colleges), medical facilities (e.g. hospitals, care homes, GP surgeries) and recreational facilities (e.g. golf clubs, parks, PRoW).

7.10.2.3 Ecological receptors to be considered in the air quality assessment include statutory and non-statutory sites designated for nature conservation and protected habitats and species of ecological importance, where these are sensitive to changes in air quality (e.g. emissions, dust deposition). The potential impacts of changes in air quality on ecological receptors will be considered separately in the assessment for onshore ecology and nature conservation (see **section 7.4** of this EIA Scoping Report).

7.10.3 Baseline Environment

7.10.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary based an initial review. This will be developed further as part of the EIA process. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **section 7.10.4**.

Air Quality Management Areas

7.10.3.2 There are no AQMAs located within the Onshore Scoping Boundary. The closest AQMA is located 2.2 km to the east of the Onshore Scoping Boundary in the town of Boston, Lincolnshire.

Ecological Receptors

7.10.3.3 The Onshore Scoping Boundary coincides with multiple statutory sites designated for nature conservation (SPAs, SSSIs and LNRs), which are identified in **Table 7.4.2** of **section 7.4** of this EIA Scoping Report. The Onshore Scoping Boundary also coincides with several areas of ancient woodland, which are susceptible to changes in air quality. Further non-statutory designated sites sensitive to changes air quality will be identified once the siting and design of the Landfall and Onshore Transmission Infrastructure has been refined.

7.10.3.4 The ecological receptors identified will remain under review and may be updated in response to feedback from relevant statutory and non-statutory consultees during the EIA process, or in response to new sources of information becoming available.

Human Receptors

7.10.3.5 Human receptors located within the Onshore Scoping Boundary include the occupiers of residential properties associated with towns (or villages). The occupiers of rural properties situated outside of existing settlements, but within the air quality study area, will also be considered in the air quality assessment. Other human receptors located within the Onshore Scoping Boundary include commercial properties, education facilities, medical facilities and recreational facilities.

Future Baseline Conditions

7.10.3.6 The EIA process will consider the future baseline conditions (as far as reasonably practicable) of relevance to the assessment for this topic. With UK-wide initiatives such as those set out in the Clean Air Strategy, air quality is likely to improve over time.

7.10.4 Proposed Data Sources

Desk Studies

7.10.4.1 The data sources used to inform the baseline assessment will primarily comprise published material which is publicly available online. An initial review has identified the following data sources which will be used for the assessment of air quality.

- Defra Interactive AQMA Boundaries Map based on information reported by local authorities for 2024.
- Defra 2021-based background mapping data for NO_2, PM_{10} and $PM_{2.5}$.
- Air Quality Progress Reports and Annual Status Reports produced by the relevant local planning authorities (LPAs).
- Air Pollution Information System for Site Relevant Critical Loads and background pollutant concentrations and deposition rates at sensitive ecological sites.

7.10.4.2 The baseline data sources identified in this EIA Scoping Report will remain under review and may be updated in response to feedback from relevant statutory and non-statutory consultees during the EIA process, or in response to new sources of information becoming available.

Site-specific Surveys

7.10.4.3 Given the availability of existing data, including local authority monitoring, no site-specific surveys are considered necessary.

7.10.5 Mitigation Measures

7.10.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Production of a CTMP – The movement of construction vehicles entering or exiting construction sites and utilising the local highway network would be controlled to avoid or reduce potential impacts of air emissions on sensitive receptors (see **section 7.8** of this EIA Scoping Report). This will be controlled through the CTMP. An Outline CTMP will be submitted as part of the application for development consent.
- Production of a CoCP – Construction would be undertaken in accordance with the relevant best practice measures as recommended in the Guidance on the assessment of dust from demolition and construction (IAQM, 2024). This would include the development of an appropriate Dust Management Plan. The Dust

Management Plan would form part of the CoCP. It will also include measures to control emissions from Non-Road Mobile Machinery (NRMM), including those set out in IAQM.TG22 or equivalent. An Outline CoCP will be submitted as part of the application for development consent.

- Onshore Decommissioning Plan – This would set out how dust emissions would be controlled during decommissioning of the Landfall and Onshore Transmission Infrastructure as to avoid or reduce potential impacts on sensitive receptors.

7.10.5.2 The embedded mitigation measures will evolve as the EIA process progresses. The requirement and feasibility of any mitigation measures will be consulted upon with statutory consultees throughout the EIA process.

7.10.6 Proposed Scope of the Assessment

7.10.6.1 Potential impacts that are proposed to be scoped in to the assessment for air quality are set out in **Table 7.10.1**.

7.10.7 Impacts Proposed to be Scoped Out

7.10.7.1 Impacts that are proposed to be scoped out of the assessment for air quality and the justification are set out in **Table 7.10.2**.

Table 7.10.1: Potential Impacts Proposed to be Scoped in for Air Quality

Impact	C	O	D	Description	Proposed Approach to Assessment
The impact of dust soiling (nuisance) on property arising from dust emissions generated by on-site construction and decommissioning landward of MHWS.	✓	×	✓	Activities required for the construction and decommissioning of the Landfall and Onshore Transmission Infrastructure (e.g. earthworks, vehicle track-out) would generate dust emissions which could result in dust soiling effects on human receptors, including people and property.	The impact of deposited dust on property will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024).
The impact of increases in suspended particulate matter on human receptors arising from dust emissions generated by on-site construction and decommissioning landward of MHWS.	✓	×	✓	Activities required for the construction and decommissioning of the Landfall and Onshore Transmission Infrastructure (e.g. earthworks, vehicle track-out) would generate dust emissions which could result in adverse effects on the health of human receptors.	The impact of suspended particulate matter on property will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024).
The impact on human receptors arising from air emissions generated by vehicles during construction and decommissioning landward of MHWS.	✓	×	✓	Additional vehicle movements required to facilitate construction and decommissioning of the Landfall and Onshore Transmission Infrastructure would generate air emissions (i.e. NO_2, PM_{10} and $PM_{2.5}$) which could result in adverse effects on the health of human receptors.	An initial screening assessment will be undertaken to identity areas which may require more detailed assessment of road traffic emissions. The screening assessment will utilise screening criteria set out in the EPUK & IAQM Land-use planning and development control: Planning for air quality (EPUK & IAQM, 2017). The approach to the detailed assessment of road traffic emissions will be consistent with Department for Environment, Food & Rural Affairs (Defra) Local Air Quality Management Technical Guidance: LAQM.TG22 (Defra, 2022) and the EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document (EPUK & IAQM, 2017).
The impact on ecological receptors arising from dust emissions generated by on-site construction and decommissioning (where receptors identified) landward of MHWS.	✓	×	✓	Activities required for the construction and decommissioning of the Landfall and Onshore Transmission Infrastructure (e.g. earthworks, vehicle track-out) would generate dust emissions which could result in adverse effects on ecological receptors.	The impact of deposited dust on ecological receptors will be assessed qualitatively, utilising a risk-based assessment to assess the potential impacts of dust generated by construction and decommissioning activities and the relative sensitivity of identified receptors. The risk-based assessment of dust will be undertaken in accordance with the IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024).
The impact on ecological receptors arising from air emissions generated by vehicles during construction and decommissioning (where receptors identified) landward of MHWS.	✓	×	✓	Additional vehicle movements required to facilitate construction and decommissioning of the Landfall and Onshore Transmission Infrastructure would generate air emissions (i.e. NO_x) which could result in adverse effects on ecological receptors.	An initial screening assessment as part of the EIA process and will be undertaken to identity areas which may require more detailed assessment of road traffic emissions. The screening assessment will use criteria set out in DMRB LA 105 – Air Quality (National Highways *et al.,* 2024) guidance and will be reported in the ES chapter.
The impact on human health and ecological receptors from air emissions generated by the back-up diesel generators at the Onshore Converter Stations.	N/A	✓	N/A	Emissions from the back-up diesel generators could result in adverse effects on human-health or ecological receptors.	An initial screening assessment will be undertaken to identify areas which may require more detailed assessment of back up diesel generator emissions. The screening methods will be based on Defra and EPUK & IAQM guidance.

Table 7.10.2: Impacts Proposed to be Scoped Out of the Assessment for Air Quality

Impact	Justification
All Phases	
Impacts on AQMAs	There are no AQMAs located within the Onshore Scoping Boundary. The closest AQMA is located 2.2 km to the east of the Onshore Scoping Boundary in the town of Boston, Lincolnshire. The Onshore Transmission Infrastructure will be located within the Onshore Scoping Boundary. Therefore, the nearest AQMA will be located outside of the study area distances defined in **section 7.10.2** for dust and vehicle emissions. No impacts on AQMAs would occur.
Impacts within the Intertidal Scoping Boundary	There is no pathway for impacts that could lead to significant effects within the intertidal zone. With respect to vehicle emissions, there are no highways in the intertidal zone that could experience material changes in traffic flows as a result of the Ossian Transmission Infrastructure. With respect to dust, there are no residential receptors in the intertidal zone and no ecological receptors that would be sensitive to dust deposition (such as Ancient Woodland). No significant effects from works in the intertidal (if required) are likely.
Construction and Decommissioning	
The impact on human and ecological receptors arising from air emissions generated by NRMM during the construction phase.	Defra's Local Air Quality Management Technical Guidance: LAQM.TG22 (Defra, 2022) states that '*experience of assessing the exhaust emissions from on-site plant (NRMM) and site traffic suggests that, with suitable controls and site management, they are unlikely to make a significant impact on local air quality. In the vast majority of cases they will not need to be quantitatively assessed …*' On the basis of the above, with suitable measures put in place for the operation of NRMM and implemented through the CoCP, it is considered that NRMM emissions on local air quality would likely be 'insignificant' and are proposed to be scoped out of the assessment for air quality as a result of no significant effect being likely to occur. Such measures will be developed taking into account the location of construction works, including compounds and based on the location of sensitive receptors. They will take into account the measures set out in paragraph 7.29 of LAQM.TG22.
Operation and Maintenance	
The impact on human and ecological receptors (dust soiling and human health) arising from fugitive dust emissions generated during operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	Activities associated with the operation and maintenance of the Onshore Transmission Infrastructure are unlikely to generate material quantities of dust. Operational maintenance activities would be limited in their nature and frequency and no further excavation or earthworks would be required. Therefore, the impact on human or ecological receptors arising from fugitive dust emissions generated during operation and maintenance of the Landfall and Onshore Transmission Infrastructure is unlikely to result in any significant effect and is proposed to be scoped out of the assessment for air quality.
The impact on human and ecological receptors arising from air emissions generated by vehicle traffic during operation and maintenance of the Landfall and Onshore Transmission Infrastructure.	With regard to vehicle emissions, typically operation and maintenance activities would not exceed ten vehicles per day (for periodic maintenance, likely to be one week once per year, a week of maintenance every three years and for occasional unscheduled maintenance – typically one to three days per month). As such, this falls well below the minimum threshold for detailed air quality assessment (25 heavy duty vehicles as an AADT flow or 100 light duty vehicles as an AADT flow) set out in the IAQM Land-Use Planning & Development Control: Planning for Air Quality (IAQM, 2017). Therefore, the potential impact on human or ecological receptors arising from air emissions generated by vehicle traffic during operation and maintenance of the Onshore Transmission Infrastructure is unlikely to be significant and is proposed to be scoped out of the assessment for air quality because of no significant effect being likely to occur.
The impact on human and ecological receptors arising from air emissions generated by plants or stacks during operation and maintenance of the Landfall and Onshore Export Cables.	The Landfall and Onshore Export Cables do not include proposals for the construction of any plant or emission stacks which could give rise to air emissions during operation. Therefore, no impact on human or ecological receptors arising from plant or stack emissions is possible and this is proposed to be scoped out of the assessment for air quality.

7.10.8 Proposed Assessment Methodology

7.10.8.1 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.10.1** is described below.

Legislation and Policy

7.10.8.2 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.10.8.3 The air quality assessment will be undertaken in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report, in addition to the following established guidance:

- Local Air Quality Management Technical Guidance (TG22) (Defra, 2022);
- Land-Use Planning & Development Control: Planning for Air Quality (IAQM and EPUK, 2017);
- Guidance on the assessment of dust from demolition and construction (IAQM, 2024); and
- DMRB LA 105 Air Quality (National Highways *et al*., 2024).

7.10.8.4 Although principally developed for the assessment of highway projects, the DMRB LA 105 Air Quality (National Highways *et al*., 2024) also provides guidance applicable to the assessment of other linear schemes, including the cable routes. In this case, the assessment of vehicle emissions at ecological sites will be undertaken in accordance with the DMRB guidance.

Assessment of Effects

7.10.8.5 Potential impacts on air quality will be assessed in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report, in addition to the topic-specific methodology outlined below. Further detail regarding the methodology to be used for the assessment of air quality effects will be provided as part of the air quality chapter of the PEIR and subsequent ES.

7.10.8.6 The approach to mitigation is set out in **section 5.7** of this EIA Scoping Report. Embedded (primary and tertiary) measures will be taken into account within the assessment for air quality. Where secondary measures are proposed, an assessment of the residual effect with these in place will also be presented.

Construction Dust

7.10.8.7 The potential impacts of dust and PM (PM_{10}, $PM_{2.5}$) generated during construction activities above MHWS will be assessed qualitatively using a risk-based approach, following the IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024). This methodology helps determine the unmitigated risk of construction dust and PM on both human and ecological receptors.

7.10.8.8 In line with the screening criteria set out in the IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024), the following sensitive receptors will be considered in the assessment of construction dust and PM.

- People and property located within 250 m of the construction work area for the Onshore Transmission Infrastructure.
- Ecological receptors sensitive to dust located within 50 m of the construction work area for the Onshore Transmission Infrastructure.
- Ecological receptors, people and property sensitive to dust located within 50 m of roads used by construction vehicles and up to 250 m of the entrance to the construction work areas for the Onshore Transmission Infrastructure.

7.10.8.9 Where significant adverse effects are likely to occur to sensitive receptors, suitable mitigation or compensatory measures will be identified.

Vehicle Emissions

7.10.8.10 With regard to vehicle emissions, consistent with DMRB LA 105 Air Quality (Highways England *et al.,* 2024) and Land-Use Planning & Development Control: Planning for Air Quality (IAQM and EPUK, 2017), sensitive receptors located within 200 m of the affected road network will be considered in the air quality assessment. IAQM guidance states that concentrations of air emissions originating from vehicles decrease with distance and beyond 200 m the road source contribution is not typically discernible from fluctuations in the background.

7.10.8.11 With regard to human receptors, an initial screening assessment will be undertaken to identify areas which may require more detailed assessment of road traffic emissions. The screening assessment will utilise screening criteria set out in the EPUK & IAQM Land-use planning and development control: Planning for air quality (2017) document. The screening process can be summarised as follows.

- **Stage 1**: Determine the extent of the affected road network by comparing onshore construction traffic flows against EPUK and IAQM thresholds:
  within or adjacent to an AQMA
  - if LDV flows change by more than 100 AADT; or
  - if HDV flows change by more than 25 AADT.

  outside of an AQMA
  - if LDV flows change by more than 500 AADT; or
  - if HDV flows change by more than 100 AADT.
- **Stage 2**: determine which human receptors within 200 m of an affected road may be exposed to vehicle emissions (as per the DMRB LA 105).
- **Stage 3**: where potential for relevant exposure exists within 200 m of an affected road, dispersion modelling may be undertaken to determine the extent of the affected areas and potential impacts of vehicle emissions on identified human receptors.

7.10.8.12 The approach to the detailed assessment of road traffic emissions will be consistent with Defra's Local Air Quality Management Technical Guidance: LAQM.TG22 (2022) and the EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality document.

7.10.8.13 With regard to ecological receptors, an initial screening assessment will be undertaken to identity areas which may require more detailed assessment of road traffic emissions. The screening assessment will use criteria set out in DMRB LA 105 – Air Quality (2024) guidance. The initial step involves a screening assessment to determine if construction activities associated with the Onshore Transmission Infrastructure are likely to:

- generate more than 1,000 AADT movements, including over 200 HDV movements, on a road link within 200 m of a sensitive ecological feature; and
- result in an increase of more than 1 % of a Critical Level and/or Critical Load.

7.10.8.14 The assessment of potential impacts on sensitive, internationally designated sites for nature conservation (e.g. SACs, SPAs, and Ramsar sites) will include consideration of other projects and plans in order to inform the EIA and HRA processes.

7.10.8.15 Where potential for relevant exposure exists within 200 m of an affected road, dispersion modelling may be undertaken to determine the extent of the affected areas and potential impacts of vehicle emissions of identified ecological receptors.

7.10.8.16 Where significant adverse effects are likely to occur to sensitive receptors, suitable mitigation or compensatory measures will be identified.

Significance of Effect

7.10.8.17 With regard to dust and PM, the significance of the effect will be determined in accordance with IAQM Guidance on the assessment of dust from demolition and construction (IAQM, 2024). With respect to vehicle emissions, the significance of the effect will be determined by EPUK & IAQM Land-use planning and development control: Planning for air quality (2017).

7.10.8.18 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.10.8.19 The CEA for air quality will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. The air quality chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.10.8.20 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** of this EIA Scoping Report presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on air quality are screened out from the EIA process.

Relevant Consultation

7.10.8.21 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Air Quality chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- South East Lincolnshire Councils Partnership (environmental health teams).

7.10.9 Next Steps

7.10.9.1 The following are proposed as next steps in relation to air quality.

- Taking into account feedback received as part of the Scoping Opinion, the siting and design of the Landfall and Onshore Transmission Infrastructure and subsequent dust and vehicle emissions study areas will be refined.
- The numbers of vehicles required to facilitate construction would then be established and the screening for human and ecological receptors would be undertaken.
- Depending on the outcome of the screening process, a decision would be made, with input from relevel local authorities (where required) as to the requirement for further dispersion modelling to be undertaken to determine to likely impacts on identified human or ecological receptors.

7.10.9.2 The outcome of the air quality assessment will be reported in the relevant chapter of the ES and supporting documentation.

7.11. Landscape and Visual Resources

7.11.1 Introduction

7.11.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for landscape and visual resources. The landscape and visual impact assessment (LVIA) will consider the likely significant effects on landscape and visual receptors that may arise from the construction, operation and maintenance and decommissioning of the Ossian Transmission Infrastructure landward of MLWS. Impacts in relation to the historic environment are considered in **section 7.6** of this EIA Scoping Report.

7.11.2 Proposed Study Area for the Assessment

7.11.2.1 It is accepted practice within landscape and visual assessment work that the extent of the study area for a development proposal is broadly defined by the visual envelope of the site and the anticipated extent of visibility arising from the development itself, based on the ZTV study. The study area will be defined as follows.

- Temporary impacts: The study area for these elements is defined as a 1 km radius around all land to be temporarily occupied during construction associated with the

Landfall, the Onshore Export Cable Corridor and any land required on a temporary basis for the Onshore Converter Stations, including temporary construction compounds. This is based on the nature of the temporary works, which require excavation, compounds and relatively small plant (low in height), such as excavators and construction vehicles. See **section 4** of this EIA Scoping Report for further construction details.

- Permanent impacts: Up to three Onshore Converter Stations form part of the Onshore Transmission Infrastructure. The study area is identified as a 5 km radius from land to be permanently occupied during operation and maintenance (based on a maximum 26 m high building). This study area would include the elevated areas of land within the Onshore Scoping Boundary. Beyond 5 km, views would be limited and no significant effects are likely.

7.11.2.2 It is anticipated that the study area will include all land as the land to be temporarily or permanently required for the Ossian Transmission Infrastructure landward of MLWS.

7.11.2.3 These buffers from the Landfall and Onshore Transmission Infrastructure are considered sufficient to capture any likely significant landscape or visual effects during the construction, operation and maintenance or decommissioning phases. It is considered unlikely that significant landscape or visual effects will occur beyond the limits of the study area.

7.11.2.4 The study area will be refined at the detailed assessment stage in consultation with relevant stakeholders, based on a reasonable worst case scenario, to ensure all likely significant effects are identified.

7.11.3 Baseline Environment

7.11.3.1 An outline of the baseline environment for landscape and visual resources within the Onshore Scoping Boundary and Intertidal Scoping Boundary based upon an initial review is provided below. An initial desk-based review has identified several data sources, which provide baseline data coverage within the Onshore Scoping Boundary and Intertidal Scoping Boundary. These data sources are listed below:

- published national and local landscape character assessments and studies;
- MAGIC, Natural England and Historic England websites and National Landscape (formerly Area of Outstanding Natural Beauty (AONB)) Management Boards defining nationally designated landscapes and Registered Parks and Gardens;
- Ordnance Survey 1:25,000 maps and definitive PRoW) maps and Access Land (as defined under the Countryside and Rights of Way Act 2000); and
- aerial photography.

7.11.3.2 Several statutory designated landscapes are located within the Onshore Scoping Boundary and Intertidal Scoping Boundary and are illustrated in **Figure 7.11.1**. The Lincolnshire Wolds National Landscape covers a wide tract of upland landscape and overlaps the Onshore Scoping Boundary. Registered Parks and Gardens at Gunby Hall (a National Trust property), Well Hall and Harrington Hall also lie within the Onshore Scoping Boundary and Intertidal Scoping Boundary.

7.11.3.3 Once the design of the Landfall and Onshore Transmission Infrastructure has been refined, the PEIR and the subsequent ES will provide details of the baseline conditions within the landscape and visual resources study area, including the following receptors.

- National and local landscape character areas, including statutory designated sites.
- Users of PRoW and areas of Access Land (as defined under the Countryside and Rights of Way Act 2000).
- Users of public open space and beaches.
- Other recreational users of land, such as those people involved in outdoor sports.
- Dynamic users of transport routes, including those people within vehicles as well as walkers, equestrians and cyclists.
- Occupiers of residential properties, where there is the potential for receptors to experience significant adverse effects. It is noted that, in addition, many views important to the community will be captured by the above and below representative viewpoint locations.
- Visitors to specific destinations, including publicly accessible Registered Parks and Gardens and other historic landscape assets.
- People within coastal marine locations, such as those on recreational yachts and those involved in water sports.

7.11.3.4 Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **section 7.11.4**.

Future Baseline Conditions

7.11.3.5 The EIA process will consider the existing baseline conditions within the study area, and future baseline conditions (as far as reasonably practicable) in accordance with the methodology set out in **section 5.5** of this EIA Scoping Report.

7.11.3.6 While it is possible that new developments, or consequences of climate change may occur in the future, predicting the exact nature or location of these changes is challenging. However, future developments will be considered in the assessment of cumulative effects and reported in the land use and recreation chapter of the ES.

7.11.3.7 No changes in statutory legislation are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.

7.11.4 Proposed Data Sources

Desk Studies

7.11.4.1 Data sources which provide baseline data coverage within the Onshore Scoping Boundary and Intertidal Scoping Boundary are summarised below.

- Published national and local landscape character assessments and studies.
- MAGIC, Natural England and Historic England websites and National Landscape (formerly AONB) Management Boards defining nationally designated landscapes and Registered Parks and Gardens.
- Ordnance Survey 1:25,000 maps and definitive PRoW maps and Access Land (as defined under the Countryside and Rights of Way Act 2000).
- Aerial photography.

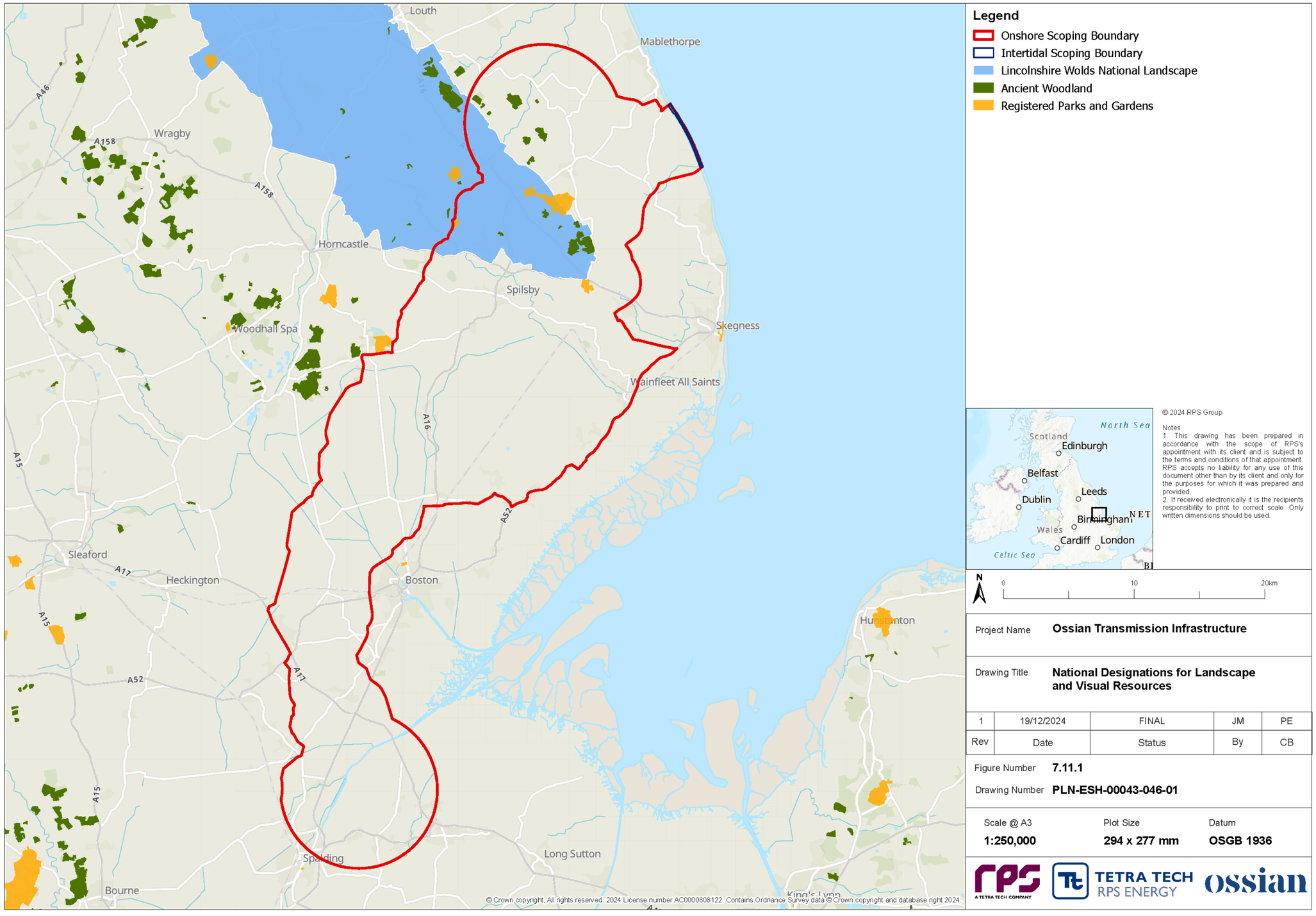


Figure 7.11.1: National Statutory Designations for Landscapes and Visual Resources

Site-specific Survey

7.11.4.2 Site visits have been undertaken in September 2024 to complete preliminary walkover and photographic surveys of the area to verify landscape character and identify potential visual receptors and to inform both the site selection process and this EIA scoping stage. Further site visits will be undertaken to select and take photographs from representative viewpoints once site options have been identified, at locations to be agreed with relevant stakeholders.

7.11.5 Mitigation Measures

7.11.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Site selection and micro-siting of the Landfall and Onshore Transmission Infrastructure (where practicable), including the Onshore Export Cable Corridor and Onshore Converter Station locations to avoid or reduce potential impacts on landscape character and visual amenity.
- Production of a CoCP – including measures to control impacts during construction, including control of temporary lighting and reinstatement of temporary earthworks associated with the Onshore Export Cable Corridor and temporary construction works areas. This would include measures to reinstate hedgerows and landscape features through which the Onshore Export Cable Corridor may pass. An Outline CoCP will be provided as part of the application for development consent.
- Production of a Landscape Management Plan – primarily in relation to the landscape proposals at the Onshore Converter Station sites that sets out the long term landscape management for land permanently affected. An Outline Landscape Management Plan will be provided as part of the application for development consent.
- Production of a Design Approach Document or equivalent, setting out the design principles for the Onshore Converter Stations. This will take into account, for example, the guidance set out in NPS EN-1 and EN-3 relating to the principles of good design.
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.11.5.2 The requirement for and feasibility of any mitigation will be dependent on the identified significance of effects and will be consulted upon with statutory consultees throughout the EIA process, for example, through ETGs and other technical meetings.

7.11.6 Proposed Scope of the Assessment

7.11.6.1 Potential impacts that are proposed to be scoped into the assessment for landscape and visual resources are set out in **Table 7.11.1**.

7.11.7 Impacts Proposed to be Scoped Out

7.11.7.1 Impacts that are proposed to be scoped out of the assessment for landscape and visual resources and the justification are set out in **Table 7.11.2**.

Table 7.11.1: Potential Impacts Proposed to be Scoped in for Landscape and Visual Resources

Impact	C	O	D	Description	Proposed Approach to Assessment
The temporary impact on landscape elements and character.	✓	×	✓	Construction: Activities required to facilitate the construction of the Landfall and Onshore Transmission Infrastructure, including temporary construction compounds, access roads and lighting, may result in direct and indirect impacts upon landscape character (elements and characteristics of landscape areas, types, designations). Decommissioning: Activities required to facilitate the decommissioning of the Onshore Converter Stations, including temporary construction compounds, access roads and lighting, may result in direct and indirect impacts upon landscape character (elements and characteristics of landscape areas, types, designations).	Construction: The impact of the construction activities on landscape character will be assessed in accordance with Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3) (Landscape Institute and Institute of environmental Management and Assessment (IEMA), 2013). The assessment will be informed by the ZTV, which will identify the extent of the landscape areas that may be impacted during construction. Decommissioning: The impact of the decommissioning activities associated with the Onshore Converter Stations on landscape character will be assessed in accordance with GLVIA3 (Landscape Institute and IEMA, 2013). The assessment will be informed by the ZTV, which will identify the extent of the landscape areas that may be impacted during decommissioning.
The temporary impact of the Landfall and Onshore Transmission Infrastructure on visual amenity.	✓	×	✓	Construction: Activities required to facilitate the construction of the Landfall and Onshore Transmission Infrastructure, including temporary construction compounds, access roads and lighting, may impact publicly accessible views from visual receptors including users of PRoW, Access Land, transport routes and other land and coastal marine recreational resources, and private views from occupiers of residential properties. Decommissioning: Activities required to facilitate the decommissioning of the elements of the Onshore Converter Stations, including temporary lighting, may impact publicly accessible views from visual receptors including users of PRoW, Access Land, transport routes and other land and coastal marine recreational resources, and private views from occupiers of residential properties.	Construction: The impact of the construction activities on visual receptors will be assessed in accordance with GLVIA3 (Landscape Institute and IEMA, 2013). The assessment will be informed by the ZTV, which will identify the visual receptors that may be impacted during construction. Decommissioning: The impact of the decommissioning activities associated with the Onshore Converter Stations on visual receptors will be assessed in accordance with GLVIA3 (Landscape Institute and IEMA, 2013). The assessment will be informed by the ZTV, which will identify the visual receptors that may be impacted during decommissioning. Construction and Decommissioning: Representative viewpoints at publicly accessible locations will be agreed with the relevant statutory consultees and the temporary impact to these views will be assessed. Potential impacts on more general views available by receptor groups would also be assessed.
The permanent impact of the Onshore Converter Stations on landscape elements and character.	×	✓	×	Activities required to facilitate the operation of the Onshore Converter Stations, including permanent lighting, may result in direct and indirect impacts upon landscape character (elements and characteristics of areas, types, designations).	The impact of the operation of the Onshore Converter Stations on landscape character will be assessed in accordance with GLVIA3 (Landscape Institute and IEMA, 2013). The assessment will be informed by the ZTV, which will identify the extent of the landscape areas that may be impacted during operation and maintenance.
The permanent impact of the Onshore Converter Stations on visual amenity.	×	✓	×	Activities required to facilitate the operation of the Onshore Converter Stations, including permanent lighting, may impact publicly accessible views	The impact of the operational activities associated with the Onshore Converter Stations on visual receptors will be assessed in accordance with GLVIA3 (Landscape Institute

Impact	C	O	D	Description	Proposed Approach to Assessment
				from visual receptors including users of PRoW, Access Land, transport routes and other land and coastal marine recreational resources, and private views from occupiers of residential properties.	and IEMA, 2013). The assessment will be informed by the ZTV, which will identify the visual receptors that may be impacted during operation and maintenance. Representative viewpoints at publicly accessible locations will be agreed with the relevant statutory consultees and the long term impact to these views will be assessed. Potential impacts on more general views available by receptor groups will also be assessed. The assessment of effects will be informed by wireline and rendered photomontages (where appropriate) to illustrate views of the Onshore Converter Stations.

Table 7.11.2: Impacts Proposed to be Scoped Out of the Assessment for Landscape and Visual Resources

Impact	Justification
All Phases	
The impact of construction, operation and maintenance and decommissioning of the Offshore Transmission Infrastructure on landscape and seascape character and visual resources.	No above sea level structures form part of the permanent Offshore Transmission Infrastructure. The only offshore component is the Offshore Export Cables located on the seabed. Vessels associated with cable laying would be visible as minor or barely discernible additions to views or seascape character within the context of existing vessels. Impacts on land based or coastal visual receptors are likely to be negligible in the context of existing vessel activity (a construction vessel would be typical in the existing view). Impacts arising from construction would be temporary. There would be no sea surface-piercing infrastructure present during the operation and maintenance phase. Effects would not be significant in terms of the methodology or distinguishable from the vessel activity required for construction of the Ossian Array which is the subject of a separate application (in comparison to which the activity required to install the Offshore Export Cables would be negligible). Therefore, the potential impact of the Offshore Export Cable laying activities on landscape/seascape character and visual resources during the construction and decommissioning phase is negligible and would not result in likely significant effects and is proposed to be scoped out of the assessment for landscape and visual resources.
The impact of construction, operation and maintenance and decommissioning of the Landfall and Onshore Transmission Infrastructure on landscape and seascape character and visual resources located beyond the landscape and visual study area.	The study areas are defined in **section 7.11.2**. As set out in that section, these buffers from the Landfall and Onshore Transmission Infrastructure are considered sufficient to capture any likely significant landscape or visual effects during the construction, operation and maintenance or decommissioning phases. It is considered unlikely that significant landscape or visual effects will occur beyond the limits of the study area. The potential impact of the Landfall and Onshore Transmission Infrastructure on landscape character and visual resources located beyond the landscape and visual study area during the construction, operation and maintenance and decommissioning phases is unlikely to result in significant effects and is proposed to be scoped out of the assessment for landscape and visual resources.
Operation and Maintenance	
The impact of operation and maintenance of the Landfall and Onshore Export Cables on landscape and visual resources.	The Landfall and Onshore Export Cables will be buried underground. Therefore, the potential impact of the Onshore Export Cables on landscape character and visual resources following construction would not result in likely significant effects and is proposed to be scoped out of the assessment for landscape and visual resources.
Decommissioning	
The impact of decommissioning of the Landfall and Onshore Export Cables on landscape character and visual resources.	Activities required to facilitate decommissioning of the Landfall and Onshore Export Cables are unlikely to result in significant effects on landscape character and visual resources. It is anticipated that only structures above ground level will require significant decommissioning activity. Therefore, the potential impact of the Landfall and Onshore Export Cables on landscape character and visual resources during the decommissioning phase is unlikely to result in significant effects and is proposed to be scoped out of the assessment for landscape and visual resources.

7.11.8 Proposed Assessment Methodology

Legislation and Policy

7.11.8.1 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.11.8.2 The following documents form the relevant guidance for landscape and visual resources.

- Guidelines for Landscape and Visual Impact Assessment: Third Edition. April 2013 (Landscape Institute and IEMA, 2013).
- Technical Guidance Note 06/19 Visual Representation of Development Proposals, September (Landscape Institute, 2019).
- Technical Guidance Note 02/21 Assessing landscape value outside national designations (Landscape Institute, 2021).
- An Approach to Landscape Character Assessment (Natural England, 2014).
- Technical Guidance Note LITGN-2024-01: Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and IEMA, 2024).
- Highways England *et al.* (2020e) DMRB LA108 Biodiversity.

Assessment of Effects

7.11.8.3 The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.11.1** is described below.

7.11.8.4 The principal objectives of the assessment of landscape character and visual resources in the ES will be as follows.

- To identify the existing landscape and visual resources that may be impacted during the construction, operation and maintenance and decommissioning of the Landfall and Onshore Transmission Infrastructure.
- To assess the likely significant effects on landscape and visual resources, taking into account the measures proposed to mitigate any of the potential impacts identified.

7.11.8.5 The assessment will be undertaken in accordance with established guidelines, principally the GLVIA3 (Landscape Institute and IEMA, 2013), and will consider the likely significant effects on the following sensitive receptors.

- Landscape features, elements and characteristics.
- Landscape character.
- Visual receptors (people) for whom the Landfall and Onshore Transmission Infrastructure might be visible during the construction, operation and maintenance and decommissioning phase.

7.11.8.6 As set out in GLVIA3, the landscape and visual impacts will be assessed separately. However, the procedure for assessing each of these aspects is closely linked. A clear distinction will be drawn between landscape and visual impacts as described below.

- Landscape impacts relate to the impacts of the elements of the Landfall and Onshore Transmission Infrastructure on the physical and other characteristics of the landscape and its resulting character and quality.
- Visual impacts relate to the impacts on publicly accessible views experienced by visual receptors (e.g., users of PRoW, open space or roads) and private views (e.g., occupiers of residential properties).

7.11.8.7 The temporary impacts of the construction and decommissioning phases and the long-term impacts relating to the operation and maintenance phase will be assessed. ZTVs will be generated to show the theoretical extent of visibility of the Landfall and Onshore Transmission Infrastructure within the landscape and visual study area.

7.11.8.8 Consideration will be given to the likely seasonal variations in the visibility of the elements of the Landfall and Onshore Transmission Infrastructure, including variations in weather conditions and deciduous vegetation. Where relevant, night-time impacts will be considered. Consideration will also be given to changes in the level of effects likely to take place as mitigation planting proposals mature and existing vegetation continues to grow. Photomontages will be prepared for a winter year 1 situation (worst case scenario) and a summer year 15 situation.

7.11.8.9 The assessment process will take into account the overall assessment methodology set out in **section 5.5** of this EIA Scoping Report, in addition to established guidance, such as GLVIA3. The assessment will be based on maximum design parameters in line with the overarching methodology set out in **section 5.5** of this EIA Scoping Report.

7.11.8.10 The assessment process will follow the approach set out in GLVIA3, regarding the identification of resource and receptor sensitivity (susceptibility and value), impact magnitude and evaluation of significance of effects.

Receptor Sensitivity

7.11.8.11 The criteria proposed to be used for defining the sensitivity of landscape and visual resources receptors are provided in **Table 7.11.3** below. These are based on the details set out in the GLVIA3 (Landscape Institute and IEMA, 2013) and the DMRB (Highways England *et al*, 2020e).

Impact Magnitude

7.11.8.12 The criteria to be used for defining the magnitude of impacts on landscape and visual resources are provided in **Table 7.11.4** below. These are based on the details set out in the GLVIA3 (Landscape Institute and IEMA, 2013) and the DMRB (Highways England *et al*, 2020e).

Significance of Effects

7.11.8.13 The significance of the effect upon onshore landscape and visual resources in terms of the EIA Regulations will be determined by taking into account the

sensitivity of the receptor and the magnitude of the impact. The matrix to be used in order to determine the significance of effect is presented in **section 5.5** of this EIA Scoping Report.

7.11.8.14 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effects with a significance level of major or above will be considered to be significant. Where the magnitude of impact is 'no change', no effect would arise.

7.11.8.15 In all cases, the evaluation of receptor sensitivity, impact magnitude and likely significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

Cumulative Effects and Inter-related Effects

7.11.8.16 The landscape and visual resources cumulative effect assessment will be undertaken in accordance with the methodology set out in **section 5.8** of this EIA Scoping Report and GLVIA3.

7.11.8.17 In accordance with GLVIA3, the types of cumulative effects that would be considered in the assessment of landscape and visual resources would include the following.

- Effects of extension to an existing development.
- Filling an area with the same development or different types of development over time.
- Interactions between different types of development.
- Incremental change as a result of successive individual development.
- Temporal cumulative effects.
- Indirect effects of development such as enabling other further development.
- Future actions that remove elements which may have consequences for other existing or proposed development.

7.11.8.18 Cumulative effects with other infrastructure projects, including proposed interconnectors will be considered, where relevant.

7.11.8.19 As set out in **Table 7.11.2,** no significant effects are likely to arise from the Offshore Transmission Infrastructure. It is therefore considered that there would be no pathways for the operation, maintenance and decommissioning of the Offshore Export Cables which could result in significant effects on seascape, landscape and visual resources cumulatively with the Landfall and/or Onshore Transmission Infrastructure or with other developments.

7.11.8.20 Therefore, it is proposed that the cumulative effects arising from operation, maintenance and decommissioning of the Offshore Export Cables together with the Landfall, Onshore Transmission Infrastructure and other projects are scoped out of the CEA for seascape, landscape and visual resources.

7.11.8.21 The landscape and visual resources chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report.

Transboundary Impacts

7.11.8.22 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on landscape and visual resources are screened out from the EIA process.

Relevant Consultation

7.11.8.23 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Landscape and Visual Resources chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- Natural England;
- East Lincolnshire Councils Partnership;
- Lincolnshire County Council; and
- Lincolnshire Wolds Countryside Service.

7.11.9 Next Steps

7.11.9.1 The following are proposed as next steps in relation to landscape and visual resources.

- An ETG will be set up for Landscape and Visual Resources (including PRoW). This will enable topic specific issues to be discussed with the relevant stakeholders.
- Site visits will be undertaken to complete walkover and photographic surveys of the Onshore Export Cable Corridors and Onshore Converter Station sites to verify landscape character and confirm potential visual receptors. Surveys and photography will be undertaken in summer when deciduous vegetation is in full leaf and in winter (worst case scenario) when deciduous vegetation is bare.
- Representative viewpoint locations will be agreed with relevant stakeholders through the ETG. Night-time photography, from selected representative viewpoints, may also be undertaken if deemed necessary in liaison with the relevant statutory consultees.

Table 7.11.3: Sensitivity Criteria

Sensitivity/ Value	Definition
Very High	**Landscape** • Value recognised by international or national designation. • The resource has very little ability to absorb change of the type proposed without fundamentally altering its present character and is of very high importance, rarity and value. **Visual** • Users of strategic recreational footpaths and cycleways; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas.
High	**Landscape** • Value recognised by national designation. • The landscape resource has little ability to absorb change of the type proposed without fundamentally altering its present character and/or is of high importance, rarity or value. **Visual** • Residents experiencing views from dwellings; users of strategic recreational footpaths/bridleways and cycleways; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas. Occupiers of vehicles in highly scenic areas or on recognised tourist routes.
Medium	**Landscape** • Value is recognised or designated locally. • The landscape resource has moderate capacity to absorb change of the type proposed without significantly altering its present character and/or is of medium importance, rarity or value. **Visual** • Users of pavements, footways and secondary footpaths in urban areas, and people engaged in outdoor sport or recreation e.g., horse riding or golf. Occupiers of vehicles in rural areas.
Low	**Landscape** • The landscape resource is tolerant of change of the type proposed without detriment to its character and/or is of low importance, rarity or value. **Visual** • People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity and who may therefore be potentially less susceptible to changes in view. Occupiers of vehicles whose attention may be focused on the road.
Negligible	**Landscape** • The landscape resource is tolerant of change of the type proposed without detriment to its character and/or is of low importance, rarity or value. **Visual** • People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity and who may therefore be potentially less susceptible to changes in view. Occupiers of vehicles in urban areas.

Table 7.11.4: Impact Magnitude Criteria

Magnitude of Impact		Definition
High	Adverse	**Landscape** • Total loss, or/very substantial loss or addition of key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of dominant, uncharacteristic elements compared with the attributes of the receiving landscape. **Visual** • The proposed change forms a dominant or immediately apparent feature that would significantly alter and change view.
	Beneficial	**Landscape** • Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of landscape quality. **Visual** • Large scale or major improvement of landscape character or view; extensive restoration or enhancement of quality.
Medium	Adverse	**Landscape** • Partial loss or addition of, or moderate alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of elements that may be prominent but would not be substantially uncharacteristic in comparison to the attributes of the receiving landscape. **Visual** • The proposed change forms a prominent new element that would affect and change the view.
	Beneficial	**Landscape** • Benefit to, or addition of, key characteristics, features or elements; improvement of landscape quality. **Visual** • Moderate scale improvement of landscape character or view; partial restoration or enhancement of quality.
Low	Adverse	**Landscape** • Minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline, i.e., pre-development landscape and/or introduction of elements that may not be uncharacteristic compared with the surrounding landscape. **Visual** • The proposed change constitutes only a minor component of view, which is recognisable, although might be missed by the casual observer. Awareness of the proposed change would not change the overall nature and character of the view.
	Beneficial	**Landscape** • Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on landscape or a reduced risk of negative impact occurring. **Visual** • Minor benefit to, or addition of, one (maybe more) key landscape characteristics, features or elements or improvement in quality of view due to partial restoration or enhancement.
Negligible	Adverse	**Landscape** • Very minor loss or addition of, or alteration to, one or more key elements/features/patterns of the baseline (i.e., pre-development landscape) and/or introduction of elements that are not uncharacteristic in comparison to the surrounding landscape; approximating to a ‘no-change’ situation. **Visual** • Only a very small part of the proposed change would be discernible, and/or it is at such a distance that it would be scarcely appreciated.

Magnitude of Impact		Definition
	Beneficial	**Landscape** • Very minor benefit to, or positive addition of one or more characteristics, features or elements. **Visual** • Very minor benefit to or positive addition of one or more landscape characteristics, features or elements.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

7.12. Health and Wellbeing

7.12.1 Introduction

7.12.1.1 This section of the EIA Scoping Report identifies the proposed scope of the assessment for health and wellbeing relevant to the Ossian Transmission Infrastructure landward of MLWS. The health and wellbeing assessment has key inter-relationships with the following topics, which will be considered appropriately where relevant in the EIA process:

- geology, hydrogeology and ground conditions (see **section 7.2**);
- hydrology and flood risk (see **section 7.3**);
- land use and recreation (see **section 7.7**);
- traffic and transport (see **section 7.8**);
- noise and vibration (see **section 7.9**);
- air quality (see **section 7.10**); and
- landscape and visual resources (see **section 7.11**).

7.12.1.2 Health and wellbeing in EIA takes a public health approach, meaning it reaches conclusions on population health outcomes, rather than the clinical health outcomes of individuals, the guidance that explains this approach is set out in **Table 7.12.5**. In so doing, the health and wellbeing assessment uses the residual effect conclusions of other relevant EIA topic assessments as an input and explains their public health implications. The terms health and wellbeing are used interchangeably, and parity is given to considering both physical and mental health outcomes.

7.12.1.3 This EIA Scoping Report uses the World Health Organization (WHO) definition of health, which states that health is a '*state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*' (World Health Organization, 2020).

7.12.1.4 This EIA Scoping Report also uses the WHO definition for mental health, which is a '*a state of mental well-being that enables people to cope with the stresses of life, to realize their abilities, to learn well and work well, and to contribute to their communities*' (WHO, 2022).

7.12.2 Proposed Study Area for the Assessment

7.12.2.1 The approach to scoping, including setting a geographic scope of health and wellbeing study areas, will follow the IEMA guidance 'Effective Scoping of Human Health in Environmental Impact Assessment' (Pyper *et al*., 2022a).

7.12.2.2 In EIA, the health and wellbeing assessment explains the public health implications of the conclusion of other relevant EIA topic assessments. Consequently, the human health assessment is informed by the study areas, zones of influence and receptors impacted or potentially impacted by other EIA topics. This enables the impacts on population health to be understood.

7.12.2.3 However, the study areas for these topics do not necessarily define the boundaries of potential population health effects. As such, the health and wellbeing assessment also defines human health study areas to characterise the representative population groups. As the relevant population varies depending on the determinant of health discussed, a range of health study areas will be used, as described below.

- **Site-specific health study area**: relevant wards will be selected when further information regarding the location of the Onshore Transmission Infrastructure is known. Three site-specific health study areas (landward of MLWS) will be defined for the assessment:
  - the site-specific population near the Landfall;
  - the site-specific population near the Onshore Export Cable Corridor; and
  - the site-specific population near the Onshore Converter Stations;
- **Local health study area**: Boston, East Lindsey and South Holland Local Authority Districts (which fall within Lincolnshire county);
- **Regional health study area**: East Midlands; and
- **National health study area**: England.

7.12.3 Baseline Environment

7.12.3.1 This section sets out an overview of the baseline conditions within the Onshore Scoping Boundary and Intertidal Scoping Boundary based on publicly available information. Details of the data sources to be used to inform the more detailed baseline of the study areas for the EIA are set out in **section 7.12.4**.

7.12.3.2 **Table 7.12.1** shows key public health indicators at the local, district, county, regional and national level. The indicators show the general state of health and the extent to which there are already pressures on the population's health.

7.12.3.3 A representative Lower Super Output Area (LSOA) (East Lindsey 006C) with the highest level of deprivation in the site-specific study area has been selected and used as a worst-case scenario for the health baseline profile at the scoping stage. Health baseline indicators at LSOA and local authority level are compared against regional and national averages.

7.12.3.4 Considering general health in the site-specific LSOA, most of the population is reported to be in very good or good health. 59.1% of people in East Lindsey 006C are reported to be in good to very good health, which is lower than the regional average of 81% and the national average of 82.2%. Conversely, 26.2% of the population are reported to be in fair health and 14.6% are reported to be in bad or very bad health, which is significantly higher than the national averages of 12.7% for fair health and 5.2% for bad to very bad health.

7.12.3.5 In the local health study area, most of the population are reported to be in very good or good health with less than 10% reporting to be in bad to very bad health. 79.2% of people in Boston, 73.6% in East Lindsey and 79.1% in South Holland are reported to be in good to very good health, which are all slightly lower than the regional average of 81% and the national average of 82.2%. Boston has a proportion of 15%, East Lindsey, 18.2% and South Holland, 15.2% of people who reported to be in fair health. This is slightly higher than the regional average of 13.6% and the national average of 12.7%. Only 5.8% of the population are reported to be in bad to very bad health in Boston, 8.2% in East Lindsey and 5.7% in South

Holland which are similar to the regional average of 5.4% and the national average of 5.2, with the exception of East Lindsey which is slightly higher than both regional and national averages.

7.12.3.6 Health life expectancy at birth for males and females (i.e., the average number of years a person can be expected to live in full health) is not reported for districts in the health wellbeing study area. However, in Lincolnshire County, healthy life expectancy is slightly lower (62.5 years) than the national average (63.1 years). Considering the average number of years a person is expected to live from birth, Boston has a life expectancy of 81.3 years, East Lindsey, 80.8 years and South Holland 83.0 years, which are all similar to the regional average of 82.4 years and the national average of 82.8 years.

Table 7.12.1: General Health Baseline

Characteristics	LSOA	District			County	Regional	National
	East Lindsey 006C	Boston	East Lindsey	South Holland	Lincolnshire	East Midlands	England
General Health							
Very good or good health (%)	59.1	79.2	73.6	79.1	79.3	81.0	82.2
Fair health (%)	26.2	15.0	18.2	15.2	14.9	13.6	12.7
Very bad or bad health (%)	14.6	5.8	8.2	5.7	5.8	5.4	5.2
Life Expectancy							
Healthy Life expectancy at birth for males (years)	n/a	n/a	n/a	n/a	62.5	62.0	63.1
Healthy Life expectancy at birth for females (years)	n/a	n/a	n/a	n/a	60.7	61.9	63.9
Life expectancy at birth for females (years)	n/a	81.3	80.8	83.0	82.6	82.4	82.8
Life expectancy at birth for males (years)	n/a	76.5	77.8	78.8	78.5	78.6	78.9
Preventable Mortality							
Under 75 mortality rate for all causes considered preventable (per 100,000)	n/a	199.7	199	174.2	171.7	170.1	163.7
Deprivation							
Index of Multiple Deprivation (IMD) for representative LSOA East Lindsey 006C	10% most deprived						

Source: Office for National Statistics (ONS, 2024)

7.12.3.7 The under 75 mortality rate from causes that are considered preventable is worse in Boston, East Lindsey and South Holland than the national average. Boston has an under 75 mortality rate from causes considered preventable of 199.7 per 100,000, which is higher than the regional average of 170.1 per 100,000 and the national average of 163.7 per 100,000. East Lindsey has a rate of 199.0 per 100,000 and South Holland has rate of 174.2 per 100,000, which are also higher than the regional average and the national average.

7.12.3.8 Using deprivation as a health resilience indicator, deprivation mapping shows pockets of deprivation within the study area, including LSOA East Lindsey 006C.

7.12.3.9 Relevant protected characteristics are listed in **Table 7.12.2** to consider the potential for any disproportionate effects that may arise due to the distribution of such characteristics within the population. Protected characteristics not shown in **Table 7.12.2** have been reviewed and are not considered to have relevant links to health outcomes that may be influenced by the Onshore Transmission Infrastructure.

7.12.3.10 Full baseline statistics for the study area will be set out in the human health chapter of the PEIR.

Table 7.12.2: Protected Characteristics Under the Equality Act 2010

Characteristics	LSOA	District			County	Regional	National
	East Lindsey 006C	Boston	East Lindsey	South Holland	Lincolnshire	East Midlands	England
Sex							
Female (%)	50.6	50.8	51.1	50.8	51.0	50.8	51.0
Male (%)	49.4	49.2	48.9	49.2	49.0	49.2	49.0
Age							
age 0 to 15 (%)	6.6	18.3	14.7	17.0	16.7	18.1	18.5
age 16 to 64 (%)	44.2	61.2	54.9	59.3	59.8	62.5	63.0
aged 65 and over (%)	49.1	20.4	30.4	23.9	23.4	19.4	18.3
Long term health problem or disability							
Disabled under the Equality Act (%)	35.2	17.8	25.0	18.8	20.1	18.3	17.3
Not disabled under the Equality Act (%)	64.8	82.2	75.0	81.2	79.9	81.7	82.7
Lower Income							
Income Deprivation (%)	30 most deprived nationally	12.8	16.2	10.3	12	12.2	12.9
Language proficiency							
Population who cannot speak English well or at all (%)	0.1	6.6	0.3	2.9	1.5	1.9	1.9
Ethnicity							
Asian, Asian British or Asian Welsh (%)	0.4	2.0	0.8	1.2	1.6	8.0	9.6
Black, Black British, Black Welsh, Caribbean or African (%)	0.7	0.7	0.2	0.5	0.6	2.7	4.2
Mixed or Multiple Ethnic groups (%)	0.4	1.4	1.0	1.3	1.3	2.4	3.0
White (%)	98.3	94.7	97.8	96.3	96.0	85.7	81.0
Other ethnic group (%)	0.1	1.2	0.2	0.6	0.6	1.3	2.2

Source: Office for National Statistics (ONS, 2024)

Site-specific Human Health Study Area (Representative LSOA)

7.12.3.11 The proportion of people aged 0 to 15 years in East Lindsey 006C is 6.6%, which is relatively lower than the regional average of 18.1% and the national average of 18.5%. The population aged 16 to 64 in East Lindsey 006C is 44.2%, which is lower than the regional average of 62.5% and the national average of 63%. The LSOA has a proportion of old aged people of 49.1% which is higher than the regional average of 19.4% and the national average of 18.3%.

7.12.3.12 Considering disability and limitations in daily activities, the proportion of disabled people who are limited in their day-to-day activities in East Lindsey 006C is 35.2%, which is higher than the regional average of 18.3% and the national average of 17.3%. The proportion of people with no disability or long-term condition in East Lindsey 006C is 64.8% which is lower than the regional average of 81.7% and the national average of 82.7%.

7.12.3.13 East Lindsey 006C is classified amongst the 30% most deprived nationally in income deprivation showing high levels of deprivation in the area.

7.12.3.14 Considering language proficiency, the proportion of the population in East Lindsey 006C who cannot speak English well or at all is 0.1%, which is lower than the regional and national averages of 1.9%.

7.12.3.15 In terms of ethnic background, most of the population in East Lindsey 006C is white, consistent with the regional and national averages. The proportion of people from a white ethnic background in East Lindsey 006C is 98.3% which is higher than both the regional average of 85.7% and national average of 81.0%. The proportion of people who are from minority ethnic backgrounds is much lower in East Lindsey 006C compared to regional and national averages, with the largest group (0.7%) being those from Black, Black British, Black Welsh, Caribbean or African ethnic

backgrounds, which is much lower than regional (2.7%) and national (4.2%) averages.

District Human Health Study Area

7.12.3.16 The proportion of people aged 0 to 15 years in Boston is 18.3%, which is similar to the regional (18.1%) and national (18.5%) averages. The proportion of the same age group in East Lindsey is 14.7% and 17% in South Holland, which are both lower than the regional and national averages. Similarly, the population aged 16 to 64 in Boston is 61.2%, 54.9% in East Lindsey and 59.3% in South Holland, which are all lower than the regional average of 62.5% and the national average of 63%. The proportion of elderly people in Boston is 20.4%, 30.4% in East Lindsey and 23.9% in South Holland, which are higher than the regional average of 19.4% and the national average of 18.3%. East Lindsey District has a notably high elderly population compared to the other districts in the study area.

7.12.3.17 The majority of the district study area population reported no disability or long-term condition. In Boston, 82.2% of people have no disability or long-term condition and 81.2% in South Holland which are both similar to the regional average of 81.7% and the national average of 82.7%. East Lindsey has a proportion of 75% which is lower than the regional and national averages. The proportion of those who are disabled people and limited in their day-to-day activities in Boston is 17.8% and 18.8% in South Holland which are both similar to the regional (18.3%) and national (17.3%) averages. East Lindsey has a proportion of disabled people of 25% which is higher than the regional and national averages.

7.12.3.18 Income deprivation is notably higher in the East Lindsey District, with a proportion of people in income deprivation of 16.2% compared to the national average 12.9%. Boston has a proportion of people in income deprivation of 12.8% which is similar to the regional average of 12.2 % and the national average of 12.9%. South Holland has a proportion of income deprivation of 10.3 % which is slightly lower than the regional and national averages.

7.12.3.19 Considering language proficiency, Boston has a proportion of the population who cannot speak English well or at all of 6.6%, which is significantly higher than the regional and national averages of 1.9%. Similarly, South Holland has a proportion of 2.9%, which is higher than the regional and national averages. East Lindsey has a proportion of 0.3%, which is lower than the regional and national averages.

7.12.3.20 Most of the district study area population are of a white ethnic background, consistent with the regional and national averages. The proportion of people from a white ethnic background in Boston is 94.7%, 97.8% in East Lindsey and 96.3% in South Holland which are all higher than the regional average of 85.7% and the national average of 81.0%. The proportion of people who are of Asian, Asian British or Asian Welsh ethnic background in Boston is 2%, 0.8% in East Lindsey and 1.2% in South Holland which are significantly lower than the regional average of 8% and the national average of 9.6%. The proportion of those who are of Black, Black British or Black Welsh ethnic background in Boston, East Lindsey and South Holland is lower than the regional and national averages.

Future Baseline Conditions

7.12.3.21 Population health data presents a snapshot at a particular time. It is well recognised that population health is subject to continuing influences, both at the individual and community level. Influences may be environmental, such as seasonal variation in wellbeing and communicable diseases, they may also respond to socio-economic factors, such as migration and the availability of jobs.

7.12.3.22 Longer term trends and interventions in population health may influence the future baseline. Health and social care, public health initiatives and government policies aim to reduce inequalities and improve quality of life. The historic success of such interventions is increasingly challenged by national trends, such as an aging population, rising levels of obesity and the COVID-19 pandemic. The implications of COVID-19 for public health will take years to be reflected within statistical data releases, but it is expected that the pandemic will have exacerbated public health challenges. The pandemic disproportionately affected vulnerable groups, including due to age and ill-health.

7.12.3.23 Climate change may also exacerbate physical and mental health risk factors, particularly around flooding and extremes of temperature. The impacts of climate change including extreme temperatures, flooding, increase in atmospheric pollutants and drought are well documented.

7.12.4 Proposed Data Sources

Desk Studies

7.12.4.1 Data on health-related statistics would be sought to highlight key sensitivities at the local authority level and for representative wards. Key data sources for the human health assessment are set out below:

- Fingertips (OHID, 2024);
- 2021 Census (Office for National Statistics, 2021);
- IMD Maps from 2019;
- Lincolnshire Joint Strategic Needs Assessment;
- Lincolnshire Joint Health and Wellbeing Strategy 2024; and
- Google Earth Pro aerial and street level photography review.

Site-specific Surveys

7.12.4.2 The health assessment will draw on other topic chapters of the ES, where required. No specific surveys are considered necessary.

7.12.5 Mitigation Measures

7.12.5.1 At this stage, the following measures are proposed to be adopted. These measures may evolve (and be further refined) as the design and EIA process progresses.

- Mitigation measures set out in the section on Geology, Hydrology and Ground conditions, including avoidance of impact through design by selecting options that avoid, where practicable as a starting point, sensitive features or constraints (such

as historical landfills) and pollution prevention measures as part of the CoCP (see **section 7.2**).

- Mitigation measures to maintain access to PRoW during construction, which will be set out in a PRoW Management Plan, in line with the Outline PRoW Management Plan, which will be provided as part of the application for development consent (see **section 7.7**).
- Production of a CTMP, in line with the Outline CTMP, which will be provided as part of the application for development consent (see **section 7.8**).
- Production of a CoCP in line with the Outline CoCP, which will be provided as part of the application for development consent. This will include:
  - measures to control construction noise and vibration (see **section 7.9**); and
  - dust management measures (see **section 7.10**).
- Preparation of a Landscape Management Plan, in line with the Outline Landscape Management Plan, which will be provided as part of the application for development consent (see **section 7.11**).
- With respect to decommissioning, potential impacts would be mitigated through measures included in the Onshore Decommissioning Plan.

7.12.5.2 The mitigation requirements for health and wellbeing will be discussed with relevant local authorities, where required, as part of the ETG prior to submission of the application.

7.12.6 Proposed Scope of the Assessment

7.12.6.1 Potential impacts that are proposed to be scoped into the assessment for health and wellbeing are set out in **Table 7.12.3**.

7.12.7 Impacts Proposed to be Scoped Out

7.12.7.1 Impacts that are proposed to be scoped out of the assessment for health and wellbeing and the justification are set out in **Table 7.12.4**.

Table 7.12.3: Potential Impacts Proposed to be Scoped in for Human Health

Impact category	Wider Determinants of Health (Impact)	C	O	D	Proposed Approach to Assessment
Social environment	Transport modes, access and connections	✓	×	×	Construction associated with the Onshore Transmission Infrastructure has the potential to result in temporary disruption to the local road network and active travel opportunities (footpaths and cycle paths along or adjacent to the highway). Informed by the traffic and transport assessment, the health assessment will consider the likely significant population health effects due to changes in health-related journeys, road safety and active travel opportunities. The assessment will consider the site-specific and local health study areas.
	Open space, leisure and play	✓	×	×	Construction activities associated with the Onshore Transmission Infrastructure have the potential to result in temporary disruptions to open space, leisure facilities and recreational amenities in the area. This includes works at the beach/coast at Landfall and inland activities associated with installation of the Onshore Export Cables and construction of the Onshore Converter Stations. Impacts may include those on PRoW arising from temporary works, construction compounds and temporary accesses. Informed by the land use and recreation assessment, the human health assessment will consider the likely significant population health effects due to changes in access to open space, leisure and play opportunities.
Economic environment	Employment and income	✓	×	×	The Onshore Transmission Infrastructure will provide opportunities for employment during construction Informed by the socio-economic assessment, the human health assessment will consider the likely significant population health effects of direct and indirect employment, including opportunities to enhance benefits for local and vulnerable groups. The assessment will consider the regional health study area.
Bio physical environment (for physical health please see **Table 7.12.4).**	Air quality	✓	×	×	Construction activities and vehicle movements associated with the Onshore Transmission Infrastructure have the potential to cause changes in dust exposure and exposure to air pollutants (particularly NO_2, $PM_{2.5}$ and PM_{10}), which may affect respiratory and cardio-metabolic outcomes. This potential impact could affect residents and long-term occupiers of nearby properties and community buildings. Informed by the air quality assessment, the human health assessment will consider the likely significant population health effects due to changes in dust and air quality. UK statutory limits, i.e. health protection standards, will be used as a benchmark. The potential for non-threshold health effects of some air pollutants will be discussed and taken into account. The assessment will consider the site-specific health study areas.
	Noise and vibration	✓	×	×	Construction activities associated with the Onshore Transmission Infrastructure have the potential to generate noise and vibration from activities and vehicle movements, which may affect mental wellbeing, sleep disturbance and educational outcomes. This potential impact could affect residents and long-term occupiers of nearby properties and community buildings. Informed by the noise and vibration assessment, the human health assessment will consider the likely significant population health effects due to changes in daytime and night-time noise and vibration. UK regulatory standards will be used as a benchmark. The assessment will consider the site-specific health study areas.
Social environment	Community identity (Onshore Converter Stations)	×	✓	×	Operation of the Onshore Converter Stations has the potential to result in visual changes that could influence wellbeing. Informed by the landscape and visual assessment, the human health assessment will consider the likely significant population health effects due to changes in views, including lighting, experienced by residential dwellings as a consequence of the Onshore Converter Stations. This includes consideration of cumulative effects with other similar projects. The assessment will consider the site-specific health study area of the population near the Onshore Converter Stations. Other aspects of the Onshore Transmission Infrastructure will not produce sufficient visual change to have the potential for widespread health likely significant effects, for example as the Onshore Export Cables are underground. These are scoped out as discussed in **Table 7.12.4.** .
Bio physical environment	Noise and vibration (Onshore Converter Stations)	×	✓	×	Operation of the Onshore Converter Stations has the potential to result in noise impacts to nearby residents and users of recreational and community facilities. Informed by the noise and vibration assessment, the human health assessment will consider for the likely significant population health effects due to changes in daytime and night-time noise and vibration. UK regulatory standards will be used as a benchmark. The assessment will consider the site-specific health study area of the population near the Onshore Converter Stations. Other aspects of the Onshore Transmission Infrastructure will not produce sufficient noise emissions during this phase to have the potential for widespread health

Impact category	Wider Determinants of Health (Impact)	C	O	D	Proposed Approach to Assessment
					effects, as maintenance of the Onshore Export Cables would be very limited in scale and nature. These are scoped out as discussed in **Table 7.12.4.**
	Understanding of risks associated with Electromagnetic Fields (EMF)	×	✓	×	As discussed in **Table 7.12.4** the actual risks of EMF associated with the operation of the Onshore Transmission Infrastructure would be avoided through the Applicant committing to adopt the relevant provisions of the International Commission on Non-ionizing Radiation Protection (ICNIRP) (ICNIRP, 1998, 2010) guidelines and Government voluntary Code of Practice on EMF public exposure (Department for Energy Security & Net Zero, 2012). The Onshore Transmission Infrastructure electrical infrastructure, including Onshore Export Cables and Onshore Converter Stations, may however lead to community concerns, influencing the mental health for some residents in the local area. The human health assessment will consider the likely significant population health effects due to changes in understanding of risks associated with EMF. It is noted that reducing such risks can be achieved through providing information to the public that the Ossian Transmission Infrastructure would meet the UK health protection standards, as set out in the ICNIRP 1998 and 2010 guidance. In line with good practice, this EIA Scoping Report therefore forms part of that early communication and the health and well-being assessments in the PEIR and ES will provide further information that the relevant safety standards will be delivered through the detailed design and engineering of the Onshore Transmission Infrastructure.
Institutional and built environment	Wider societal infrastructure	×	✓	×	During operation, the Ossian Transmission Infrastructure would provide the connection to the electricity transmission system for the Array which would generate up to 3.6 GW of renewable energy that indirectly supports many aspects of public health. A reliable supply of electricity is required in relation to factors including population food safety, thermal comfort, healthcare, learning, income generation and social networking. The human health assessment will consider likely significant population health effects due to improved UK energy security as a significant beneficial protective factor for public health. The assessment will consider the national health study area.

Table 7.12.4: Impacts Proposed to be Scoped Out of the Assessment for Human Health

Impact category	Wider Determinants of Health (Impact)	Justification
Construction and Operation and Maintenance		
Health related behaviours	Physical activity	**Construction**: Potential for temporary disruption of access to PRoW and open spaces during construction, potentially affecting recreational activities and physical activity levels will be considered under 'Open space, leisure and play' as described in **Table 7.12.3**. In addition, workforce health promotion will also be considered (as is good practice) as described under the 'Health and social care services' determinant below. To avoid duplication, a separate assessment of physical activity, including workforce health, is proposed to be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** No additional disruption to PRoW or open spaces would occur during the operation and maintenance of the Onshore Transmission Infrastructure. In addition, the extent of the operational workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be as set out in **section 4.8.2** and workforce health promotion considered as good practice. Therefore, a separate assessment of physical activity, including workforce health is proposed to be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.

Impact category	Wider Determinants of Health (Impact)	Justification
	Risk-taking behaviour	**Construction**: It is likely that interactions of the construction workforce with the public would be minimal (as they would be working on site). The workforce is unlikely to be sufficiently large in number to affect local markets (e.g. for alcohol, cigarettes or gambling) to an extent which could significantly affect community health. Healthy construction workforce behaviour would be encouraged through health and safety management systems with reference to the Health and Safety at Work Act, 1974 (HM Government, 1974). There is not considered to be the potential for a likely significant population health effect associated with risk taking behaviour by the workforces. In addition, the Applicant will operate appropriate measures to safeguard the construction workforce and the public in line with Government guidance of the day. On this basis, it is proposed that risk taking behaviour, including community health behaviours, population health effects and communicable illness will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** The extent of the workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be as set out in **section 4.8.2**. On this basis, it is proposed that risk taking behaviour, including community health behaviours will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Diet and Nutrition	**Construction/Operation and Maintenance**: Activities associated with the Onshore Transmission Infrastructure would not disrupt food related production or transport on a scale that could affect population health. In addition, construction, operation and maintenance of Onshore Transmission Infrastructure is not considered likely to affect the availability or price of food to a degree that could affect population health significantly. On this basis, it is proposed that diet and nutrition will be scoped out of the assessment for health and wellbeing during construction, operation and maintenance of the Onshore Transmission Infrastructure.
Social environment	Housing	**Construction**: No new housing is proposed or required to accommodate the construction workforce. The construction workforce will have housing requirements, but are not anticipated to be likely to move to work on the project, as the construction phase would be temporary (and much of the workforce may only work on a single element of the construction phase, which would be relatively short term). The workforce numbers have yet to be confirmed, however, it is assumed they would be similar to other recent offshore wind farm projects. Any temporary accommodation requirements by non-home based workers would be met through usual capacity within the region for B&B, hotel and short-term rentals. There is not considered to be the potential for a likely significant population health effect associated with this scale of change in the availability of housing. This includes having regard to short-term rental needs of education, health and social care key workers. On this basis, it is proposed that housing will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. Workforce assumptions will be reported in the socio-economics chapter of the ES. **Operation and Maintenance:** The extent of the workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be as set out in **section 4.8.2**. On this basis, it is proposed that housing will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Community identity, culture, resilience and influence	**Construction**: Temporary construction works and compounds for the Onshore Transmission Infrastructure, including Landfall, Onshore Export Cable Corridor and Onshore Converter Stations are not expected to be of a scale of visual impact that could affect population health outcomes. Construction activities are not considered to result in physical, social, amenity, economic or cultural changes in community identity that could be on a scale to significantly affect population health. This includes temporary and transient effects along the Onshore Export Cable Corridor, including due to temporary lighting and temporary changes in views. On this basis, the potential impacts on community identity, culture, resilience and influence are proposed to be scoped out of the health and wellbeing assessment during the construction of the Onshore Transmission Infrastructure. **Construction and Operation and Maintenance:** Lighting will follow standard good practice in relation to orientation, sighting and specificity of lighting, such that light exposures would not be on a scale that could have a likely significant effect on public health, including associated with circadian and sleep disturbance effects. On this basis, the potential impacts of lighting on community identity, culture, resilience and influence are proposed to be scoped out of the health and wellbeing assessment during the construction, operation and maintenance of the Onshore Transmission Infrastructure. However, as noted in **Table 7.12.3** above, the influence of night lighting on community identity is scoped into the assessment with respect to near distance views from residential properties close to the Onshore Converter Stations.

Impact category	Wider Determinants of Health (Impact)	Justification
		Operation and Maintenance: as noted in **Table 7.12.3** above, the influence of night lighting on community identity is scoped into the assessment with respect to near distance views from residential properties close to the Onshore Converter Stations. However, other operational influences on community identity, including Landfall, Onshore Export Cables, and other aspects related to Onshore Converter Stations (excluding night lighting), are not expected to have a likely significant effect on community identity, culture, resilience and influence. On this basis, the potential impacts of other operational influences on community identity, including Landfall, Onshore Export Cables, and other aspects related to Onshore Converter Stations (excluding night lighting) on community identity, culture, resilience and influence are proposed to be scoped out of the health and wellbeing assessment during operation and maintenance of the Onshore Transmission Infrastructure.
	Relocation	**Construction/Operation and Maintenance:** Construction, operation and maintenance of the Onshore Transmission Infrastructure would not involve compulsory land purchases of homes or residential dwellings. On this basis, the potential impacts of relocation are proposed to be scoped out of the health and wellbeing assessment during the construction, operation and maintenance of the Onshore Transmission Infrastructure.
	Community safety	**Construction**: Construction of the Onshore Transmission Infrastructure requires skilled technical roles. There are not anticipated to be community safety or security issues associated with worker behaviour in communities. The Applicant would operate appropriate safeguarding and modern slavery policies. The potential for widespread actual or perceived crime that could affect population health is unlikely. Where surface excavations are undertaken these would be within controlled work areas, including use of appropriate fencing and notifications as required. Best practice measures would be secured through suitable management plans. Electrical risks to the public would be avoided though the design, including fencing of above ground electrical infrastructure. These issues are therefore proposed to be scoped out. The potential for disruption and the safety of leisure users of the beach near the Landfall area will be assessed under the 'Open space, recreation, leisure and play' determinant scoped in in **Table 7.12.3**. On this basis, the potential impacts on community safety, including widespread actual or perceived crime, risk to the public from accidental injury and disruption and the safety of leisure users are proposed to be scoped out of the health and wellbeing assessment during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** Operation and maintenance of the Onshore Transmission Infrastructure will generate a limited number of additional vehicle movements on the highway network (see **Table 7.8.3**). On this basis, it is proposed that community safety will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Social participation, interaction and support	**Construction**: The Onshore Transmission infrastructure will seek to avoid where practicable land used for community interaction (e.g. meeting places, village greens, community centres, etc.) that promote community voluntary, social, cultural or spiritual participation. In the event that this cannot be avoided, the Applicant will seek to use trenchless techniques where practicable and will liaise with the operators of the facility to ensure disruption is reduced and limited in duration. Any such effects will be assessed in the land use and recreation chapter of the ES (see **section 7.7**). On this basis, it is proposed that social participation, interaction and support will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance**: No new or additional impacts on community facilities would occur during the operation and maintenance of the Onshore Transmission Infrastructure. On this basis, it is proposed that social participation, interaction and support will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
Economic environment	Education and training	**Construction**: Any upskilling and career development in relation to workforces would not be of a scale with the potential for significant population level effects. In addition, large influx of workers, including those bringing families, is not expected, so changes to educational capacity or quality are not anticipated during the construction phase. On this basis, it is proposed that education and training will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** The workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be minimal. On this basis, it is proposed that education and training will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.

Impact category	Wider Determinants of Health (Impact)	Justification
	Employment and income	**Construction**: Whilst employment opportunities are scoped in (see **Table 7.12.3**), including for effects to vulnerable groups, there are not anticipated to be other employment implications. Similarly, the Applicant's supply chain would be expected to operate appropriate policies that safeguard against significant population challenges to equality, health and safety, for both workers and, as appropriate, the public. In addition, the Applicant would operate appropriate employment equality policies but is not expected to influence how employment affects family structures and relationships in local populations. Occupational working conditions include risks that are appropriately managed through health and safety policies and practices. Construction activities are not expected to differ from industry norms. On this basis, it is proposed that employment and income will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** The workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be minimal. On this basis, it is proposed that employment and income will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
Bio physical environment	Climate change and adaptation	**Construction**: Embodied carbon and climate altering pollutant emissions during construction are noted and inherent to development; however, for a global population receptor they are not of a scale to have the potential for significant population level effects. An analysis of construction climate change impacts will be set out in the assessment of climate change in the ES (see **section 8** of this EIA Scoping Report). On this basis, it is proposed that climate change and adaptation will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance**: The renewable energy generation associated with the Array will be facilitated by the Ossian Transmission Infrastructure. This is noted as a benefit in terms of reducing the adverse effects of climate change, including for vulnerable groups globally. This issue will be considered under 'Wider societal infrastructure' as described in **Table 7.12.3**. To avoid duplication, it is proposed that climate change and adaptation will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Air quality	**Construction/Operation and Maintenance**: Odour effects, including from excavation or plant or vehicle emissions, are not anticipated to occur due to the nature of the development, which includes energy infrastructure only. On this basis, it is proposed that the effects of odour are scoped out of the assessment for health and wellbeing during construction, operation and maintenance of the Onshore Transmission Infrastructure. **Operation and Maintenance**: The Onshore Transmission Infrastructure is not expected to change air quality emissions, even accounting for non-threshold effects, that could affect onshore populations to a degree that there could be likely significant effects. On this basis, it is proposed that effects of air quality are scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Water quality or availability	**Construction/Operation and Maintenance**: There is potential for historic contaminants within sediments to be mobilised and new contaminants may also be accidentally released during a spill event. These contaminants could be released into surrounding water bodies affecting water quality. Impacts may relate to bathing water and potable surface and ground water (public and private supplies). The human health assessment relies on the water quality assessment (see **section 7.2**) undertaken to avoid new or historic contaminants reaching human receptors via water borne pathways. Appropriate mitigation, such as pollution control measures, which are to be implemented via the CoCP and Operational Drainage Strategy, will be included to break potential pollution linkage pathways to human receptors. These measures will effectively control water quality impacts together with the site selection process seeking to avoid areas of contamination where practicable. Temporary increases in non-harmful suspended sediment are unlikely to significantly affect population health. Effects to public drinking water infrastructure would be avoided or appropriate working methods agreed to reduce disruption of the existing water utilities network. On this basis, it is proposed that water quality or availability will be scoped out of the assessment for health and wellbeing during construction, operation and maintenance of the Onshore Transmission Infrastructure.
	Land quality	**Construction**: Ground disturbance activities during construction have the potential to mobilise historic contamination and construction activities have the potential to result in new accidental spills. Standard best practice contamination avoidance and response measures will be implemented to avoid accidental or historic contamination. These measures will be secured through management plans. For public health, the potential for community exposures relates to air and water pathways, with no potential for direct soils exposure for the public within the restricted worksite. The air and water pathways are separately considered under the Air Quality (dust) (see **section 7.10**) and Water Quality determinants (bathing and potable water) (see **section 7.2**). To avoid

Impact category	Wider Determinants of Health (Impact)	Justification
		duplication, it is proposed that land quality will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance**: No ground disturbance is expected during operation. Operational activities would be accompanied by standard spill avoidance and management protocols and response measures and controlled by the Outline Drainage Strategy. Consequently, it is proposed that land quality will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Radiation	**Construction**: Construction works would not include using, or making changes to, active major electrical infrastructure producing EMF. Relevant public and occupational safeguards, secured through management plans, would be followed for the temporary electrical equipment used. EMF strength reduce rapidly with distance, often requiring only a few meters separation between the source and receptor, to reach background levels. No ionising radiation sources are proposed. On this basis, it is proposed that radiation will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance**: The Applicant is required to be compliant with the Electricity Safety, Quality and Continuity Regulations 2002, which imposes requirements regarding the installation and use of electrical networks and equipment owned or operated by generators, distributors, and meter operators, and the participation of suppliers in providing electricity to consumers. It is Government policy to also comply with the ICNIRP guidelines (ICNIRP, 1998, 2010) and this is specified in NPS EN-5 (Department for Energy Security & Net Zero, 2023c). During operation and maintenance, the 'actual EMF' risks from electrical infrastructure are proposed to be scoped out on the basis that the Onshore Transmission Infrastructure would adopt the relevant public exposure limits set out by the ICNIRP guidelines (ICNIRP, 1998, 2010) and Government voluntary Code of Practice on EMF public exposure (Department for Energy Security & Net Zero, 2012). These guidelines are long standing and have a high safety margin. The levels of exposure that they require would not pose a risk to public health. Compliance with such health protection standards would be delivered through the detailed engineering design of the Onshore Export Cables, Onshore Converter Stations and other electrical infrastructure. For example, buried cables do not produce an electric field at the surface. Magnetic fields vary with design but are engineered to be ICNIRP compliant. In scoping for likely significant effects, the Onshore Transmission Infrastructure has had regard to Department of Health and Social Care advice on EMF exposures. The UK Health Security Agency guidance on reducing exposure to EMF was updated in March 2024 and state that '*measures to reduce fields, such as avoiding the routing of power lines near to homes, or not building homes close to power lines, are not needed'*. Notwithstanding this, the Applicant's site selection process will have specific regard to the proximity to residential properties and community buildings, such as schools. The Applicant would be responsible for monitoring compliance with the guideline limits set out in the ICNIRP guidelines (ICNIRP, 1998, 2010) and the UK Government voluntary code of practice (Department for Energy Security & Net Zero, 2012). Confirmation would be set out in post-consenting detailed engineering calculations, and if appropriate one-off confirmatory measurement of field strengths at the nearest relevant location, e.g. residential receptor, as set out in the Government voluntary Code of Practice. On this basis, it is proposed that radiation will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
Institutional and built environment	Health and social care services	**Construction**: The construction workforce will include specialists as well as subcontractors. It is assumed that all persons entitled to NHS treatment through nationality or residence will receive NHS care as required and all other personnel will be covered by health insurance provided by their employer. The expectation is that the great majority of healthcare needs of the construction workforce will be met by their usual healthcare provider. The Applicant will operate appropriate occupation health services and workers would have access to usual NHS 111 services for managing attendance at healthcare settings. The on-site workforces' healthcare support provision would, as a minimum, comply with the Health and Safety (First-Aid) Regulations 1981 and the UK Health and Safety Executive guidance L74 (Third edition) Published 2013 and updated in 2024. The Health and Safety (First-Aid) Regulations 1981 require employers to provide adequate and appropriate equipment, facilities and personnel to ensure their employees receive immediate attention if they are injured or taken ill at work. It is not expected that a high proportion of workers would move to the area with dependants requiring social care. Health protection measures such as screening and immunisations are expected to continue from the workers' usual place of residence. Similarly routine dental appointments

Impact category	Wider Determinants of Health (Impact)	Justification
		are assumed to be with the worker's dental practice close to their usual place of residence. Other health services are not expected to be affected as no largescale in-migration is expected and the workforce of skilled technical roles would return to their usual places of residence. See the 'Housing' determinant of health in relation to a workforce estimate and the linked issue of how the construction workforce accommodation is expected to be spread across a wide area, which would also indicate localised NHS pressures were unlikely. On this basis, it is proposed that health and social care services will be scoped out of the assessment for health and wellbeing during construction of the Onshore Transmission Infrastructure. **Operation and Maintenance:** The workforce required to facilitate operation and maintenance of the Onshore Transmission Infrastructure would be minimal. On this basis, it is proposed that health and social care services will be scoped out of the assessment for health and wellbeing during operation and maintenance of the Onshore Transmission Infrastructure.
	Built environment	**Construction/Operation and Maintenance**: Utilities disruption is unlikely as any crossing of existing power or communications cables or gas pipelines would be appropriately managed to avoid interruption, including through crossing agreements with respective parties. Appropriate waste management practices would be used. Construction activities are not anticipated to result in increases in pests during any of the phases. Significant population health implications are not anticipated and are scoped out. Generation of any hazardous waste or substances, including storage of chemicals would be managed in line with relevant regulatory regimes, including Control of Major Hazards (COMAH). On this basis, it is proposed that the built environment, including hazardous waste or substances will be scoped out of the assessment for health and wellbeing during construction, operation and maintenance of the Onshore Transmission Infrastructure.
Operation and Maintenance		
Social environment	Open space, leisure and play	**Operation and Maintenance**: No additional disruption to PRoW or open spaces would occur during the operation and maintenance of the Onshore Transmission Infrastructure. Therefore, the Onshore Transmission Infrastructure is unlikely to significantly affect physical, mental or social health aspects of community recreation. On this basis, the potential impacts on open space, leisure and play are proposed to be scoped out of the health and wellbeing assessment during the operation and maintenance of the Onshore Transmission Infrastructure.
	Transport modes, access and connections	**Operation and Maintenance**: Operation and maintenance of the Onshore Transmission Infrastructure will generate a limited number of additional vehicle movements on the highway network (see **Table 7.8.3**). It is unlikely that there would be significant population health effects due to changes in health-related journeys, road safety and active travel opportunities. On this basis, the potential impacts on transport modes, access and connections are proposed to be scoped out of the health and wellbeing assessment during the operation and maintenance of the Onshore Transmission Infrastructure.
Decommissioning		
All health determinants	All health determinants	Potential impacts associated with decommissioning of the Onshore Transmission Infrastructure would be lower than those arising during construction. The assumption is that cables would be removed without re-excavating the Landfall or the Onshore Export Cable Corridor. Impacts from decommissioning would be mitigated through measures included in the Onshore Decommissioning Plan. The main surface activity would be decommissioning of the Onshore Converter Stations. Such decommissioning activities are not considered to have the potential to give rise to levels of disruption or disturbance that could have likely significant effects on population health. On this basis, it is proposed that all health determinants will be scoped out of the assessment for health and wellbeing during decommissioning of the Onshore Transmission Infrastructure.
All Phases		
Offshore Transmission Infrastructure	All health determinants	The scope of the assessment set out in **section 7.12.6** of this EIA Scoping Report considers the following offshore topics, which may link to human health: • **section 6.7**: commercial fisheries; • **section 6.8**: shipping and navigation; and • **section 6.10**: infrastructure and other sea users.

Impact category	Wider Determinants of Health (Impact)	Justification
		As to avoid duplication, no further or separate assessment of offshore topics in relation to health and wellbeing is considered necessary. On this basis, it is proposed that offshore impacts on health and wellbeing will be scoped out of the assessment for health and wellbeing during construction, operation and maintenance of the Offshore Transmission Infrastructure.

7.12.8 Proposed Assessment Methodology

Legislation and Policy

7.12.8.1 An overview of relevant legislation and policy is provided in **section 2** of this EIA Scoping Report. Further details of topic-specific legislation and policy will be provided within the ES chapter.

Relevant Guidance

7.12.8.2 Relevant guidance that will inform the human health assessment are described **Table 7.12.5** below.

Table 7.12.5: Relevant Guidance for the Human Health Assessment

Guidance	Relevance
IEMA 2022 guidance on health in EIA series, effective scoping (Pyper, Lamming *et al*., 2022a) and determining significance (Pyper, Waples, *et al*., 2022b).	This is practitioner guidance on the coverage of human health in EIA for England, Wales, Scotland, Northern Ireland and the Republic of Ireland. This includes methods for determining population health sensitivity, magnitude and significance. This is the key methods citation.
Institute of Public Health, Guidance, Standalone Health Impact Assessment and health in environmental assessment (Pyper *et al.*, 2021)	This guidance sets current good practice for the assessment of human health in EIA, including assessment methods.
International Association for Impact Assessment and European Public Health Association. A reference paper on addressing human health in EIA (Cave *et al*., 2020)	This international consensus piece informed the Institute of Public Health 2021 guidance. The publication explains EIA for public health stakeholders and sets out transparent assessment approaches adopted by the Institute of Public Health.
International Association for Impact Assessment. Health Impact Assessment International Best Practice Principles, (Winkler *et al.,* 2021)	Confirms the relationship between Health Impact Assessment (HIA) and EIA. Confirms the application of HIA principles when undertaking health in EIA.
Public Health England. Advice on the content of Environmental Statements accompanying an application (Public Health England, 2021).	Public health considerations, including a wider determinants of health approach for applications under the Planning Act.
Public Health England, Health Impact Assessment in spatial planning (Public Health England, 2020).	The guidance confirms that where EIA is undertaken the requirements for HIA should be met through the EIA health chapter.

Assessment of Effects

7.12.8.3 The wider determinants of health and health inequalities are key considerations when undertaking an assessment of human health as part of the EIA process. The following population groups are present and would be considered:

- the 'general population' including residents, visitors, workers, service providers, and service users; and
- the 'vulnerable group population' including potential vulnerability due to:
  - young age;
  - older age;
  - low income;
  - poor health status;
  - social disadvantage; and
  - restricted access or geographic proximity to the Onshore Transmission Infrastructure activities.

7.12.8.4 The IEMA 2022 guidance 'Effective Scoping of Human Health in Environmental Impact Assessment' (Pyper, Lamming *et al.,* 2022a), Table 5.1 sets out a list of 21 determinants of health to consider during scoping. These will form the basis for the assessment. In so doing appropriate regard has been given to sub-population(s) with vulnerability due to:

- young age;
- older age;
- income or unemployment;
- health status;
- social disadvantage; and
- access or geographic factors.

7.12.8.5 The approach taken will meet the EIA human health requirements and aims to also proportionately meet requirements in relation to HIA. The assessment methodology proposed to be used for the impacts proposed to be scoped in as set out in **Table 7.12.3** is described below.

7.12.8.6 The wider determinants of health and health inequalities are key considerations when undertaking an assessment of human health as part of EIA. A population health approach will be taken, informed by discussion of receptors identified within other topic assessment considered as part of the EIA. For each determinant of health, the human health assessment will identify relevant inequalities through consideration of disproportionate or differential effects between the 'general population' of the study area and effects to the 'vulnerable population group' of that study area.

7.12.8.7 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. These criteria are to be applied in this assessment to assign values to the magnitude of potential impacts and the sensitivity of the receptors.

7.12.8.8 The methodology will use best practice as published by IEMA (Pyper, Waples*, et al.,* 2022), supported by relevant HIA and health in EIA guidance, listed in **Table 7.12.5** above.

7.12.8.9 The approach to sensitivity, magnitude and significance will follow the tabular methods set out by IEMA (Pyper, Waples, *et al*., 2022b).

Receptor Sensitivity

7.12.8.10 The criteria proposed to be used for defining the sensitivity of human health receptors are provided in **Table 7.12.6** below.

Table 7.12.6: Sensitivity Criteria

Sensitivity	Definition
High	High levels of deprivation (including pockets of deprivation); reliance on resources shared (between the population and the Onshore Transmission Infrastructure); existing wide inequalities between the most and least healthy; a community whose outlook is predominantly anxiety or concern; people who are prevented from undertaking daily activities; dependants; people with very poor health status; and/or people with a very low capacity to adapt.
Medium	Moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; a community whose outlook is predominantly uncertainty with some concern; people who are highly limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and/or people with a limited capacity to adapt.
Low	Low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; a community whose outlook is predominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring some care; people with fair health status; and/or people with a high capacity to adapt.
Very Low	Very low levels of deprivation; no shared resources; existing narrow inequalities between the most and least healthy; a community whose outlook is predominantly support with some concern; people who are not limited from undertaking daily activities; people who are independent (not a carer or dependant); people with good health status; and/or people with a very high capacity to adapt.

Impact Magnitude

7.12.8.11 The criteria to be used for defining the magnitude of impacts on human health receptors are provided in **Table 7.12.7** below.

Table 7.12.7: Impact Magnitude Criteria

Magnitude of Impact	Definition
High	High exposure or scale; long-term duration; continuous frequency; severity predominantly related to mortality or changes in morbidity (physical or mental health) for very severe illness/injury outcomes; majority of population affected; permanent change; substantial service quality implications.
Medium	Low exposure or medium scale; medium-term duration; frequent events; severity predominantly related to moderate changes in morbidity or major change in quality-of-life; large minority of population affected; gradual reversal; small service quality implications.
Low	Very low exposure or small scale; short-term duration; occasional events; severity predominantly related to minor change in morbidity or moderate change in quality-of-life; small minority of population affected; rapid reversal; slight service quality implications.
Negligible	Negligible exposure or scale; very short-term duration; one-off frequency; severity predominantly relates to a minor change in quality-of-life; very few people affected; immediate reversal once activity complete; no service quality implication.

Significance of Effect

7.12.8.12 The significance of the effect will be determined by taking into account the sensitivity of the receptor and the magnitude of the impact.

7.12.8.13 Where a range of significance levels is presented, the final assessment for each effect will be based upon expert judgement. For the purpose of the assessment, any effects with a significance level of moderate or above will be considered to be significant in terms. Where the magnitude of impact is ‘no change’, no effect would arise.

7.12.8.14 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect will be informed by professional judgement and underpinned by narrative to explain the conclusions reached.

7.12.8.15 In accordance with the IEMA guidance (Pyper, Waples, *et al*., 2022b), **Table 7.12.8** will be used to inform the determination of significance.

Table 7.12.8: Assessment Matrix

Sensitivity	Magnitude of Impact			
	Negligible	Low	Medium	High
Very Low	Negligible	Negligible	Negligible or Minor	Minor
Low	Negligible or Minor	Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor or Negligible	Minor or Moderate	Moderate or Major	Major

Cumulative Effects and Inter-related Effects

7.12.8.16 The CEA for health and wellbeing will follow the general methodology set out in **section 5.8** of this EIA Scoping Report. This will include cumulative likely significant effects on population health.

7.12.8.17 The health and wellbeing chapter of the ES will also consider inter-related effects arising from the Onshore Transmission Infrastructure, including potential project lifetime and receptor-led effects. This assessment will be undertaken in accordance with the standard industry guidance and approach, as outlined in **section 5.9** of this EIA Scoping Report. In particular, the human health assessment in the ES will consider the potential for population health to be influenced by inter-related effects between determinants of health.

7.12.8.18 In both cases the effects on vulnerable groups and health inequalities will be reported.

Transboundary Impacts

7.12.8.19 The approach to transboundary impacts is set out in **section 5.10** of this EIA Scoping Report. **Appendix 5.1** presents the transboundary impacts screening which has been carried out for the Ossian Transmission Infrastructure. As a result of this screening exercise, it is proposed that transboundary impacts and effects on health and wellbeing are screened out from the EIA process.

Relevant Consultation

7.12.8.20 The Applicant has undertaken introductory consultation with statutory consultees, including the Local Planning Authorities, through the Evidence Plan Process Steering Group, as described in **section 5.11** of this EIA Scoping Report. Topic-specific consultation will be undertaken via the Steering Group and the relevant Expert Topic Group to inform the Noise and Vibration chapter. The following stakeholders relevant to this chapter will be consulted via the Expert Topic Group meetings:

- South East Lincolnshire Councils Partnership Director of Public Health;
- UK Health Security Agency; and
- Office of Health Improvement and Disparities.

7.12.9 Next Steps

7.12.9.1 The following are proposed as next steps in relation to health and wellbeing.

- Seek agreement on scope and methods for the assessment of the Onshore Transmission Infrastructure.
- After submitting the EIA Scoping Report, the health site-specific study areas will be defined in response to the iterative design process for the Onshore Transmission Infrastructure.
- Upon receiving the EIA Scoping Opinion from the Planning Inspectorate, feedback from both statutory and non-statutory consultees will be used to guide the health assessment. This assessment will be detailed in the PEIR.
- Further work will be conducted to establish the population health baseline within the health study areas and qualitative analysis undertaken as to the magnitude of impacts on public health, informed by the residual effect conclusions of other EIA topic chapters. An evidence base will be complied, including local public health priorities, vulnerable groups and policy considerations, which will guide the professional judgments as to the significance of population health effects. These findings will be reported in the PEIR.
- It is anticipated that meetings will be held with the Lincolnshire County Council Director of Public Health, or nominated public health representative, and with the UK Health Security Agency and Department of Health and Social Care Office for Health Improvement and Disparities to discuss and agree the health assessment approach and to understand any additional local constraints or public health opportunities.