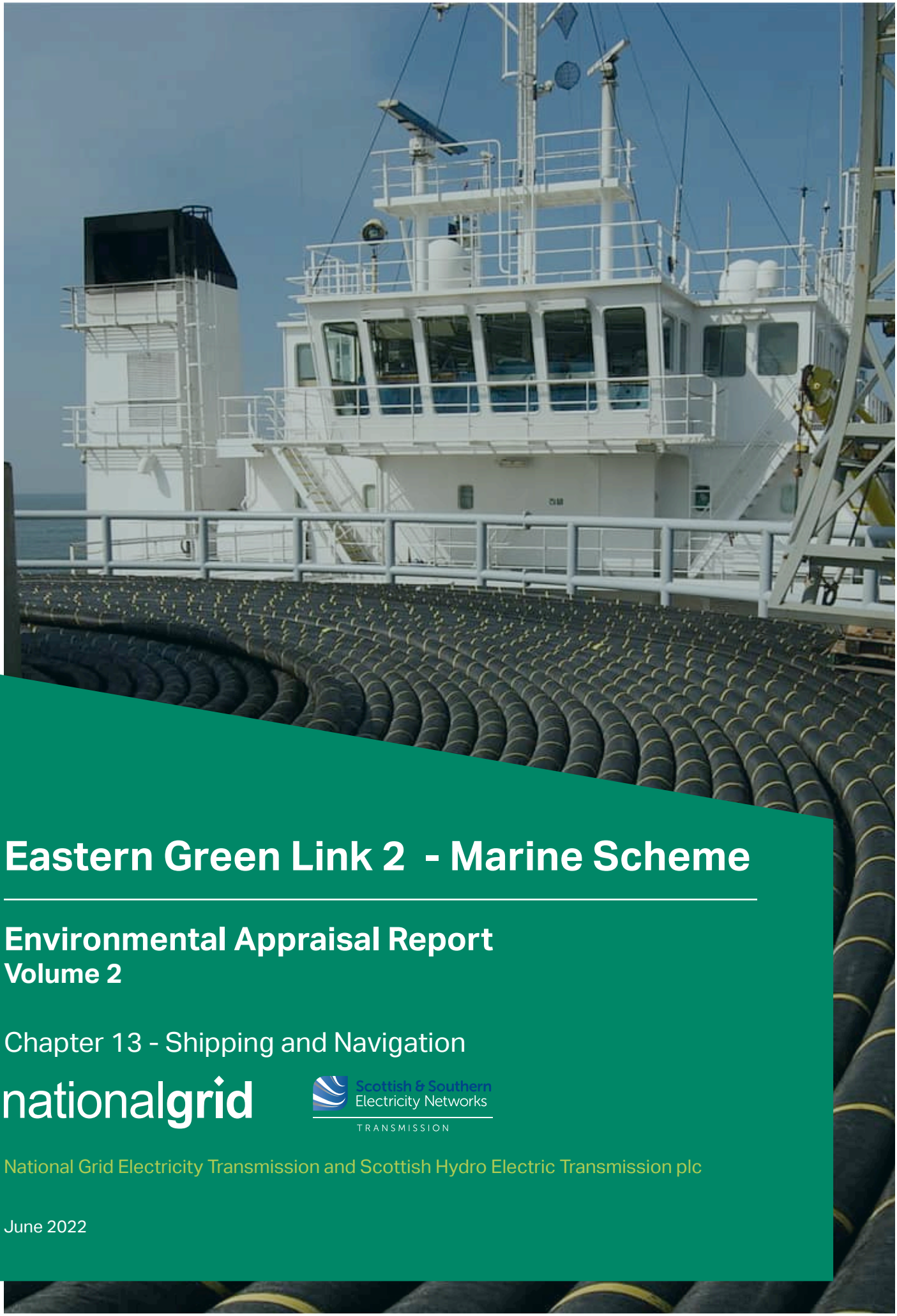

Eastern Green Link 2 - Marine Scheme

Environmental Appraisal Report
Volume 2

Chapter 13 - Shipping and Navigation

nationalgrid

Scottish & Southern Electricity Networks
TRANSMISSION

National Grid Electricity Transmission and Scottish Hydro Electric Transmission plc

June 2022

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Wessex Archaeology (Marine Archaeology); and

Brown and May Marine Ltd (Commercial Fisheries).

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13. Shipping and Navigation

13.1 Introduction

This chapter of this Environmental Appraisal Report (EAR) presents an appraisal of the potential interaction of the Marine Scheme with shipping and navigation, with the results presented as a Navigational Risk Assessment (NRA).

A description of the shipping and navigation baseline, as determined through desk-based research, primary data and consultation undertaken to support the Marine Scheme is presented in Section 13.5 of this chapter. Potential impacts of the Marine Scheme on shipping and navigation receptors are appraised in Section 13.6 for the Installation, Operation and Maintenance, and Decommissioning Phases as described in Chapter 2: Project Description. Where appropriate, proportionate measures to avoid, mitigate or compensate for any identified adverse effects are identified.

This chapter should be read in conjunction with Chapter 14: Commercial Fisheries and Chapter 15: Other Sea Users. The potential for interaction between the Marine Scheme and other plans/projects, which may result in significant cumulative effects, is considered in Chapter 17: Cumulative and In-Combination Effects.

13.2 Legislation, Policy and Guidance

This section outlines legislation, policy, and guidance relevant to the appraisal of the potential effects on shipping and navigation associated with Installation, Operation and Maintenance, and Decommissioning Phases of the Marine Scheme. For further information regarding the legislative context, refer to Chapter 3: Legislative and Policy Framework and Appendix 3.2: Topic Specific Legislation.

13.2.1 International Legislation

The following international legislation and agreements, to which the UK is a signatory concern the safe passage of territorial waters for shipping and other water users, during the planning and execution of projects such as offshore cable development in UK waters:

- International Regulations for Preventing Collisions at Sea (COLREGS) 1972/78 (IMO, 1972/78);
- United Nations Convention for the Law of the Sea (UNCLOS) 1982 (UN, 1982); and
- International Convention for the Safety of Life at Sea (SOLAS) 1974 (IMO, 1974) (as amended).

13.2.2 National Legislation

The following national and devolved legislation also include provisions for covering the safe passage for shipping and other water users, in UK waters:

13.2.2.1 UK (England and Scotland)

- Marine and Coastal Access Act (MCAA) 2009 (HM Government, 2009); and
- Submarine Telegraph Act 1885 (HM Government, 1885).

13.2.2.2 Scotland

- Marine (Scotland) Act 2010 (Scottish Government, 2010).

13.2.3 National Policy

The following national and devolved policies and plans include policies relating to the safe passage for shipping and other water users. Full details on how the specific policies within these policy and plan

documents relate to shipping and navigation are provided in Appendix 3.1: Marine Plan Compliance Checklist.

13.2.3.1 UK (Scotland and England)

- UK Marine Policy Statement (MPS) (HM Government, 2011).

13.2.3.2 Scotland

- Scottish National Marine Plan (2015) (The Scottish Government, 2015).

13.2.3.3 England

- North East Inshore and North East Offshore Marine Plan (HM Government, 2021); and
- East Inshore and East Offshore Marine Plan (HM Government, 2021).

13.2.4 Guidance

Best practice guidelines regarding the potential impacts of projects impact on the safe passage of shipping and other water users include:

- International Maritime Organisation (IMO) Revised Guidelines for Formal Safety Assessment (FSA) For Use In The IMO Rule-Making Process- MSC-MEPC.2/Circ.12/Rev.2 (09 April 2018) (IMO, 2018);
- Maritime and Coastguard Agency (MCA) MGN 654 (M+F) Offshore Renewable Energy Installations (OREI) safety response (MCA, 2021a);
- International Association of Marine Aids to Navigation (AtoN) and Lighthouse Authorities (IALA) Recommendation O-139 on the Marking of Man-Made Offshore Structures, Edition Two (IALA, 2013);
- IALA Guideline G1162, Edition 1.0, The Marking of Offshore Man-Made Structures, Dec 2021 (IALA 2021); and
- Maritime and Coastguard Agency (MCA) MGN 661 (M+F) Navigation – safe and responsible anchoring and fishing practices (MCA, 2021b).

13.3 The Study Area

The shipping and navigation study area comprises an indicative corridor of 10 Nautical Miles (NM) width along the Marine Scheme, as illustrated in Figure 13-1 (the Study Area). The Study Area is centred on the Marine Installation Corridor centreline, which runs from Sandford Bay near Peterhead, Scotland to Fraisthorpe Sands in England. The Marine Installation Corridor is approximately 436 km long with the first approximate 150 km of the corridor within Scottish waters and the remaining corridor (from KP150 to KP436) within English waters.

GIS: LM Checked: JA Approved: DB

FRASERBURGH HARBOR
PETERHEAD
ABERDEEN
METHIL
BURNTISLAND
GRANGEMOUTH
ROSYTH
LEITH
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

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260
280
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340
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Scale @ A3 1:1,500,000

Coordinate System: WGS1984 Zone 30N

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PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone

NOTES:
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TITLE
Figure 13-01
Shipping and Navigation Study Area

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1 of 1

DATE
28/04/2022

13.4 Approach to Appraisal and Data Sources

13.4.1 Appraisal Methodology

13.4.1.1 Overview

The environmental appraisal documented within this chapter was undertaken following a methodology that varies slightly from the methodology set out within Chapter 4: Approach to Environmental Appraisal. This is due to the specific requirements of the NRA process, in line with the relevant IMO and MCA guidelines, which deal with risk tolerability. The specific details of the approach adopted here are set out in this section. Overall, the identification and assessment of effects and mitigation are based on expert judgment following widely adopted risk assessment frameworks and informed by consultation responses from a range of stakeholders.

A non-statutory scoping report was submitted to and consulted on by the Marine Management Organisation (MMO) and Marine Scotland Licensing Operations Team (MS-LOT) earlier in the year[1]. The scoping report identified aspects of the Marine Scheme that have the potential to impact shipping and navigation receptors during the Installation, Operation and Maintenance, and Decommissioning Phases.

The NRA comprises two principal elements:

- Navigational Baseline; and
- Formal Safety Assessment (FSA).

To provide a detailed understanding of shipping activity in the Study Area, the Navigational Baseline has identified navigational features and patterns of vessel activity within the vicinity of the Marine Installation Corridor to establish baseline conditions and inform the subsequent FSA. Stakeholder consultation has also informed the baseline understanding of shipping in the area. The appraisal of potential impacts (Section 13.6) has identified and logged hazardous outcomes such as collision, snagging and disruption to shipping against risk categorisation, mitigation measures, and ultimately, acceptability.

These are explained in further detail in the following sections. The outcome of these steps is the formulation of recommendations to inform decision-making for all relevant parties. Further detail on each step is provided in the subsection below.

13.4.1.2 Navigational Baseline

The Navigational Baseline comprises the following four elements:

- Identification of key navigational features;
- Emergency response overview;
- Maritime incident analysis; and
- Marine Traffic Survey (MTS).

These elements are each described below.

Identification of Key Navigational Features

The Navigational Baseline identifies key navigational features within proximity to the Marine Installation Corridor including ports and harbours, anchorage areas, aids to navigation, military practice areas and recreational features, as well as planned and existing offshore infrastructure.

[1] The non-statutory scoping report is publicly available: https://marine.gov.scot/sites/default/files/segl2_el2_marine_scheme_non-statutory_scoping_report_eastern_link_2_marine_scoping_report_v5.0_finalcombined_ifi_-_issued_for_information_01_1_redacted.pdf

Emergency Response Overview
An overview of the emergency response in the region is described, considering Royal National Lifeboat Institution (RNLI) and Search and Rescue by Helicopter (SARH) resources in proximity to the Marine Installation Corridor.

Maritime Incident Analysis
Maritime incidents recorded by RNLI and SARH in the vicinity of the Marine Installation Corridor are reviewed. The presence of maritime incidents can give an indication of the general level of marine incident risk in this region.

Marine Traffic Survey
The MTS uses vessel traffic data including Automatic Identification System (AIS) and Vessel Monitoring System (VMS) data to establish baseline vessel traffic conditions in the Study Area (refer to Section 13.4.2.1), analysing such aspects as vessel type, size and status, as well as a section focussing on fishing traffic. A winter 2019-2020 and summer 2021 seasons of AIS data have been selected, and an additional summer 2019 season has been used to validate the use of summer 2021 in this appraisal. The data used in this MTS is discussed in detail in Section 13.4.2: Data Sources and Consultations.

13.4.1.3 Formal Safety Assessment

The FSA process provides a systematic method for evaluating and controlling risk, within a structured framework. Baseline shipping patterns and navigational features along with stakeholder consultation provide the basis for establishing potential hazards (or impacts). These hazards are then characterised in terms of their severity (or magnitude) and likelihood, which ultimately provides for risk categorisation against a risk matrix.

Additional control or mitigation measures are then identified to provide a reduction in risk where they are not initially determined as being broadly acceptable. The residual risk, with additional mitigation measures considered, is then assessed to determine risk acceptability in accordance with the principles of ALARP (As Low As Reasonably Practicable). Where necessary or appropriate, cost-benefit analysis of mitigation measures is undertaken to determine/justify an ALARP position. Cumulative effects and future case considerations are also considered to ensure suitable recommendations can be made. In summary, the FSA therefore comprises the following elements:

- Hazard identification;
- Risk assessment, considering existing mitigation measures;
- Identification of additional risk mitigation measures and resulting residual risk;
- Cost-benefit analysis; and
- Cumulative effects and future case considerations.

These elements are each described below:

Hazard Identification
Considering the activities of the Marine Scheme, baseline information provided in the MTS, consultation responses and professional judgement/industry experience, a list of impacts relevant to marine navigation was compiled through a desktop exercise.

The list was captured in a table and retained as an auditable hazard log. Hazards relating to separate Marine Scheme phases were identified. Hazards were identified according to a North to South order and in reference to KPs along the Marine Installation Corridor. The potential consequences or effects of the hazards and the likelihood of the outcomes were then assessed using a risk assessment matrix.

Risk Assessment
The risk assessment process is based on a classic matrix approach. This follows the Environmental Appraisal structured approach and terminology as outlined in Chapter 4: Approach to Environmental Appraisal. However, the risk assessment categorisations also directly reflect the UK Health and Safety Executive principles of ALARP and align with NRA terminology. Additionally, the approach is consistent with relevant marine guidance from the International Maritime Organisation (IMO, 2018) and the UK Maritime Coastguard Agency (MCA, 2021a). Each hazard/impact is individually evaluated against

specific criteria and assigned categories for 'severity of consequence' (Magnitude) as presented in Table 13-1 and 'frequency of occurrence' (Likelihood) as presented in Table 13-2. The Risk Matrix which combines them is included in Table 13-3.

The assessment of risk has been conducted in consideration of the embedded mitigation as detailed in Section 13.6.2.

Table 13-1: Severity of Consequence of Hazard / Impact Criteria

Severity / Magnitude	Criteria Description
High	Loss of a crew member, or multiple serious injuries Major/Severe damage to infrastructure or vessel
Medium	Serious injury to person Notable damage to infrastructure or vessel
Low	Minor injury(s) to person Minor/Local damage to equipment or vessel
Negligible	No significant operational impacts

Table 13-2: Likelihood Criteria

Likelihood	Criteria Description
Remote	Never occurred during Company's activities but has been known to occur in the wider industry.
Unlikely	Has occurred in Company's activities in the past but as an isolated incident under exceptional circumstance.
Occasional	Has occurred on more than one occasion during Company's activities in the past.
Likely	Occurs regularly during Company's activities.

The likelihood and consequence categories are combined for each hazard/impact using the risk matrix shown in Table 13-3, which is used to derive a risk tolerability level of either Unacceptable, Tolerable or Broadly Acceptable, with unacceptable or tolerable risks being considered to be significant in Environmental Appraisal terms. Definitions of each risk tolerability level are provided in Table 13-4.

Table 13-3: Risk Matrix

		Severity of Consequence / Magnitude			
		Negligible	Low	Medium	High
Frequency/ Likelihood	Likely	Broadly Acceptable	Tolerable	Unacceptable	Unacceptable
	Occasional	Broadly Acceptable	Tolerable	Tolerable	Unacceptable
	Unlikely	Broadly Acceptable	Broadly Acceptable	Tolerable	Tolerable
	Remote	Broadly Acceptable	Broadly Acceptable	Broadly Acceptable	Tolerable

Table 13-4: Tolerability Definitions

Tolerability	Definition
Broadly Acceptable (Low Risk - not significant)	Generally regarded as acceptable and adequately controlled. At these risk levels the opportunity for further reduction is limited.
Tolerable if ALARP (Moderate Risk - significant)	Typical of the risks from activities which people are prepared to tolerate to secure benefits. There is however an expectation that such risks are properly assessed, appropriate mitigation measures are in place, residual risks are as low as reasonably practicable (ALARP) and that risks are periodically reviewed to monitor if further controls are appropriate.
Unacceptable (High Risk - significant)	Generally regarded as unacceptable whatever the level of benefit associated with the activity. Significant risk mitigation or design modification required to reduce to tolerable (ALARP).

Identification of Additional Mitigation Measures

Where risks are assessed as being unacceptable or tolerable (significant) after factoring in the embedded mitigation measures already identified, further additional risk mitigation measures are identified and considered.

Cost-Benefit Analysis

To formulate recommendations for decision-making, any additional risk mitigation measures identified are subjected to a qualitative cost-benefit comparison in order to justify the measure and establish a residual risk categorisation and basic ALARP position.

Risk Assessment Table

The Risk Assessment outputs have been presented in a table, such that the hazards for each of the Marine Scheme phases and their associated mitigation measures (embedded and additional) are captured to provide a single auditable hazards and effects register.

Cumulative Effects and Future Case

Cumulative effects and future case have been included by review of future projects potentially affecting or influencing the study area and the wider general area and assumption of a general increase in traffic density.

A list of potential cumulative projects and activities has been compiled and includes windfarm extensions and offshore industry activities in the North Sea. Each hazard/impact has been qualitatively reviewed against the potential direct and indirect cumulative effects from any of the projects listed as well as general increases in traffic density.

Any issues have been captured, and further risk mitigation measures considered where deemed appropriate. It is noted that as a subsea cable, no surface infrastructure will remain following installation, aside from where cable protection is required, therefore no lasting cumulative effect is foreseen.

Cumulative and in-combination effects are discussed more widely within Chapter 16: Cumulative and In-Combination Effects.

13.4.1.4 Key terminology

Key terminology used in this Chapter are defined in Table 13-5 for reference.

Table 13-5: Definitions of key terminology

Term	Definition
Harbour	A harbour is defined by the Merchant Shipping Act 1995 as including ”estuaries, navigable rivers, piers, jetties and other works in or at which ships can obtain shelter or ship and unship goods or passengers”.
Port	A port is defined as “any port, terminal, offshore terminal, ship and repair yard or roadstead which is normally used for the loading, unloading, repair and anchoring of ships, or any other place at which a ship can call. The word also embraces, geographically, the city or borough which serves shipping interests” (IHMA & UKHO, 2019).
Anchorage	Defined by the UKHO as “an area of relatively uniform water depth with no cables, pipelines, or hazardous obstructions present on the seafloor in which vessels anchor or may anchor” (UKHO, 2020).

13.4.2 Data Sources and Consultations

13.4.2.1 Data Sources

Baseline conditions have been established by undertaking a desktop review of published information and through consultation with relevant organisations. An MTS has been undertaken and involved the acquisition of detailed AIS data for the Study Area.

The data sources used to inform the baseline description and assessment include:

- AIS data from 2019 and 2021 (avoiding the winter 2020-2021 time period, as this was disproportionately affected by the COVID-19 pandemic and therefore considered unrepresentative);
- VMS data;
- Marine Themes Administrative theme data sourced from OceanWise;
- Admiralty charts for the area, including 2182B, 1191, 0213;
- Maritime incident data in the area (RNLI 2008 - 2020, SARH April 2016 – March 2021);
- The Royal Yachting Association (RYA) UK Coastal Atlas of Recreational Boating;
- Port and harbour authority websites and documentation;
- Sailing Directions North Sea (West) Pilot; and
- Royal Northumberland Yacht Club Sailing Directions Pilot, 6th ed. (Royal Northumberland Yacht Sailing Club, 2021).

AIS Data

The IMO requires that all ships of ≥ 300 gross tonnage engaged on international voyages, cargo vessels of ≥ 500 gross tonnage not engaged on international voyages, and all passenger ships regardless of size built on or after 01 July 2002, are fitted with an AIS. All European Union (EU) registered fishing vessels of length 15 m and above are required to carry AIS equipment by EU directive. Smaller fishing vessels (below 15 m) as well as recreational craft are not required to carry AIS but a proportion do so voluntarily, as a result they are likely to be under represented in the AIS data.

AIS data has been used to assess the patterns and intensity of shipping activity in the study area. The recent COVID-19 pandemic may have affected shipping activity within the study area and as such underrepresent the true level of vessel traffic. To avoid possible abnormalities in vessel activity arising from the COVID-19 pandemic, AIS data was purchased for a winter period November 2019 - January 2020 (inclusive) and a summer period May - July 2021 (inclusive). The summer season was selected from 2021 on the recommendation of the MMO during the Scoping process. An additional pre-COVID summer season from 2019 was selected to validate the use of summer 2021, checking that the summer

2021 season is representative of typical vessel traffic and to identify patterns which could be as a result of the impact of COVID-19 or the UK's exit from the European Union on the 31 December 2020 ('Brexit').

The data therefore span the following time periods:

- 01/05/2019 to 31/07/2019 (summer 2019);
- 01/11/2019 to 31/01/2020 (winter 2019 – 2020 season); and
- 01/05/2021 to 31/07/2021 (summer 2021 season).

The AIS records were supplied with all standard parameters (longitude, latitude, vessel Maritime Mobile Service Identity (MMSI) number, status, speed, course, heading and timestamp) and the following additional parameters:

- Deadweight tonnage (DWT);
- Vessel length;
- Vessel draught; and
- Vessel type.

The AIS data was provided in a raw, point-based format, and was also converted into vessel tracks. The tracks were subsequently clipped to the 10 NM study area shown in Figure 13-1. Vessel density grids for the wider area were produced by overlaying a 5 square kilometres (km^2) hexagonal grid and determining the density of tracks within each cell. Vessel tracks were assumed to be wholly in the season or month in which the track started. Vessel speeds were calculated from the length of the track and the start and end times of that track.

Four vessels associated with the Eastern Green Link 2 Project were identified as working on the Marine Scheme and carrying out surveying during the summer 2021 season and were therefore removed from the summer 2021 data used in this appraisal. The vessels were the IEVOLI COBALT (MMSI 247363700), ALLEGIANCE (MMSI 234705000), HUMBER GUARDIAN (MMSI 235086528) and FORTH JOUSTER (MMSI 235067372).

VMS Data

As mentioned above, AIS is only a requirement for larger vessels, or those carrying passengers, whereas fishing vessels <15 m length are exempt (although many carry AIS voluntarily for safety). As such, AIS data can underrepresent fishing activity. However, the EU requires that all EU, Faroese and Norwegian fishing vessels of 12 m and above are fitted with a VMS. Vessel positions are transmitted every two hours rather than every few minutes as for AIS data, so tracks cannot be readily reconstructed. Nevertheless, the data provide an informative overview of the distribution and density of fishing vessels over 12 m.

Three sets of VMS data were obtained:

- Anonymised VMS point data for the area of interest for 2019 (no information on gear type or status, but vessel speeds can be used as a proxy for vessel fishing status, albeit with an inherent level of uncertainty);
- MMO sightings data 2011 to 2019 representing vessels sighted on surveillance flights and patrols; and
- Fishing activity by International Council for the Exploration of the Sea (ICES) statistical rectangle (this includes data about time spent fishing and gear type; 2016 - 2019).

Additional Data Sources

Due to the likely under representation of small recreational vessels in the AIS data, additional data sources including the RYA Coastal Atlas have been used to validate the findings of the AIS analysis. Additional analysis considers key navigational features and fishing activity. Key navigational features were extracted from additional sources of data including Admiralty charts and Pilot books. Maritime incident data from the RNLI and SARH from the MMO have been utilised to assess the emergency response in the region.

13.4.2.2 Summary of Consultations

Along with the submission of the scoping report, direct consultation and engagement with stakeholders has been undertaken. Full details of the consultation process and associated responses are presented in Chapter 6: Consultations and Stakeholder Engagement.

To inform the shipping and navigation appraisal, consultation with relevant maritime stakeholders (including those within the Study Area) has been undertaken to obtain supplementary information, which may not be available through the data sources outlined in Section 13.4.2.1 Data Sources. Two dedicated consultation sessions were held via Microsoft Teams as described in Table 13-6 were undertaken, each comprising the following elements:

- Introduction to team and summary of NRA process;
- Marine Scheme overview;
- Navigational baseline summary; and
- Facilitated preliminary hazards assessment workshop.

Table 13-6 Shipping and Navigation stakeholder meetings

Date	Location	Attendees
17/11/2021	Microsoft Teams	Maritime and Coastguard Agency (MCA) Northern Lighthouse Board (NLB) Trinity House (TH) Chamber of Shipping (CoS)
24/11/2021	Microsoft Teams	Peterhead Port Authority

In addition to the consultees listed in Table 13-6, the Royal Yachting Association (RYA), RYA Scotland and Cruising Association (CA) were provided with project information and invited to a consultation session. The RYA and RYA Scotland opted to provide a written response in lieu of a dedicated meeting. The CA have been informed of this decision and invited to provide further comment. Continuous engagement the both the RYA and CA will continue as the Marine Scheme progresses. Commercial Fisheries representatives have also been consulted (see Chapter 14: Commercial Fisheries). Full details on the consultation and how comments were addressed is provided in Chapter 6: Consultation and Stakeholder Engagement and its associated appendices.

Bridlington Harbour was also approached and invited to attend a consultation session but declined. Consultee input has been incorporated where appropriate into the NRA such that concerns, and impacts are recorded and addressed/minimised.

13.4.3 Data Gaps and Limitations

As noted in Section 13.4.2.1: Data Sources, the temporal extent of the AIS data used in this appraisal was selected to avoid the period considered to be most impacted by the COVID-19 pandemic. The summer 2019 season was selected as being pre-COVID, and the 2021 summer season was selected in response to the Scoping responses from the MMO and MCA. This means that the November 2020 to January 2021 time period has not been selected for use in this navigational baseline, additionally there may still be some impact of the COVID-19 pandemic on the seasons of data chosen.

As also noted in Section 13.4.2.1: Data Sources, small fishing and recreation vessels are likely to be underestimated in AIS data. To mitigate this, analysis of VMS data has also been included in this Chapter to capture a fuller picture of smaller fishing vessels and the RYA Coastal Atlas data supports the study of recreational activity in the region.

13.5 Baseline Conditions

This section covers the shipping and navigation baseline for the Marine Scheme. Shipping and navigation has been identified as a receptor for consideration by the Environmental Appraisal, due to potential interactions between existing vessel traffic and the Marine Scheme, particularly during the Installation Phase. It is therefore necessary to identify and assess the potential interactions, to

understand the impacts, identify possible mitigation measures and ultimately demonstrate that the project will not adversely affect vessel traffic.

13.5.1 Overview

The Marine Installation Corridor for the Marine Scheme runs parallel to the east coast of the UK, passing east of the Firth of Forth (containing the busiest ports in Scotland) and several major industrial and fishing hubs along the Scottish and English coasts including Aberdeen, Port of Tyne, Sunderland, Hartlepool and Teesport. The region also sees recreational vessel activity, particularly at Peterhead Port in Scotland and the English harbours of Whitby, Scarborough and Bridlington, and is also increasingly seeing its ports and harbours as bases for renewables projects both existing and currently under construction.

13.5.2 Key Navigational Features

13.5.2.1 Ports and Navigational Features

A chart of the main ports and harbours in the vicinity of the study area, as well as key navigational features is presented in Figure 13-2. The following navigational features have been considered:

- Anchorage areas;
- Pilot boarding;
- Navigational aids including buoys, beacons and navigation lines; and
- IMO routeing.

As Figure 13-2 shows, in Scottish waters the port of Peterhead lies within the study area, and as the Marine Installation Corridor crosses the Peterhead Port Authority between approximately KP1 and KP4, the Marine Scheme will require a Marine Works Licence. Although the Forth Ports harbour authority limits are outside the study area (at the closest point, 90 km to the west of the Marine Installation Corridor between approximately KP145 and KP175), Forth Ports will be a relevant port and harbour authority as much shipping traffic in the wider region will route to and from their facilities within the Firth of Forth.

In English waters, Bridlington Harbour falls within the study area and is approximately 3 km from the Marine Installation Corridor at the closest point at KP434.

The port and harbour authorities of Aberdeen, Port of Tyne, and Tees and Hartlepool do not fall within the study area (they are approximately 34 km, 55 km and 33 km away from the Marine Installation Corridor respectively), however much shipping traffic in the region will route to and from these locations and will intersect with the study area, and they are relevant for the Marine Scheme.

Details on ports and harbours within the study area are given below:

- Peterhead Port is a major supply base for the offshore oil and gas industry and the most important fishing port in the UK for white and pelagic species (UKHO, 2018). It also handles tankers, cargo and cruise ships (UKHO, 2018). Peterhead Bay, containing Peterhead Bay Marina, is protected by two breakwaters. A Vessel Traffic Service (VTS) with radar surveillance is maintained for the advice and organisation of shipping (UKHO, 2018). There is no anchoring permitted in Peterhead Bay or the Peterhead VTS area except in an emergency or as advised by the Harbour master or deputies (UKHO, 2018). Consultation with Peterhead Port found that vessels also anchor for shelter off Boddam, to the south of the Marine Installation Corridor. Consultation with RYA and RYA Scotland found that there is also a small harbour used by small fishing and recreational boats at Boddam on the south side of Sandford Bay; and
- Bridlington Harbour is a busy fishing harbour and the headquarters of the Royal Yorkshire Yacht Club (Royal Northumberland Yacht Sailing Club, 2021).

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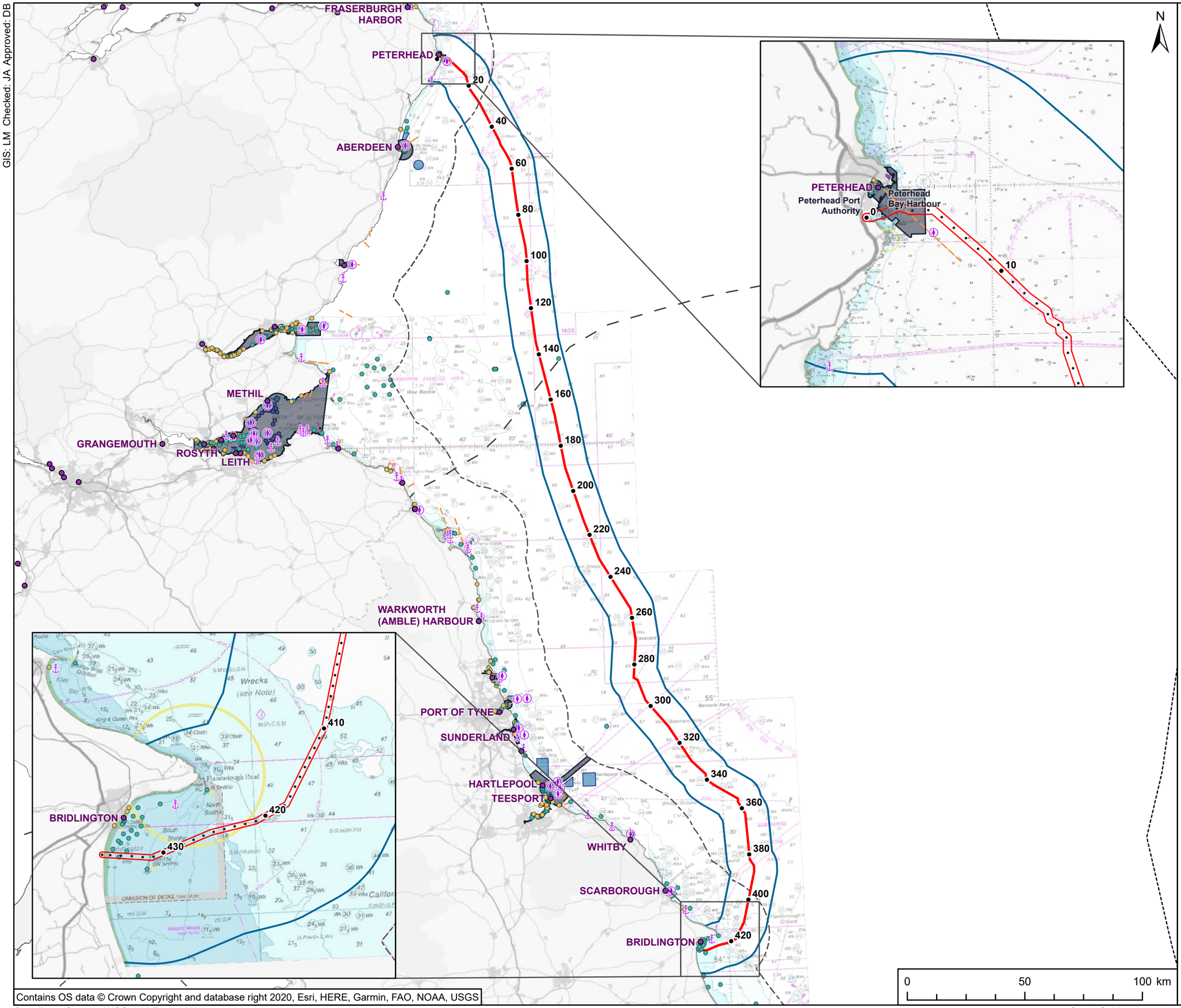

Coordinate System: WGS1984 Zone 30N

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PROJECT

Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone

Navigational features

- Anchorage area
- Pilot boarding place
- Beacon
- Buoy
- Charted navigational lines and routes
- Harbour area (administrative)
- Dock
- Anchorage

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TITLE

Figure 13-02
Ports and Navigation

REFERENCE

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SHEET NUMBER: 1 of 1

DATE: 28/04/2022

Additionally, details on ports and harbours outside of the Study Area which may be relevant are given below:

- Aberdeen Harbour is a major commercial port and also the most important base for the offshore oil and gas industry in north-west Europe (UKHO, 2018). A VTS is in operation for the control of shipping within port limits;
- Forth Ports operates five ports within the Firth of Forth: Grangemouth, Leith, Rosyth and the Fife ports of Burntisland, Kirkcaldy and Methil (Forth Ports, 2021). Grangemouth is Scotland's second largest port handling all types of vessels including container vessels, tankers and LPG carriers (UKHO, 2018) and its flow of cargo represents as much as 30% of Scotland's GDP and moves goods across a wide range of industries (Forth Ports, 2021);
- The Port of Tyne in a busy commercial deep-sea port, trading numerous cargoes including grain, coal, timber, oil, chemicals and aggregates. Passenger ferries and cruise ships also use the port and it is also used as a base for the offshore oil and gas industry (UKHO, 2018) as well as offshore wind (Port of Tyne Authority, 2021);
- The Port of Sunderland is a cargo handling port (UKHO, 2018) with deep water berths which has positioned itself as a potential offshore wind hub, and already supports Moray East Offshore Windfarm (Port of Sunderland, 2021);
- Hartlepool Port is a mid-sized commercial port, with facilities for platform and pipeline construction (UKHO, 2018). Hartlepool considers itself a renewable and oil and gas hub, and currently services the Teeside Offshore Wind Farm (PD Ports, 2021);
- Teesport is a busy port which is a major regional hub for the oil and gas industry (UKHO, 2018). Tees VTS is a Traffic Management and Information Service covers the Ports of Tees and Hartlepool as well as Tees and Hartlepool Bays (UKHO, 2018); and
- Scarborough Harbour is a small fishing and recreational harbour within Scarborough Bay (UKHO, 2018).

Scoping responses from the Scottish Chamber of Shipping identified anchor snagging risk as a main concern during construction of the Marine Scheme. This assessment confirms that there are no charted anchorage locations that intersect with the Marine Scheme in either Scottish or English waters. In Scottish waters there is a charted anchorage location within the Study Area approximately 10 km to the south west of the Marine Installation Corridor as shown in Figure 13-2. The RYA and RYA Scotland state that there is a temporary anchorage in Sandford Bay (to the south of Peterhead Bay) in about 3.5 m of water west of the sewage outfall buoy. However, the RYA and RYA Scotland note that it is unlikely that this is used much as it is subject to swell and dangerous in onshore winds. Within English waters, a charted anchorage location is present within the study area to the north east of the Marine Installation Corridor, approximately 3.2 km from the Marine Installation Corridor at the closest point at KP427 (Figure 13-2).

In terms of aids to navigation, in Scottish waters a Special Mark buoy in Sandford Bay falls within the Marine Installation Corridor approximately 0.26 km from KP1, additionally Buchan Ness lighthouse is located within the study area approximately 1.2 km to the south of KP1. The Marine Installation Corridor crosses the leading line identifying the recommended track into Peterhead Bay at approximately KP2.5. In English waters, two buoys associated with Bridlington Harbour fall within the Marine Installation Corridor between approximately KP434 and KP435, as well as a further buoys and beacons within the study area to the north of the Marine Installation Corridor (Figure 13-2).

There are no Traffic Separation Schemes (TSSs) or other routing measures in the vicinity of the Marine Scheme study area. The closest TSS is below Hull, to the south of the study area.

13.5.2.2 Military Practice and Exercise Areas

Figure 13-3 shows the military practice and exercise areas (PEXA), within the region and in proximity to the Marine Installation Corridor. There are a number of PEXA which overlap with the study area and Marine Installation Corridor, which are listed in Table 13-7.

In Scottish waters, four PEXAs overlap with the Marine Installation Corridor, namely: D613A, D613B, D613C and D613D, which are all Areas of Intense Aerial Activity (AIAA). In English waters, six PEXAs

overlap the Marine Installation Corridor, three of which are surface and firing danger areas, and three of which are Areas of Intense Aerial Activity (Table 13-7).

Table 13-7: Military Practice Areas.

Region	Name	Category	Distance from Marine Installation Corridor
Scottish waters	D613A	AIAA - Areas of Intense Aerial Activity	Direct overlap
	D613B	AIAA	Direct overlap
	D613C	AIAA	Direct overlap
	D613D	AIAA	Direct overlap
English waters	D513A: DRURIDGE BAY	Surface danger area, firing danger area	Direct overlap
	D513B: DRURIDGE BAY	Surface danger area, firing danger area	Direct overlap
	D323F	AIAA	Direct overlap
	D323A	AIAA	Direct overlap
	D323B	AIAA	Direct overlap
	D513: DRURIDGE BAY	Surface danger area, firing danger area	Direct overlap

13.5.2.3 Recreation

As stated previously, AIS is not compulsory for recreational vessels and they tend to be underrepresented in AIS data; however, there are alternative approaches to understand recreational usage patterns. The RYA Coastal Atlas was used to identify recreational features relevant to the study area. This includes general boating areas, clubs and other facilities (Figure 13-4). Recreation is studied in further detail in Chapter 15: Other Sea Users.

Within Scottish waters, Peterhead Port has a marina, a sailing club and four training centres, as well as being a centre for a high concentration of recreational activity routing along the Scottish coast (Figure 13-4). The high recreational AIS activity seen at Peterhead Port and from Peterhead Port around the coast in Figure 13-4 is also identified in the Scottish Marine Recreation and Tourism Survey 2015 (SMRTS) (Marine Scotland, 2016). Within English waters, Bridlington Harbour has a marina and two sailing clubs. The Marine Installation Corridor also crosses into a General Boating area between KP420 and the English landfall at KP436. Recreational activity is moderately low between approximately KP425 and the English landfall location, however a region of moderate intensity recreational activity can be seen crossing the Marine Installation Corridor and routing around the coastline between approximately KP417 and KP425 (Figure 13-4).

GIS: LM Checked: JA Approved: DB

FRASERBURGH HARBOR
PETERHEAD
ABERDEEN
METHIL
BURNTISLAND
GRANGEMOUTH
ROSYTH
LEITH
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
420

D613A
D613B
D613C
D613D
X5642: FORTH MIDDLE
X5641: FORTH OUTER
D513B
D513: DRURIDGE BAY
D513B: DRURIDGE BAY
D513A: DRURIDGE BAY
D412: STAXTON
D323A
D323G
D323B
D323E
D323F
D323C

N

0 50 100 km

Scale @ A3 1:1,500,000

Coordinate System: WGS1984 Zone 30N

nationalgrid
Scottish & Southern Electricity Networks

PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone
- Military practice and exercise areas (PEXA)

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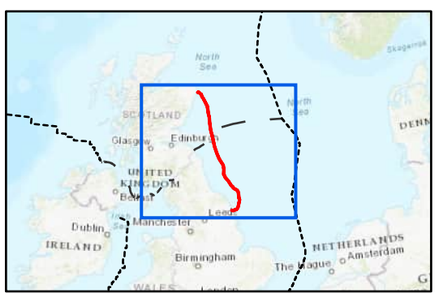

TITLE
Figure 13-03
Military Practice Areas in Proximity to the Study Area

REFERENCE
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DATE
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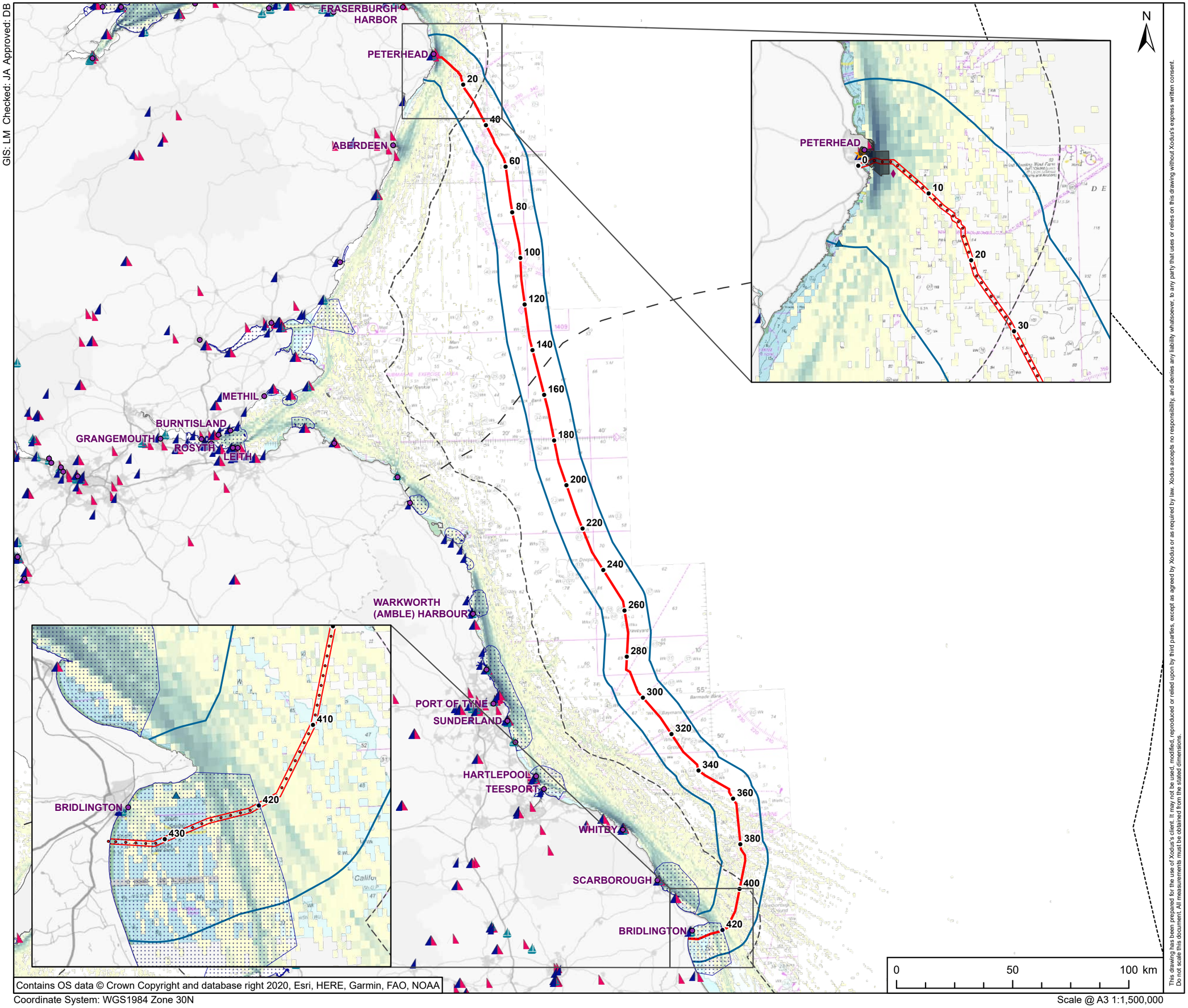

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PROJECT

Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone

RYA Coastal Atlas

- Sailing Clubs
- Marinas
- Training Centres
- General Boating Areas

Mean AIS Intensity

- High
- Low

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UK Coastal Atlas of Recreational Boating 2.1 © Royal Yachting Association
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TITLE

Figure 13-04
Recreation in Proximity to the Study Area

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SHEET NUMBER: 1 of 1

DATE: 28/04/2022

13.5.2.4 Other Infrastructure and Navigational Features

The following additional features have been considered and are shown in Figure 13-5:

- Offshore wind farms, other renewable sites and ScotWind awarded sites;
- Subsea cables;
- Aggregate areas;
- Dredge spoil disposal;
- Oil and gas infrastructure and licences; and
- Charted wrecks.

Charted wrecks are discussed in detailed in Chapter 12: Marine Archaeology and offshore infrastructure is discussed in depth in Chapter 15: Other Sea Users. Offshore infrastructure and other features are included here from a navigational perspective.

At the Scottish landfall, within Sanford Bay there are two sewage outfalls and cooling water discharge from Peterhead power station. Figure 13-5 shows that within Scottish waters from the landfall to approximately KP16 the Marine Installation Corridor overlaps with the cable agreement area for the Project and crosses the NorthConnect cable agreement area at approximately KP5. There is an offshore wind farm cable agreement located within the study area and approximately 2.6 km from the Marine Installation Corridor at the closest point at KP2, which is for the Buchan Deep Demo offshore windfarm. The windfarm itself is located approximately 14.4 km north east of the Marine Installation Corridor at KP12. There are also two active dredge disposal locations (CR070 and CR080) approximately 2 km and 2.7 km respectively from the Marine Installation Corridor at the closest point at approximately KP4, as well as two disused dredge disposal location which overlap with the Marine Installation Corridor at KP1. Two oil and gas pipelines and one cable cross the Marine Installation Corridor at approximately KP16.5, these are the Forties C to Cruden Bay pipelines (PL8 and PL721) and the Aberdeen to Ula Tampnet active telecom cable. Pipeline PL8's status is abandoned, while PL721 is active.

The Marine Installation Corridor directly overlaps with ScotWind awarded site Project 6 DEME between approximately KP64 and KP74, and Project 1 BP Alternative Energy Investments between approximately KP90 and KP93 (Figure 13-5). The Marine Installation Corridor passes east of the Seagreen windfarms from approximately. KP100 to the border with Scottish waters, which once construction starts may encourage routing of vessel traffic around the eastern edge of these sites and closer to the study area, in particular recreational traffic as noted by the RYA during consultation.

In English waters from KP240 onwards to the English landfall there is a greater concentration of other infrastructure and features which overlap with the Study Area. Several cables intersect the Marine Installation Corridor between KP240 and KP385, including the North Sea Link Interconnector at approximately KP241 which is now operational. Three disused telecom cables cross the Marine Installation Corridor at approximately KP318, KP380 and KP385, and three active telecom cables cross the Marine Installation Corridor at approximately KP286 (Havhingsten), KP319.5 (Pangea North) and KP383 (Tata North).

In terms of oil and gas infrastructure, five active pipelines intersect the Marine Installation Corridor in English waters between KP286 and KP356: PL744 at approximately. KP286, PL19 at KP299, and PL2769.1, PL2768.1 and PL2770 at approximately KP356. The Marine Installation Corridor crosses through oil and gas licensed areas from KP260 to KP340, and licensed areas overlap with the study area between approximately KP370 and KP415. Additionally, the planned route of the NEP CCUS Teesside pipeline crosses the Marine Installation Corridor at KP380.

The Dogger Bank windfarms are located approximately 70 km to 150 km to the east of the Marine Installation Corridor in English waters, and the export cable licence area for Dogger Bank C and the Sofia windfarms intersect the Marine Installation Corridor between approximately KP337.5 and KP339.5. The export cable area for Dogger Bank windfarms A and B comes within 200 m of the Marine Installation Corridor at KP418.

GIS: LM Checked: JA Approved: DB

FRASERBURGH HARBOR
PETERHEAD
Aberdeen Offshore W/F
ABERDEEN
Wind T&D Site
Seagreen
Marr Bank
Berwick Bank
Buchan Deep Demo
NorthConnect
Eastern Link 2
WARKWORTH (AMBLE) HARBOUR
Blyth Demo
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON
DoggerBank export cable
Dogger Bank
Hornsea
NEP CCUS

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

1 2 3 4 5 6

N

0 50 100 km

Scale @ A3 1:1,500,000

Coordinate System: WGS1984 Zone 30N

nationalgrid
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PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone
- Wrecks
- Offshore renewables site agreements
- Offshore cable agreements
- ScotWind Awarded Sites
- Offshore minerals - Aggregates, evaporites and mining site agreements

Cables
- Power active
- Power under construction
- Telecom active
- Inactive cables

Dredge spoil dumping
- Closed
- Open

Oil and gas
- Surface infrastructure
- Subsurface infrastructure
- Pipelines
- Wells
- Licences
- NEP CCUS pipelines

TITLE
Figure 13-05
Other Navigational Features in Proximity to the Study Area

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The concentration of other infrastructure to the east of the Marine Installation Corridor in English waters from KP240 onwards raises the possibility of simultaneous operations between the Marine Scheme and these other infrastructure projects, as well as the possibility of service vessels crossing the Marine Installation Corridor to transit to and from the infrastructure.

Within the Study Area close to the English landfall, approximately 2.2 km from KP429, there is an active dredge disposal site, and an inactive dredge disposal site that overlaps the Marine Installation Corridor at KP423.

Charted wrecks are located throughout the study area in both English and Scottish waters but show an increased concentration in English waters in the inshore region, from approximately KP397 to the English landfall. There are three charted wrecks which fall within the Marine Installation Corridor, one within Scottish waters and two within English waters one of which is classified by the UKHO as a 'dangerous wreck', located at approximately KP428[2].

13.5.3 Emergency Response Overview

This section considers the emergency response in the study area by the RNLI and by helicopter including such data as:

- RNLI Stations; and
- SARH bases and radii of action (Department for Transport).

13.5.3.1 RNLI

The RNLI has six regions; the study area falls within the 'Scotland' and 'North and East' RNLI regions (Figure 13-6). The RNLI has 238 stations and more than 400 lifeboats (RNLI, 2021a). There are a several RNLI lifeboat stations within close to the study area, as presented in Table 13-8 and shown in Figure 13-6. There are three lifeboat stations within the study area: Peterhead in Scottish waters and Flamborough and Bridlington in English waters. Peterhead lifeboat station operates a Tamar class all-weather lifeboat (ALB) (RNLI, 2021b), Flamborough has inshore Atlantic 85 lifeboat (RNLI, 2021c) and Bridlington station operates both inshore (ILB) and ALB lifeboats (RNLI, 2021d).

Table 13-8: RNLI lifeboats Within 50 km of the Study Area

Station	Lifeboats	County	Region
Scotland			
Aberdeen	ALB/ILB	Aberdeenshire	Scotland
Fraserburgh	ALB	Aberdeenshire	
Peterhead	ALB	Aberdeenshire	
England			
Staithes and Runswick	ILB	North Yorkshire	North and East
Whitby	ALB/ILB	North Yorkshire	
Bridlington	ALB/ILB	East Riding of Yorkshire	
Filey	ALB/ILB	North Yorkshire	
Flamborough	ILB	East Riding of Yorkshire	
Humber	ALB	East Riding of Yorkshire	

[2] It should be noted that the Chapter 12: Marine Archaeology is based on a 1 km wide study area and as such has identified a different number of wrecks. Both the shipping and navigation and marine archaeology baselines have been based on data sourced from UKHO.

Station	Lifeboats	County	Region
Scarborough	ALB/ILB	North Yorkshire	
Withernsea	ILB	East Riding of Yorkshire	
Cleethorpes	ILB	Lincolnshire	

13.5.3.2 Search and Rescue by Helicopter

As part of the MCA, HM Coastguard initiates and coordinates Search and Rescue (SAR) response around the UK. Since April 2015, Bristow Search and Rescue has provided the helicopter SAR service on behalf of HM Coastguard, operating 10 helicopter bases around the UK (Bristow Group, 2021).

The study area lies between the SARH bases of Inverness to the west (approximately 145 km away at the closest point), Prestwick to the west (approximately 225 km away) and Humberside to the south (approximately 31 km away) (see Figure 13-7). The study area sits fully within the radii of action of Prestwick SARH base.

13.5.4 Maritime Incidents

A review of previous marine incidents within the study area can give an indication of the general level of marine incident risk in this region, which may be relevant during the Installation Phase of the Marine Scheme.

This section considers such data as:

- RNLI Return to Service (launches in response to incidents); and
- SARH taskings (Department for Transport).

13.5.4.1 RNLI

The RNLI keeps a record of callouts to marine incidents. Those in the study area between 2008 and 2020 that were deemed to not be false alarms or hoaxes are shown in Figure 13-6. A total of 798 unique incidents which were not false alarms or hoaxes were recorded between 2008 and 2020. Of those incidents, 24.8% were due to machine failure, and 86% (686 incidents) were within 5 km of shore.

13.5.4.2 Search and Rescue by Helicopter

There were 84 SARH taskings in the study area between April 2016 to March 2021 (Figure 13-7). One incident occurred within the Marine Installation Corridor at KP424.5 in 2017 and was a ‘Rescue/Recovery’ tasking.

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FRASERBURGH HARBOR
Peterhead
PETERHEAD
ABERDEEN
SCOTLAND
METHIL
BURNTISLAND
GRANGEMOUTH
ROSYTH
LEITH
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
NORTH AND EAST
WHITBY
SCARBOROUGH
Flamborough
BRIDLINGTON
Bridlington
NORTH AND EAST
Flamborough
BRIDLINGTON
Bridlington

20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

Peterhead
PETERHEAD
SCOTLAND
0
20

N

0 50 100 km

Scale @ A3 1:1,500,000

Coordinate System: WGS1984 Zone 30N

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PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- Scottish/English Water Border
- UK Territorial Sea Limit
- UK Exclusive Economic Zone
- RNLI Lifeboat station
- RNLI regions

RNLI Returns of Service (2008 - 2020)

- Machinery Failure
- Person in distress
- In danger of drowning
- Person missing
- Fouled propeller / impeller
- Injured
- Cut off by tide
- Thought to be in trouble
- Other or unknown

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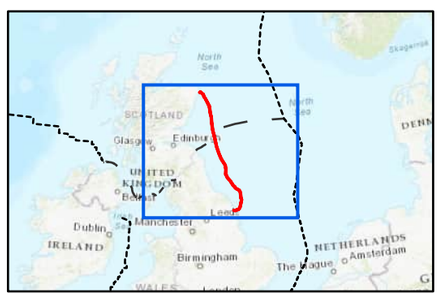

TITLE
Figure 13-06
RNLI Search and Rescue Data (2008 - 2020) in Proximity to the Study Area

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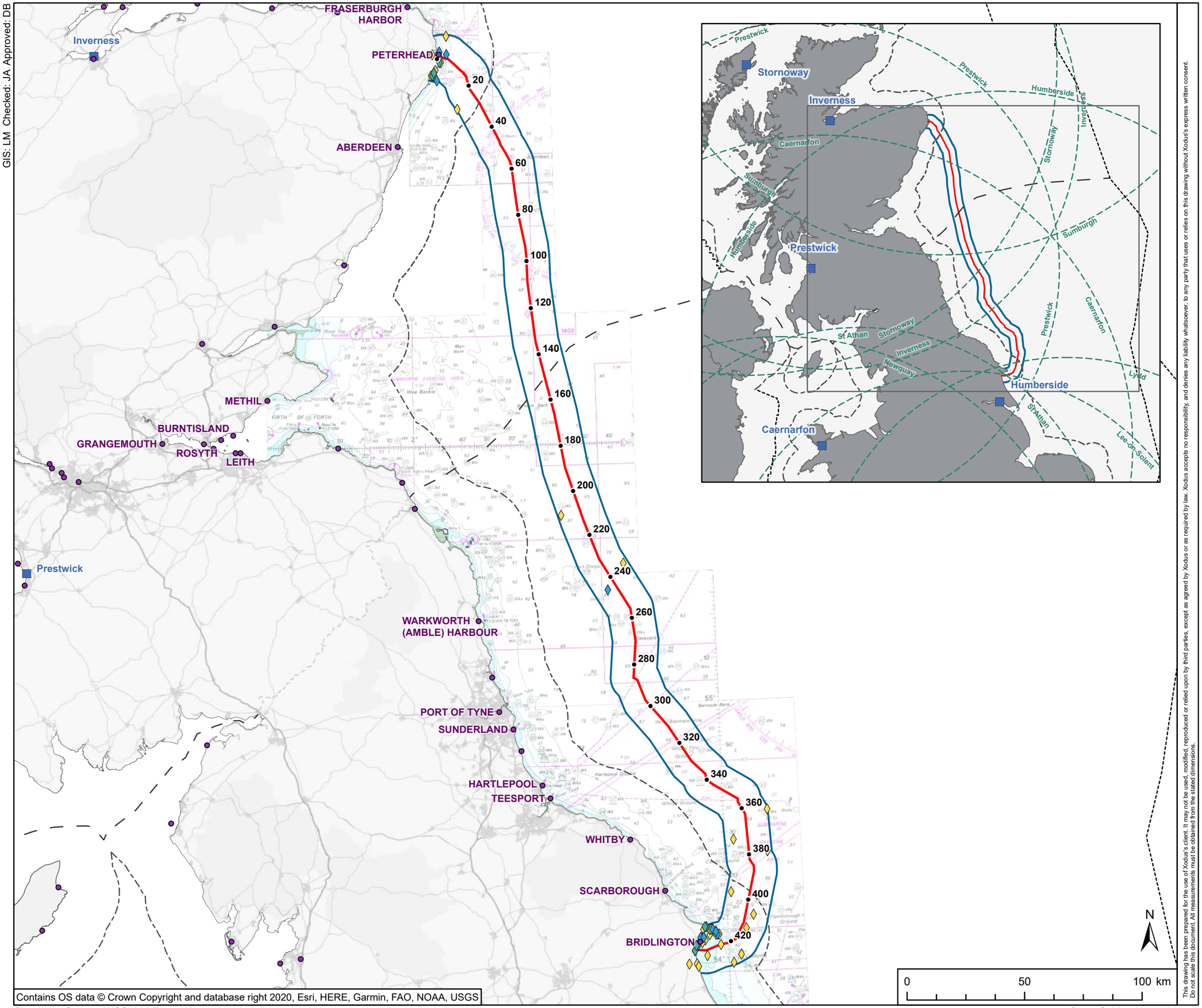

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PROJECT

Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM shipping and navigation study area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone
- SARH bases
- SARH Radii of action

SARH taskings Apr 2016 to Mar 2021

- Rescue/Recovery
- Search
- Support

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SARH Department of Transport and MCA.
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TITLE

Figure 13-07
SARH Taskings (April 2016 - May 2021) in Proximity to the Study Area

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EGL2_M_EAR_13-07_v1_20220428

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DATE: 28/04/2022

13.5.5 Marine Traffic Survey

13.5.5.1 Automatic Identification System (AIS) Data Overview

AIS Data Overview and Seasonality

A total of 22,313 AIS vessel tracks were recorded across the two-season study period within the Study Area. There were 12,233 tracks across the three summer months and 10,080 during the winter season (Table 13-9 and Figure 13-8). July (2021) was the month with the most tracks at 4,230, while December (2019) was the month with the least, at 3,234. One of the main differences between the two seasons is that there are more fishing, other, passenger and recreational tracks present in the summer season compared to the winter. The tracks in the summer season are also more geographically spread, as shown in Figure 13-9, which displays the summer and winter AIS vessel tracks densities. In the winter season between KP80 and KP280 there is a very low density of vessel tracks, while in the summer season within the same region there is higher density of tracks, reaching to 51 tracks per 5 km^2 to 100 tracks per 5 km^2. The time of year is therefore a significant consideration for the Marine Scheme.

Table 13-9: AIS Vessel Tracks per Season.

Season	Count of Tracks	Average Number of Tracks per Day
Winter 2019-2020	10,080	109.6
Summer 2021	12,233	133.0
Total	22,313	121.3

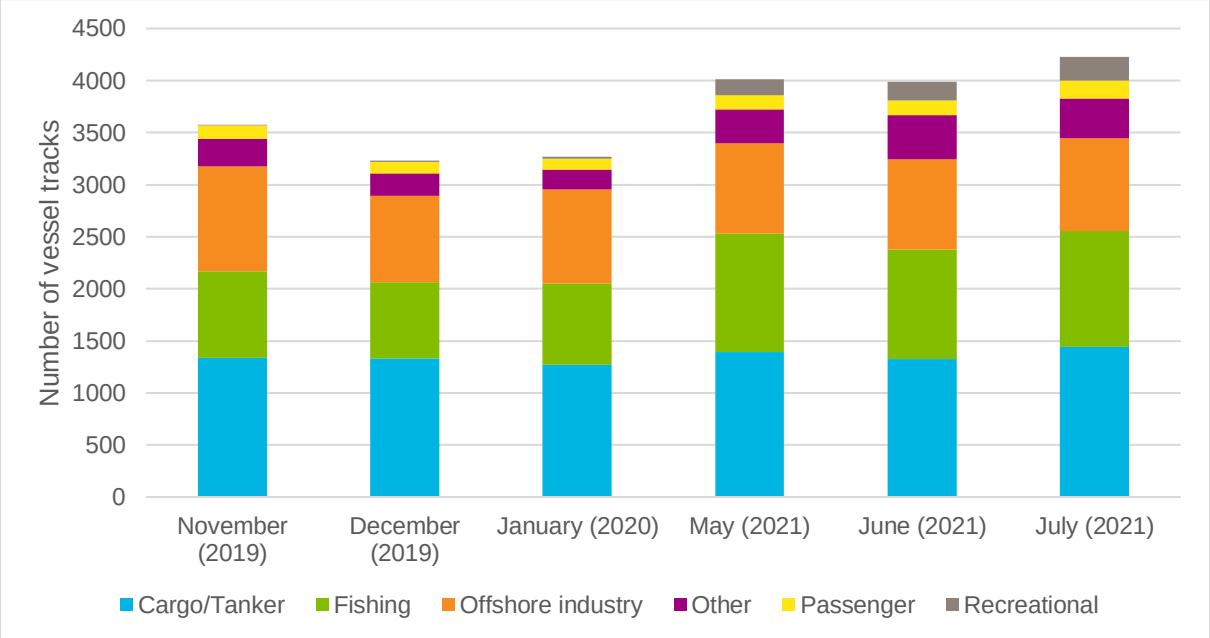

Figure 13-8: Distribution of AIS Vessel Tracks by Month and Vessel Type

There are similar spatial patterns between the two seasons, with the highest density of tracks seen within the UK Territorial Sea limit in both Scottish and English waters (Figure 13-9). In Scottish waters from KP0 to KP60, there is a higher concentration of tracks routeing around the coastline in both seasons, reaching a maximum at KP3 of 1,556 vessel tracks per 5 km^2 in winter and 1,895 in summer. In English waters from approximately KP285 in winter and KP260 in summer, vessel track density is moderate, increasing to high density from approximately KP378 to the English landfall. The highest density of vessel traffic in English waters is seen intersecting the Marine Installation Corridor at KP411, reaching 581 tracks per 5 km^2 in winter and 580 tracks per 5 km^2 in summer.

The day on which most vessels began a journey or crossed into the Study Area was 02 July 2021 (Figure 13-10), when 178 vessel tracks were recorded. Conversely, the quietest day was 26 December 2019 when only 48 vessel tracks were recorded within the study area.

13.5.5.2 Vessel Type

The most frequently recorded AIS vessel tracks in the Study Area were from “cargo/tanker” vessels with 36.3% of all tracks across the two seasons, with “fishing” and “offshore industry” vessels following at 25.3% and 24.1% of tracks respectively (Table 13-10 and Figure 13-11). “Other”, “passenger” and “recreational” tracks were relatively low, at 8.1%, 3.5% and 2.8% of all tracks, respectively.

Table 13-10: AIS Vessel Tracks by Vessel Type

Row Labels	Count of Tracks	Percentage of Total
Cargo/Tanker	8,098	36.3%
Fishing	5,649	25.3%
Offshore industry	5,368	24.1%
Other	1,800	8.1%
Passenger	783	3.5%
Recreational	615	2.8%
Total	22,382	100%

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Winter (Nov 2019 - Jan 2020)

Summer (May 2021 - July 2021)

FRASERBURGH HARBOR
PETERHEAD
ABERDEEN
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

Coordinate System: WGS1984 Zone 30N

0 50 100 km

N

Scale @ A3 1:1,500,000

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PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border

Seasonal vessel track density per 5sqkm

- 0 - 25
- 26 - 50
- 51 - 100
- 101 - 250
- 251 - 500
- > 500

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TITLE

Figure 13-09
Seasonal Spatial Distribution of AIS Vessel Track Density in Proximity to Study Area

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FRASERBURGH HARBOR
PETERHEAD
ABERDEEN
METHIL
BURNTISLAND
GRANGEMOUTH
ROSYTH
LEITH
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

N

0 50 100 km

Scale @ A3 1:1,500,000

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Coordinate System: WGS1984 Zone 30N

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Scottish & Southern Electricity Networks

PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border
- UK Exclusive Economic Zone
- Vessel tracks on the busiest day (2nd July 2021)

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Figure 13-10
Spatial Distribution of AIS Vessel Tracks for the Busiest Day of the AIS Data in Proximity to Study Area

REFERENCE
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DATE
28/04/2022

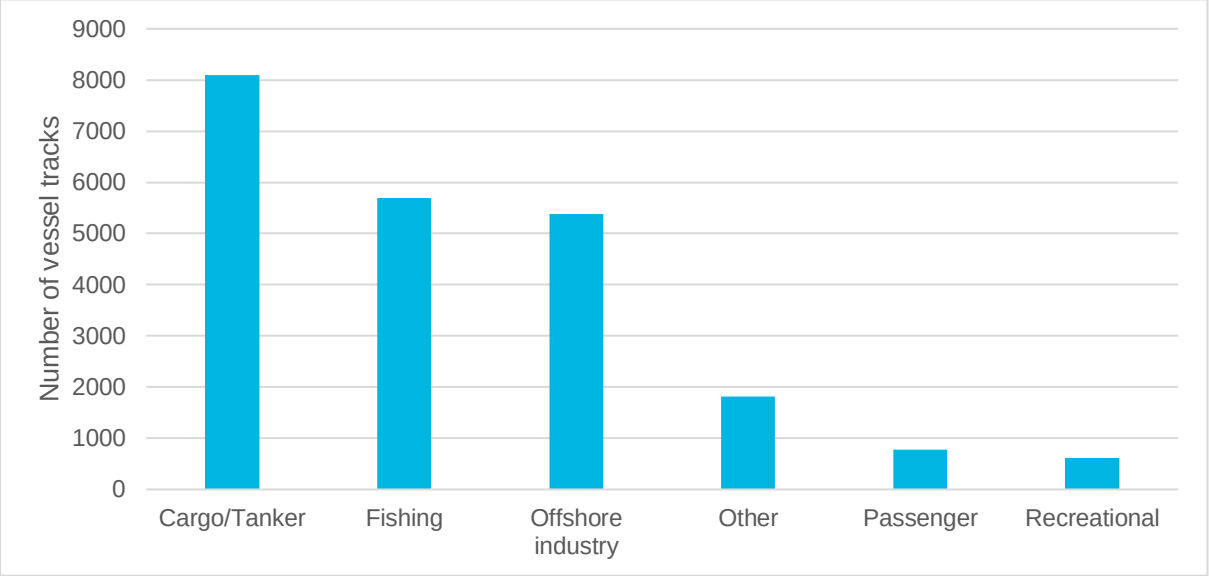

Figure 13-11: AIS Vessel Tracks Per Vessel Type

Figure 13-12 shows AIS vessel tracks classified by vessel type for the summer and winter seasons, against a background of historic MMO AIS track lines from the relevant season in 2017 to provide the wider context of vessel traffic and vessel trajectories. In Scottish waters in both seasons, high levels of vessel activity are observed between approximately KP10 to KP62, comprising primarily cargo vessels and tankers transiting along the coast to and from the Firth of Forth perpendicular to the Marine Installation Corridor, as well as passenger vessel tracks close to shore, offshore industry activity and fishing activity. In the summer season, as Figure 13-12 shows, there is the addition of a concentration of recreational vessel traffic routeing along the coast.

Within English waters in the winter season, geographic patterns of cargo and tanker, offshore industry and passenger AIS vessel traffic are similar to those seen in summer. Both seasons show a concentration of passenger vessel traffic crossing the Marine Installation Corridor. This relates mainly to Newcastle to Ijmuiden (Netherlands) ferry vessel traffic, which is run by operator DFDS Seaways (DFDS, 2021), however it routes between KP 376 and KP 382 in the winter season, and KP386 and KP392 in summer 2021, suggesting that the ferry operator's regular route was adjusted.

Fishing traffic is particularly concentrated between approximately KP305 and KP320 as well as between KP402 to KP433 in winter, but in the summer season there is an additional region of fishing vessel tracks within the study area at approximately KP155 to KP190. The summer season sees an increase in 'other' vessel activity between KP260 and KP302, relating to research and survey vessels routeing offshore, as well as an increase in recreational activity which is present in summer between KP419 and the English landfall.

The following sections describes the vessel activity across both seasons per vessel type. Fishing vessel traffic is considered separately in Section 13.5.5.4: Fishing Analysis.

Cargo Vessels and Tankers

As shown in Figure 13-13, high levels of cargo vessel and tanker traffic is present throughout the majority of the study area in both Scottish and English waters, transiting to and from the Firth of Forth ports and along the Scottish and English coastlines. In Scottish waters, cargo and tanker activity is low closest to shore, and is highest between approximately KP2 to KP14, which includes cargo and tanker vessels transiting from Peterhead Port between KP2 and KP3. In English waters, cargo and tanker traffic is similarly low close to shore between KP421 and the English landfall, and highest between KP395 and KP421.

GIS: LM Checked: JA Approved: DB

Winter (Nov 2019 - Jan 2020)

Summer (May 2021 - July 2021)

FRASERBURGH HARBOR
PETERHEAD
ABERDEEN
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

Coordinate System: WGS1984 Zone 30N

0 50 100 km

N

Scale @ A3 1:1,500,000

nationalgrid
Scottish & Southern Electricity Networks

PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border

Vessel tracks by vessel type

- Cargo/Tanker
- Offshore industry
- Fishing
- Passenger
- Recreational
- Other
- Historic MMO 2017 AIS track lines per season for the wider region

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TITLE
Figure 13-12
Seasonal Spatial Distribution of AIS Vessel Tracks by Vessel Type in Proximity to Study Area

REFERENCE
EGL2_M_EAR_13-12_v1_20220502

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PETERHEAD
ABERDEEN
WARKWORTH (AMBLE) HARBOUR
PORT OF TYNE
SUNDERLAND
HARTLEPOOL
TEESPORT
WHITBY
SCARBOROUGH
BRIDLINGTON

20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

Castle Ground

0 50 100 km

N

Coordinate System: WGS1984 Zone 30N

Scale @ A3 1:2,304,905

nationalgrid
Scottish & Southern Electricity Networks

PROJECT
Eastern Green Link 2

KEY

- Kilometre Point (KP)
- Marine Installation Corridor
- 10 NM Shipping and Navigation Study Area
- Port
- UK Territorial Sea Limit
- Scottish/English Water Border

Vessel tracks by vessel type

- Cargo/Tanker
- Offshore industry
- Passenger
- Recreational
- Other

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TITLE
Figure 13-13
Spatial Distribution of AIS Vessel Tracks by Vessel Type in Proximity to Study Area

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