South Tees Development Corporation

Metals Recovery Site

Habitats Regulations Assessment: Stage 1 (Screening) and Stage 2 (Appropriate Assessment)

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This document has been prepared by Ove Arup and Partners Ltd (Arup) on behalf of South Tees Development Corporation (STDC), in connection with a planning application for the initial ground remediation on the Metals Recovery Site within the South Industrial Zone (SIZ). This report details the Habitats Regulations Assessment (HRA) Stage 1 and Stage 2 assessments for the proposed development.

There are eight internationally important designated sites within 20km of the proposed development site. Of these eight designated sites, North York Moors Special Area of Conservation (SAC) and Special Protection Area (SPA), Durham Coast SAC, and Northumbria Coast SPA and Ramsar, and Castle Eden Dene SAC were scoped out of further assessment at the Screening stage, due to their distance from the proposed development site, and lack of direct impact pathways.

The Teesmouth and Cleveland Coast SPA and Ramsar sites are 250m away from the proposed development site and have the potential to be impacted during the construction of the proposed development. Therefore, the Teesmouth and Cleveland Coast SPA and Ramsar sites were scoped into Appropriate Assessment (AA).

The construction works have potential to impact on the qualifying features of the SPA and Ramsar through disturbance and/or loss of habitats within the SPA/Ramsar from pollution, and noise/visual disturbance of small numbers of qualifying species utilising the SPA/Ramsar site for foraging, commuting and/or roosting.

In-combination effects were considered at the Appropriate Assessment stage.

Following the implementation of mitigation to avoid or screen visual disturbance to shelduck (*Tadorna tadorna*) in the Lackenby Channel and the implementation of Construction Environmental Management Plan (CEMP) there will be **no significant effects** to the integrity of the Teesmouth and Cleveland Coast SPA and Ramsar from the construction of the proposed development

It is considered likely that no further stages of the HRA process will be required.

1 Introduction

1.1 Overview

This document has been prepared by Ove Arup and Partners Ltd (Arup) on behalf of South Tees Development Corporation (STDC), in connection with a planning application for the initial ground remediation on the Metals Recovery Site within the South Industrial Zone (SIZ) (hereafter referred to as the 'proposed development').

This report provides information to inform both Stage 1 (Screening) and Stage 2 (Appropriate Assessment [AA]) of a Habitats Regulations Assessment (HRA). It has been prepared to inform the 'competent authority', which is Redcar and Cleveland Borough Council (RCBC) as the Local Planning Authority, about the implications of the proposed development on nearby internationally important sites, as required under Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (hereafter referred to as the 'Habitats Regulations')[1]. The report has been prepared in accordance with the Habitats Regulations Assessment Handbook[2].

Sections 4 to 7 of this report include Stage 1 of the HRA process; a statement to inform the Screening stage of the HRA process for the proposed development.

Section 8 of this report comprises Stage 2 of the HRA process; a statement to inform an AA for the proposed development.

[1] The National Archives. *The Conservation of Habitats and Species Regulations 2017.* Available: http://www.legislation.gov.uk/uksi/2017/1012/contents/made. Accessed 21 May 2020.
[2] Tyldesley D. & Chapman, C. (2013) *The Habitats Regulations Assessment Handbook,* 2019 edition UK: DTA Publications Limited.

2 The Habitats Regulations Assessment Process

2.1 Overview

Figure 1 provides an overview of the HRA process for projects within or with the potential to affect internationally important sites.

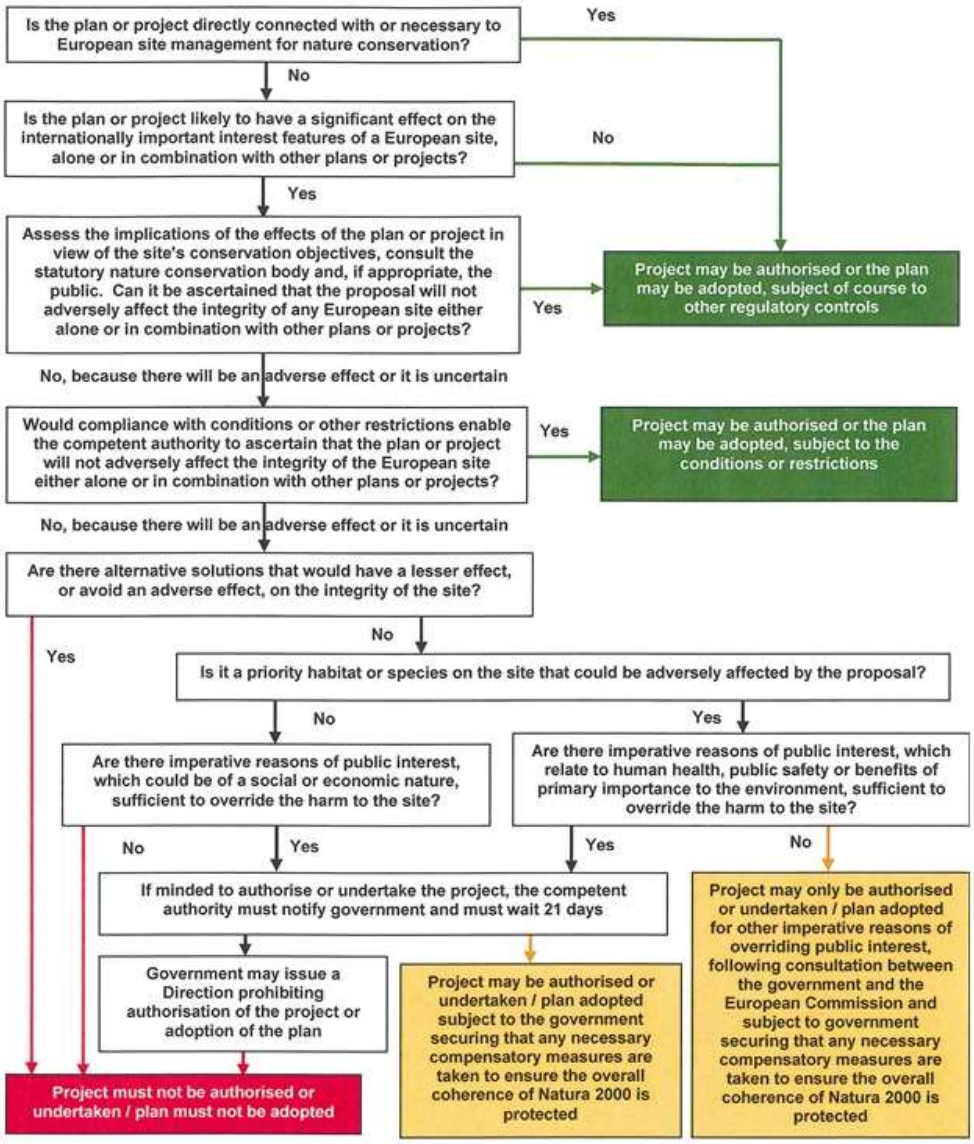


Figure 1: The Habitats Regulations Assessment Process[2]

2.2 Requirements of the Habitats Regulations

The Habitats Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna provides legal protection for habitats and species of European importance. The Directive is transposed into UK law by the Habitats Regulations[1].

Regulation 63 of the Habitat Regulations requires a competent authority to make an 'appropriate assessment' of the implications of a plan or project for that site in view of its conservation objectives, before deciding to undertake or give consent for a plan or project which: (a) is likely to have a significant effect on an internationally important site (either alone or in combination with other plans or project); and, (b) is not directly connected with or necessary to the management of that site.

The HRA process employs the precautionary principle and Regulation 63 ensures that where a project is "*likely to have a significant effect*", it can only be consented if the competent authority can ascertain (following an appropriate assessment) that it "*will not adversely affect the integrity of the European site*". European Sites include Special Areas of Conservation (SACs), candidate SACs, Offshore Marine SACs and Special Protection Areas (SPAs). However, it is government policy in England and Wales to also include Wetlands of International Importance (Ramsar sites), potential SPAs and possible Ramsar sites as European Sites.

All plans and projects should identify any such possible effects early in the plan/project making process and then either alter the plan/project to avoid them or introduce mitigation measures to the point where no adverse effects occur. The competent authority is to agree to the plan or project only after having ascertained that it would not adversely affect the integrity of the site concerned and, if appropriate, having obtained the opinion of the general public.

An in-combination assessment is required where an impact is identified which would have an insignificant effect on its own (a residual effect) but where likely significant effects arise cumulatively with other plans or projects.

The assessment of a plan or project under the Habitats Regulations can be split into several sections as shown in Figure 1. There are effectively four stages to the assessment, comprising:

- **Stage 1 – Screening**: This is the assessment of the likelihood of a plan or project having a significant effect on an internationally important site or its features. This is the trigger for the need for an Appropriate Assessment as set out in Regulation 61(1);
- **Stage 2 - Appropriate Assessment**: This is the detailed consideration of the potential effects of the plan or project in relation to the conservation objectives for the internationally important site to determine if there is likely to be an adverse effect on the integrity of the site (i.e. an effect that would compromise the site meeting its conservation objectives). The integrity of a European site is described in the Government Circular (06/2005) on biodiversity and geological conservation as:

"*the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified*."

Providing it can be demonstrated that with appropriate mitigation measures the plan or project would not give rise to an adverse effect on the integrity of an internationally important site, the plan or project can proceed;

- **Stage 3 - Consideration of Alternatives**: Where it cannot be demonstrated that the project could give rise to an adverse effect on the integrity of an internationally important site, or there is uncertainty, the assessment would need to consider if there were any other alternatives to the plan or project that would not give rise to adverse effects on the integrity of the internationally important site; and
- **Stage 4 – Reasons of Overriding Public Interest:** If there are no alternatives, Stage 4 would then consider if there are any imperative reasons of overriding public interest, and whether there were any compensatory measures that might be required.

3 Proposed Development Description

3.1 Proposed Development Site Overview

The proposed development site is located within the STDC land zone known as SIZ. The proposed development site is located adjacent to the PD Ports, Teesport and north of the area known as The Slems (a wetland area in the south-eastern corner of the SIZ).

The proposed development site makes up an areas referred to as the 'Landfill Zone' within the STDC Masterplan[3] and historically was an area leased by former Sahaviriya Steel Industries (SSI) from Tata Steel, now in STDC ownership, that has previously been leased to Harsco who have been engaged in recycling materials from iron and steelmaking for recovery of metals.

The proposed development site has until recently been fully active and used to process materials from the former Basic Oxygen Steelmaking (BOS) Plant at Lackenby (as part of the Integrated Iron and Steelworks operation). This works consists of sorting and grading of by-product slag material for use as a construction material. This involves the crushing and screening of the raw by product material, removal of ferrous elements for recovery and reuse elsewhere, and then sorting and sizing of the aggregate for onward sale.

3.2 Proposed Development

The construction works described in this assessment is for the remediation of the proposed development site. The description of the proposed development works is as follows:

"*Demolition of existing buildings/ structures and engineering operations associated with ground remediation and preparation of land for development*."

Relevant components of the proposed development construction include:

- Turnover and replacement of shallow made ground to an approximate depth of 2m below ground level;
    - Materials that have been excavated and require remediation of contaminants will be segregated and treated to make suitable for re-use. Treatment of these materials will take place within a designated area of the proposed development site where hardstanding remains in situ;
- Where materials such as scrap metals or highly contaminated soils can not be treated, these will be removed from the proposed development site and taken to a licenced treatment facility;

[3] South Tees Development Corporation (November 2019) South Tees Regeneration Master Plan. https://www.southteesdc.com/wp-content/uploads/2020/01/South-Tees-Master-Plan-Nov-19.2.pdf Accessed 06 August 2020.

- Removal of any obstructions and existing vegetation within the proposed development site;
- Re-engineering materials to form a development platform; and
- Installation of thin capping layer to prevent dust generation.

These elements of construction are likely to lead to:

- Generation of some dust, which will be controlled by standard environmental management control methods (e.g. wheel washing and road brushing) to be defined within the Construction Environmental Management Plan (CEMP);
- Generation of noise and vibration, which will be temporary and avoided or minimised through implementation of the CEMP. The CEMP would include restrictions and targets for specific work activities, including monitoring. If required, appropriate mitigation measures to deal with any noise and vibration impacts would be put in place around the proposed development site;
- Any groundwater recovered from excavations will be treated as required and disposed of under duty of care and using best practice guidelines;
- Emissions from on-site plant and construction vehicles, which would have a minor adverse, temporary effect on the environment and require no mitigation other than standard best practice for construction sites; and
- A low risk of leachates or the escape of products/by-products that may constitute a contaminant in the environment, to be managed through best practice construction management techniques in line with the CEMP.

The proposed development site red line boundary is provided in Appendix A.

Appendix B outlines the location of the proposed development site in relation to the wider STDC site.

4 Stage 1 – Screening

4.1 Methodology

4.1.1 Desk Study and Evidence Gathering

In order to understand the potential implications for internationally important sites from the proposed development, it is necessary to identify those sites that are located close to the proposed development or provide a pathway for effect on internationally important sites.

All internationally important sites within a 20km radius of the proposed development were identified (Appendix C). Once these internationally important sites and the pathway for an effect had been identified, the pathway was investigated further through a desk study review. The ecological data available was used to support the assessment to determine the likelihood for a significant effect.

The ecological data reviewed to inform Stage 1 of the HRA process comprised:

- Natural England's Departmental Brief for the proposed extension to the Teesmouth and Cleveland proposed SPA (pSPA) and proposed Ramsar sites[4]. *Note:* These sites have now been fully adopted, however the Departmental Brief documents still contain the most up to date information pertaining to the SPA and Ramsar sites;
- Internationally important designated site data sheets available from the Joint Nature Conservation Committee (JNCC)[5, 6, 7, 8, 9, 10];
- Updated information regarding internationally important designated sites available from Natural England's Designated Sites View[11];

[4] NE (2018) *Departmental Brief: Teesmouth and Cleveland Coast potential Special Protection Area (pSPA) and Ramsar.* Available: https://consult.defra.gov.uk/natural-england-marine/teesmouth-and-cleveland-coast-potential-sp/ Accessed 06 August 2020.
[5] JNCC. *North York Moors Special Area of Conservation Information Sheet*. Available: https://sac.jncc.gov.uk/site/UK0030228 Accessed 06 August 2020.
[6] JNCC. *North York Moors Special Protection Area Information Sheet*. Available: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9006161.pdf. Accessed 06 August 2020.
[7] JNCC. *Durham Coast Special Area of Conservation Standard Data Form.* Available: http://jncc.defra.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030140.pdf Accessed 06 August 2020.
[8] JNCC. *Northumbria Coast Special Protection Area Standard Data Form*. Available: http://jncc.defra.gov.uk/pdf/SPA/UK9006131.pdf Accessed 06 August 2020.
[9] JNCC. *Northumbria Coast Ramsar Information Sheet.* Available: http://jncc.defra.gov.uk/pdf/RIS/UK11049.pdf Accessed 06 August 2020.
[10] JNCC. *Castle Eden Dene Special Area of Conservation Standard Data Form.* Available: https://sac.jncc.gov.uk/site/UK0012768 Accessed 06 August 2020.
[11] NE. *Designated Sites View: Northumbria Coast Special Protection Area.* Available: https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006131 Accessed 06 August 2020.

- The findings of three breeding bird surveys undertaken by the Industry Nature Conservation Association (INCA) at the SIZ site during May and June 2020;
- Desk Study information collated in May 2020 including records of legally protected or notable species within 2km of the proposed development site requested from the Environmental Records Information Centre North East (ERIC NE); and
- Wetland Bird Survey (WeBS) data obtained from the British Trust for Ornithology (BTO) including: Tees Estuary low tide count data (2012 & 2018), and five-year summary data for two recording sections: Tees Estuary opposite Smith Dock and Hargreaves Quarry (2012-2017) and Bran Sands South (2014-2019). The WeBS data does not cover the extent of the proposed development site.

4.1.2 Consultation

At this stage of assessment, it has been assumed that development of the proposed development will be cut and fill neutral. However it should be noted that if there is the potential that soils from the proposed development site will be taken and stored somewhere else within the STDC site, consultation was undertaken by INCA in July 2019 with Andrew Whitehead from Natural England to determine if there was the potential for likely significant effects from temporary storage of materials in six locations across the wider site owned by STDC. This is discussed further in Section 6.6.

In June 2020, Adrian Miller (RCBC Environment Officer) and Andrew Whitehead (Natural England) were contacted to discuss the scope of the Ecological Impact Assessment (EcIA) and HRA of the SIZ, which includes the proposed development site discussed in this assessment.

4.1.3 Zone of Influence

This report considers whether any internationally important sites within approximately 20km of the proposed development could be potentially be affected by it. This distance from the proposed development is precautionary and was determined by ecological and construction effect features, such as species mobility distances and distances at which air and hydrological pollution events could have a significant effect.

4.1.4 In-combination Assessment

Due to the significance of effects identified at the Screening stage of assessment, an in-combination assessment has been undertaken at the AA stage only (Section 8).

4.1.5 Limitations and Assumptions

This assessment has utilised the information available at the time of writing. This assessment is based on the following assumptions:

- all existing habitat on site will be lost and no habitats will be replaced; and
- no development will take place within the River Tees or Lackenby Channel, with all construction limited to land within the red line boundary (Appendix A).

4.1.6 Use of Professional Judgement

Professional judgement has been used in this assessment where specific guidance or detailed project information was not available. Where there is insufficient information regarding the likelihood of qualifying interests being present, or of the risk of impacts, the assessment uses the precautionary principle to inform the judgement. The precautionary principle has been applied to ensure that any assessment maintains an appropriate and reasonable level of caution.

Where available, anecdotal evidence from INCA regarding use of the proposed development site by qualifying features of the SPA has been taken into account in the assessment, as INCA have had a consistent presence on the proposed development site for several years.

Professional judgement has been applied to the assessment where insufficient information about the elements and interests is available, with consideration of the following factors:

- the vulnerability/sensitivity of the receiving feature(s) of interest;
- when the risk of effects is likely to occur (e.g. construction);
- the likely geographical extent of the effects; and
- likelihood of significant effects occurring based on previous experience with similar elements, where available.

5 Internationally Important Sites under Consideration

Eight internationally important sites are present within 20km of the proposed development, including three Special Protection Areas (SPA), three SACs, and two Ramsar sites.

These are summarised in Table 1, with locations of these internationally important sites illustrated in Appendix C[12].

Table 1: Internationally important sites within 20km of the proposed development site.

Internationally Important Site	Designation	Distance from Proposed Development	Reason for Designation
Teesmouth and Cleveland Coast	SPA	Within 250m of the proposed development site. Located to the north-east at the PD Ports Tees Dock and to the north-west (River Tees).	The extensions to the Teesmouth and Cleveland Coast SPA were formally classified on 16 January 2020. The formal designation and boundaries of the extension have not been released but are detailed in the Consultation Report[13]. Site supports internationally important population of **breeding little tern** (*Sterna albifrons*), **common tern** (*Sterna hirundo*), and **pied avocet** (*Recurvirostra avosetta*). Site supports internationally important population of **non-breeding sandwich tern** (*Thalasseus sandvicensis*), **ruff** (*Calidris pugnax*), **red knot** (*Calidris canutus*) and **common redshank** (*Tringa totanus*). Site supports an **internationally important seabird assemblage**, regularly used by more than 20,000 wintering waterbirds. See Section 5.1.

[12] The updated boundary for the Teesmouth and Cleveland Coast SPA was not available at the time of writing this report. The Defra Consultation Report was reviewed to understand the new extent of the SPA.

[13] Natural England (2019) *Teesmouth and Cleveland Coast potential Special Protection Area (pSPA) and proposed Ramsar Site: Report of Consultation by Natural England, 2019.* https://consult.defra.gov.uk/natural-england-marine/teesmouth-and-cleveland-coast-potential-sp/supporting_documents/Teesmouth%20and%20Cleveland%20Coast%20Consultation%20Report%20February%202020.pdf. Accessed 9 June 2020.

Internationally Important Site	Designation	Distance from Proposed Development	Reason for Designation
	Ramsar	1.3km north-west	The extensions to the Teesmouth and Cleveland Coast Ramsar were formally classified on 16 January 2020. The formal designation and boundaries of the extension have not been released but are detailed in the Consultation Report[13]. Wetland of international importance. Designated under Ramsar criterion 5[14] for assemblages of **international important numbers of waterbirds** and Criterion 6 for regularly supporting 1% of the individuals in a population of more than one species of waterbird. The site is also designated for peak counts of **common redshank** in spring and autumn, and wintering **red knot.** See Section 5.2.
North York Moors	SAC	10.3km south	Site supports the **Annex I habitats**: Northern Atlantic wet heaths with cross-leaved heath (*Erica tetralix*); and European dry heaths. Site supports the **Annex I habitat**, but is not a primary reason for selection of the site: Blanket bogs. See Section 5.3.
	SPA	10.3km south	Site supports internationally important population of **breeding merlin** (*Falco columbarius*), and **golden plover** (*Pluvialis apricaria*). See Section 5.4.
Durham Coast	SAC	15.7km north	Site supports the **Annex I habitat**: Vegetated sea cliffs of the Atlantic and Baltic Coasts. See Section 5.5
Northumbria Coast	SPA	15.7km north	Site supports internationally important population of **breeding Arctic tern** (*Sterna paradisaea*) and **little tern** (*Sterna albifrons*). Site supports internationally important population of **non-breeding purple sandpiper** (*Calidris maritima*) and **turnstone** (*Arenaria interpres*). See Section 5.6.

[14] Ramsar Convention of Wetlands (1971) *The Ramsar Sites Criteria*. https://www.ramsar.org/sites/default/files/documents/library/ramsarsites_criteria_eng.pdf Accessed 9 June 2020.

Internationally Important Site	Designation	Distance from Proposed Development	Reason for Designation
	Ramsar	12.8km north-east	Site supports internationally important population of **breeding little tern.** Site supports internationally important population of **non-breeding purple sandpiper and turnstone.** See Section 5.7.
Castle Eden Dene	SAC	19.3km north-west	Site supports the **Annex I habitat**: Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*). See Section 5.8.

5.1 Teesmouth and Cleveland Coast SPA

The extensions to the Teesmouth and Cleveland Coast SPA were formally classified on 16 January 2020. The SPA is now 12,210.62ha in size. The following alterations were made to the final SPA boundary[13]:

- Exclusion of the upper reaches of the Lackenby Channel (Drainage Cut), Billingham Beck up to the A1032 road bridge, Normanby Beck, Ormesby Beck, Old River Tees, The Fleet and Stainsby Beck watercourses within the SPA only (as watercourses are not included within Ramsar designations);
- Exclusion of the Warrenby Reedbeds area of Coatham Marsh from SPA and Ramsar; and
- Minor amendments to the boundary to address mapping errors and anomalies between the SPA and Ramsar and the underlying Site of Specific Scientific Interest (SSSI) of the same name.

The Teesmouth and Cleveland Coast SPA qualifies under Article 4.1 by regularly supporting populations of international importance of the following Annex I species:

- **Little tern**, of which a mean of 81 breeding pairs are present within the site, representing at least 4.3% of the breeding population in Great Britain;
- **Common tern**, of which a mean of 399 breeding pairs are present within the site, representing at least 4.0% of the breeding population of Great Britain; and
- **Pied avocet**, of which a mean of 18 breeding pairs are present within the site, representing at least 1.2% of the breeding population of Great Britain.

Under Article 4.2, qualifying overwintering species comprise:

- **Sandwich tern,** of which a mean of 1,900 individuals are present within the site over winter, representing at least 1.3% of the Western Internationally important/Western African wintering population;

- **Ruff**, of which a mean of 19 individuals are present within the site over winter, representing at least 2.4% of the Great Britain wintering population;
- **Red knot**, of which a mean of 5,509 individuals are present within the site over winter, representing at least 1.6% of the North-eastern Canadian/Greenlandic/Icelandic/UK wintering population; and
- **Common redshank**, of which a mean of 1,648 individuals are present within the site over winter, representing at least 1.1% of the East Atlantic wintering population.

Teesmouth and Cleveland Coast SPA also qualifies under Article 4.3 by regularly supporting a waterbird assemblage of international importance (i.e. more than 20,000 individuals), as the site supports an average of 26,014 individuals. The assemblage includes a wide range of wintering and passage waterbird species, including those of European importance that qualify as SPA features in their own right. The current waterbird assemblage includes the following species: knot, redshank, cormorant (*Phalacrocorax carbo*), shelduck (*Tadorna tadorna*), teal (*Anas crecca*), shoveler (*Anas clypeata*) and sanderling (*Calidris alba*).

5.2 Teesmouth and Cleveland Coast Ramsar

The extension to the Teesmouth and Cleveland Coast Ramsar was formally classified on 16 January 2020. The Ramsar is 2,065.21ha in size. See Section 5.1 for more detail on final alterations to the SPA and Ramsar boundaries[13].

Ramsar sites do not include watercourses or marine areas themselves, and therefore only overlap with the terrestrial habitat designated under the SPA site.

Teesmouth and Cleveland Coast proposed Ramsar fulfils Ramsar Criterion 6, as it supports particular species occurring at levels of international importance:

- **Little tern**, of which a mean of 81 breeding pairs are present within the site, representing at least 4.3% of the breeding population in Great Britain;
- **Common tern**, of which a mean of 399 breeding pairs are present within the site, representing at least 4.0% of the breeding population of Great Britain;
- **Pied avocet**, of which a mean of 18 breeding pairs are present within the site, representing at least 1.2% of the breeding population of Great Britain;
- **Sandwich tern**, of which a mean of 1,900 individuals are present within the site over winter, representing at least 1.3% of the Western Internationally important/Western African wintering population;
- **Ruff**, of which a mean of 19 individuals are present within the site over winter, representing at least 2.4% of the Great Britain wintering population;
- **Red knot**, of which a mean of 5,509 individuals are present within the site over winter, representing at least 1.6% of the North-eastern Canadian/Greenlandic/Icelandic/UK wintering population; and

- **Common redshank**, of which a mean of 1,648 individuals are present within the site over winter, representing at least 1.1% of the East Atlantic wintering population.

Teesmouth and Cleveland Coast proposed Ramsar fulfils Ramsar Criterion 5, as it regularly supports a waterbird assemblage of international importance (i.e. more than 20,000 individual waterbirds). The designated site supports an average of 26,786 individuals[15].

5.3 North York Moors SAC

North York Moors SAC covers 44,053ha and is designated for its Annex I habitat, **Northern Atlantic wet heaths with *Erica tetralix***, the largest continuous tract of upland heather moorland in England. This Annex I habitat is found on the eastern and northern moors where the soil is less free draining. On the western, southern and central moors where the soil is free draining, the site contains the Annex I habitat, internationally important dry heaths.

The site also contains blanket bogs, which are recognised as an Annex I qualifying feature, but not a primary reason for selection of this SAC site.

5.4 North York Moors SPA

The North York Moors SPA covers 44,087ha and contains the largest continuous tract of heather moorland in England[16].

The SPA qualifies under Article 4.1 by regularly supporting populations of internationally important numbers of the following Annex I species:

- **Merlin** of which a mean of 35-40 breeding pairs are present within the site, representing at least 2.7% of the breeding population in Great Britain; and
- **Golden plover** of which a mean of 526-706 breeding pairs are present within the site, representing at least 2.3% of the breeding population in Great Britain.

In addition, this site supports a rich upland breeding bird assemblage of short-eared owl (*Asio flammeus*), peregrine (*Falco peregrinus*) and hen harrier (*Circus cyaneus*) (all Annex I species), together with common redshank, red grouse (*Lagopus lagopus scoticus*) and a nationally important population of curlew (*Numenius arquata*).

5.5 Durham Coast SAC

Durham Coast SAC covers 390ha and is designated for the presence of one Annex I habitat: **Vegetated sea cliffs of the Atlantic and Baltic Coasts**.

[15] Greylag goose (*Anser anser*) and mute swan (*Cygnus olor*) are not included in the SPA assemblage because they are not migratory populations, hence the difference in average number of waterbirds supported between the Teesmouth and Cleveland Coast SPA and Ramsar sites.
[16] Natural England. Internationally important Site Conservation Objectives North York Moors SPA (UK9006161) http://publications.naturalengland.org.uk/publication/6207512114102272 Accessed 07 August 2020.

Durham Coast SAC is the only example of vegetated sea cliffs on magnesian limestone exposures in the UK. These cliffs extend along the North Sea coast for over 20 km from South Shields southwards to Blackhall Rocks. Their vegetation is unique in the British Isles and consists of a complex mosaic of paramaritime, mesotrophic and calcicolous grasslands, tall-herb fen, seepage flushes and wind-pruned scrub.

Within these habitats rare species of contrasting phytogeographic distributions often grow together forming unusual and species-rich communities of high scientific interest. The communities present on the sea cliffs are largely maintained by natural processes including exposure to sea spray, erosion and slippage of the soft magnesian limestone bedrock and overlying glacial drifts, as well as localised flushing by calcareous water.

5.6 Northumbria Coast SPA

Northumbria Coast SPA covers 1,097ha and includes much of the coastline between the Tees and Tweed estuaries. The site consists mostly of discrete sections of rocky shore with associated boulder and cobble beaches, artificial pier structures and small sections of sandy beach.

Northumbria Coast SPA qualifies under Article 4.1 by regularly supporting populations of internationally important numbers of the following Annex I species:

- **Arctic tern**, of which a mean of 1,549 breeding pairs are present within the site, representing at least 2.92% of the breeding population in Great Britain[17]; and
- **Little tern**, of which a mean of 40 breeding pairs are present within the site, representing at least 1.7% of the breeding population in Great Britain.

Under Article 4.2, qualifying overwintering species comprise:

- **Purple sandpiper**, of which a mean of 787 individuals are present within the site over winter, representing at least 1.6% of the Eastern Atlantic wintering population; and
- **Turnstone**, of which a mean of 1,739 individuals are present within the site over winter, representing at least 2.6% of the Western Palearctic wintering population.

5.7 Northumbria Coast Ramsar

Northumbria Coast Ramsar covers 1,108ha and includes much of the coastline between the Tees and Tweed estuaries. The Ramsar site covers much the same habitat included within the Northumbria Coast SPA.

[17] Northumbria Coast SPA was amended on 29 January 2017 to include Arctic tern as a Qualifying Feature of the SPA.

Northumbria Coast Ramsar fulfils Ramsar criterion 6, as it supports particular species occurring at levels of international importance:

- **Little tern**, of which a mean of 40 breeding pairs are present within the site, representing at least 1.7% of the breeding population in Great Britain;
- **Purple sandpiper**, of which a mean of 787 individuals are present within the site over winter, representing at least 1.6% of the Eastern Atlantic wintering population; and
- **Turnstone**, of which a mean of 1,739 individuals are present within the site over winter, representing at least 2.6% of the Western Palearctic wintering population.

5.8 Castle Eden Dene SAC

Castle Eden Dene SAC covers 189ha and is designated for the presence of one Annex I habitat: **Yew woods of the British Isles**.

Castle Eden Dene SAC represents the most extensive northerly native occurrence of yew woodland in the UK. Extensive yew groves are found in association with ash-elm (*Fraxinus excelsior – Ulmus* spp.) woodland. The designated site is the only site selected for yew woodland on magnesian limestone in North East England.

5.9 Conservation Objectives

5.9.1 SPA and Ramsar Sites

The conservation objectives of Teesmouth and Cleveland Coast SPA[18] and Ramsar[19], North York Moors SPA[20] and Northumbria Coast SPA[21] are to "*ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring*:

- *the extent and distribution of the habitats of the qualifying features;*
- *the structure and function of the habitats of the qualifying features;*
- *the supporting processes on which the habitats of the qualifying features rely;*
- *the population of each of the qualifying features; and,*
- *the distribution of the qualifying features within the site."*

Conservation objectives of Northumbria Coast Ramsar and Teesmouth and Cleveland Coast Ramsar[19] sites are not readily available. However, the overarching strategic plan for Ramsar Wetlands[22] lists the following strategic goals and targets (Table 2).

[18] Natural England. Internationally important Site Conservation Objectives for Teesmouth and Cleveland Coast pSPA. Available: http://publications.naturalengland.org.uk/publication/6619918699069440 Accessed 13 May 2020.
[19] The conservation objectives of the Teesmouth and Cleveland Coast SPA and Ramsar are considered to be the same as the objectives given for the pSPA and pRamsar.
20 Natural England European Site Conservation Objectives for North York Moors Special Protection Area Site Code: UK9006161. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010082/EN010082-000444-North-York-Moors-SPA-CO.pdf Accessed 21 June 2020.
[21] Natural England. Internationally important Site Conservation Objectives for Northumbria Coast SPA. Available: http://publications.naturalengland.org.uk/publication/6372874327687168 Accessed 13 May 2020.
[22] The Ramsar Convention 4th Strategic Plan 2016-2024. Available at: https://www.ramsar.org/sites/default/files/documents/library/4th_strategic_plan_2016_2024_e.pdf Accessed 07 August 2020.

Table 2: Ramsar Convention strategic goals and targets.

Target	Description
Goal 1: Addressing the Drivers of Wetland Loss and Degradation	
Target 1	Wetland benefits are featured in national/local policy strategies and plans relating to key sectors such as water, energy, mining, agriculture, tourism, urban development, infrastructure, industry, forestry, aquaculture, fisheries at the national and local level.
Target 2	Water use respects wetland ecosystem needs for them to fulfil their functions and provide services at the appropriate scale inter alia at the basin level or along a coastal zone.
Target 3	The public and private sectors have increased their efforts to apply guidelines and good practices for the wise use of water and wetlands.
Target 4	Invasive alien species and pathways of introduction and expansion are identified and prioritized, priority invasive alien species are controlled or eradicated, and management responses are prepared and implemented to prevent their introduction and establishment.
Goal 2: Effectively Conserving and Managing the Ramsar Site Network	
Target 5	The ecological character of Ramsar sites is maintained or restored, through effective planning and integrated management.
Target 6	There is a significant increase in area, numbers and ecological connectivity in the Ramsar Site network, in particular under-represented types of wetlands including in under-represented ecoregions and Transboundary Sites.
Target 7	Sites that are at risk of change of ecological character have threats addressed.
Goal 3: Wisely Using All Wetlands	
Target 8	National wetland inventories have been initiated, completed or updated and disseminated and used for promoting the conservation and effective management of all wetlands.
Target 9	The wise use of wetlands is strengthened through integrated resource management at the appropriate scale, inter alia, within a river basin or along a coastal zone.
Target 10	The traditional knowledge, innovations and practices of indigenous peoples and local communities relevant for the wise use of wetlands and their customary use of wetland resources are documented, respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention, with a full and effective participation of indigenous peoples and local communities at all relevant levels.
Target 11	Wetland functions, services and benefits are widely demonstrated, documented and disseminated.
Target 12	Restoration is in progress in degraded wetlands, with priority to wetlands that are relevant for biodiversity conservation, disaster risk reduction, livelihoods and/or climate change mitigation and adaptation.
Target 13	Enhanced sustainability of key sectors such as water, energy, mining, agriculture, tourism, urban development, infrastructure, industry, forestry, aquaculture and fisheries, when they affect wetlands, contributing to biodiversity conservation and human livelihoods.

5.9.2 SAC Sites

The conservation objectives of North York Moors SAC[23], Durham Coast SAC[24] and Castle Eden Dene SAC[25] are to *"ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:*

- *the extent and distribution of qualifying natural habitats;*
- *the structure and function (including typical species) of qualifying natural habitats; and*
- *the supporting processes on which the qualifying natural habitats rely."*

[23] Natural England. Internationally important Site Conservation Objectives for North York Moors SAC. Available: http://publications.naturalengland.org.uk/publication/6048216608931840 Accessed 07 August 2020.
[24] Natural England. Internationally important Site Conservation Objectives for Durham Coast SAC. Available: http://publications.naturalengland.org.uk/publication/4949450761961472 Accessed 07 August 2020.
[25] Natural England. *European Site Conservation Objectives for Castle Eden Dene SAC*. Available: http://publications.naturalengland.org.uk/publication/5362023844020224

6 Checking for Likelihood of a Significant Effect

This initial assessment considers whether the proposed development is directly connected with, or necessary to, the management of the internationally important sites listed in Table 1 for nature conservation. It also checks whether the proposed development would be likely to have an effect and whether the effect could be significant.

Each relevant internationally important site is considered in turn in Sections 6.1 to 6.5.

6.1 Teesmouth and Cleveland Coast SPA and Ramsar

The proposed development is not directly connected with, or necessary to, the management of this site for nature conservation.

The proposed development will not result in any direct land-take of the Teesmouth and Cleveland Coast SPA and Ramsar through construction. Construction is limited to the proposed development site boundary with no permanent or temporary land-take from the internationally important site required to facilitate construction.

The habitats within the proposed development site consist predominately of hard standing sealed and unsealed surfaces with little to no suitable habitat for qualifying bird features of the SPA and Ramsar. The proposed development site has until recently been fully active, making the area further unsuitable for bird species.

The wintering bird assemblage utilising the areas surrounding the proposed development site can only be estimated using desk study information, as no wintering bird surveys have been undertaken at the time of writing due to the timing of this planning application submission.

Anecdotally[26], common redshank (which qualify as a non-breeding feature of the SPA/Ramsar) have been recorded using habitats with The Slems (a wetland area to the south of the proposed development site) in limited numbers. It is likely other wintering bird species that contribute towards the SPA and Ramsar wintering waterbird assemblage are present within The Slems, albeit in relatively low abundance. Shelduck (part of the waterbird assemblage qualifying feature) have been recorded breeding within the adjacent SIZ site, but not within the boundary of the proposed development site. In 2018, two shelduck were recorded resting next to a small area of transient water within the proposed development site, however their presence was considered to be transient in nature.

Up to four confirmed breeding pairs of shelduck were present within the SIZ site during surveys completed in 2020, three of these being present within the

[26] Pers. Comm., INCA, 2020

Cleveland Channel and Lackenby Channel, less than 100m from the proposed development. It is considered unlikely that shelduck would breed within the proposed development site due to the lack of suitable habitat. It is considered likely that shelduck would consistently breed in the Lackenby and Cleveland Channel due to the suitability of habitat.

Breeding bird surveys conducted for the SIZ planning application confirmed other waterbird species breeding within the adjacent SIZ site that would contribute towards the Teesmouth and Cleveland Coast SPA and Ramsar waterbird assemblages. These include mallard (*Anas platyrhynchos*), moorhen (*Gallinula chloropus*), reed bunting (*Emberiza schoeniclus*) and reed warbler (*Acrocephalus scirpaceus*), grey heron (*Ardea cinerea*), herring gull (*Larus argentatus*) and lesser black-backed gull (*Larus fuscus*). None of these birds were recorded within the proposed development site.

At the construction phase of the proposed development, the loss of habitats within the proposed development site is unlikely to impact on breeding and non-breeding waterbirds designated under the waterbird assemblage as these birds are highly unlikely to utilise the proposed development site.

It is considered highly unlikely that the proposed development site would support breeding habitat for the qualifying, breeding features of the SPA (little tern, common tern and pied avocet). The main breeding ground for little tern is present at Crimdon Denemouth, approximately 14.5km north of the proposed development site[27]. The main common tern breeding colony is located at Saltholme (approximately 1.8km west). The vast majority of common tern utilise marine areas and the Teesmouth area for foraging, specifically the Seaton-on-Tees Channel within Teesmouth[28]. Pied avocet within the SPA and Ramsar site are mostly restricted to Greatham Creek (approximately 4km north-west) and Greenabella Marsh (approximately 5km north-west)[4].

During construction there is the potential for an accidental spillage event, specifically spillage of oil or powdery type construction material entering the River Tees and thus the Teesmouth and Cleveland Coast SPA and Ramsar. There is potential for this to occur where works are taking place adjacent to the Lackenby Channel running along the eastern boundary of the proposed development site which runs into the River Tees. The likelihood of a pollution/spillage event affecting the River Tees (and thus the Teesmouth and Cleveland Coast SPA and Ramsar) reduces with distance of the works from the Lackenby Channel.

[27] Natural England Conservation Advice for Marine Protected Areas: Teesmouth and Cleveland Coast SPA. Available at: https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9006061&SiteName=teesmouth&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&HasCA=1&NumMarineSeasonality=4&SiteNameDisplay=Teesmouth%20and%20Cleveland%20Coast%20SPA. Accessed 29/06/20.

[28] JNCC (2016) *Species Accounts - Species List: Redshank (non-breeding)*. Available at: https://webarchive.nationalarchives.gov.uk/20190307214632/http://jncc.defra.gov.uk/page-1418-theme=default. Accessed 22/06/20.

Any accidental spillage events or contamination of the river could disturb and/or destroy the habitats used by the qualifying features for foraging, commuting and/or roosting. A spillage could also kill invertebrate species within the SPA/Ramsar site that are a foraging resource for the qualifying features.

Due to the proximity of the proposed development site to the SPA and Ramsar, there is potential for noise and visual disturbance of the qualifying features. This could occur where the qualifying species are utilising the sections of the SPA/Ramsar in proximity to the proposed development site, for foraging, commuting and/or roosting.

Coastal species

Of the qualifying features of these European sites, several species are exclusively dependent upon coastal and marine habitats for foraging and commuting and are strictly coastal breeders:

- Sandwich tern within the Teesmouth and Cleveland Coast SPA extent are mostly present within Coatham Sands (approximately 3.6km north-east of the proposed development), North Gare (approximately 3.3km north), Seal Sands (approximately 2.2km north) and other areas around the estuary mouth and feed within the river at Teesmouth[4].
- Little tern are found almost exclusively in the very northern extent of the European sites at Crimdon Dene (approximately 11km north)[4], distant from the proposed development.[29]
- Pied avocet present within the European site extent are mostly restricted to Greatham Creek (approximately 3.3km north-west) and Greenabella Marsh (approximately 4.4km north-west)[4], distant from the proposed development.
- Red knot tend to frequent large muddy estuaries around the coast. Within the European site extents, red knot are mostly confined to the estuary at Seal Sands, and use coastal sites subject to low human disturbance, such as Coatham Sands, Redcar Rocks (approximately 7.2km east) and around Hartlepool Headland (approximately 10km north).

None of these species have been reported within the Wetland Bird Survey (WeBS) data for *Tees Estuary opposite Smith Dock and Hargreaves Quarry*. This recording section is located to the north of the proposed development site within the River Tees.

At *Bran Sands South*, located approximately 0.8km north of the proposed development site, sandwich tern only have been recorded. The five-year average monthly counts for sandwich tern in this recording section range from 0 to 3. The five-year peak monthly counts for this species range from 0 to 12 (recorded in June 2016).

[29] Natural England (2016) Natural England Commissioned Report NECR212: Tern verification surveys for marine sites. Available: http://publications.naturalengland.org.uk/file/4504267260428288. Accessed 22/06/20

The national and international importance of Bran Sands South for each species is represented by the percentage of the relevant threshold level in operation during 2018/2019 based on the five-winter mean of peak counts for each species. For example, 50% would indicate that the five-winter mean of peak counts is half the threshold level. It follows that values of 100% or higher indicate nationally or internationally important numbers of a given species occur on the site.

For sandwich tern, the autumn peak was calculated as 4% of the national threshold and the spring peak was calculated as 6% of the national threshold. The annual peak compared with the national threshold was 8%. The peak counts for sandwich tern were calculated as 0% of the international threshold. These figures are significantly lower than the value that would indicate nationally or internationally important numbers of sandwich tern are present in proximity to the proposed development site.

There is no direct impact upon habitat that would support these four species as a result of construction of the proposed development. This is due to the distance between the proposed development site and the locations in which sandwich tern, little tern, pied avocet, and red knot occur, and also due to the lack of marine and coastal habitats within the proposed development site (even prior to development) that would support foraging, commuting, roosting and/or nesting of these species.

Other species

- Common tern and common redshank are known to occur within the River Tees channel, using it for foraging and commuting purposes. The main common tern breeding colony is located at Saltholme (approximately 4.6km west). The vast majority of common tern utilise marine areas and the Teesmouth area for foraging, specifically the Seaton-on-Tees Channel within Teesmouth[29].
- Anecdotally[30], common redshank are reported to utilise The Slems wetland area to the south of the proposed development site, specifically the open water features and intertidal mud habitats.
- Ruff are present in low numbers (19 individuals) within the European sites, however this equates to 2.4% of the Great Britain population of ruff[4]. Ruff occur within shallow waterbodies across the European site extents, in particular at Saltholme. Ruff are a rare breeder within the UK, with only several reported breeding pairs located in Norfolk (south-east England).

Common tern and common redshank have been recorded in low numbers within the WeBS data for *Tees Estuary opposite Smith Dock and Hargreaves Quarry.*

The five-year average monthly counts for common tern range from 0 to 3. The five-year peak monthly counts for this species range from 0 to 6 (recorded in July 2014).

[30] Pers. Comm., INCA, 2020

The autumn peak compared with the national threshold for common tern was calculated as 8% and the spring peak was calculated as 6% of the national threshold. The annual peak compared with the national threshold was calculated as 10%. The peak counts for common tern were calculated as 0% of the international threshold. These figures are significantly lower than the value that would indicate nationally or internationally important numbers of common tern are present in proximity to the proposed development site.

The five-year average monthly counts for common redshank range from 0 to 14. The five-year peak monthly counts for this species range from 0 to 46 (recorded in August 2016).

The autumn and winter peaks compared with the national threshold for common redshank were calculated as 1% and the spring peak was calculated as 0% of the national threshold. The annual peak compared with the national threshold was calculated as 2%. The autumn peak compared with the international threshold for common redshank was calculated as 1% and the winter peak was calculated as 0% of the international threshold. The spring peak compared with the national threshold was calculated as 0% and the annual peak was 1% of the international threshold. These figures are significantly lower than the value that would indicate nationally or internationally important numbers of common redshank are present in proximity to the proposed development site. However, they have been reported anecdotally to utilise habitat within the adjacent SIZ site.

Common tern and common redshank have also been recorded in low numbers within the WeBS data for *Bran Sands South.*

The five-year average monthly counts for common tern range from 0 to 6. The five-year peak monthly counts for this species range from 0 to 30 (recorded in September 2015).

The autumn peak at *Bran Sands South* compared with the national threshold for common tern was calculated as 24% and the spring peak was calculated as 10% of the national threshold. The annual peak compared with the national threshold was calculated as 28%. The autumn peak compared with the international threshold for common tern was calculated as 1% and the spring peak was calculated as 0% of the international threshold. The annual peak of common tern at *Bran Sands South* was 1% of the international threshold.

The five-year average monthly counts for common redshank range from 1 to 92. The five-year peak monthly counts for this species range from 3 to 190 (recorded in February 2016).

The autumn peak count of common redshank at *Bran Sands South* compared with the national threshold was calculated as 10% and the winter peak was calculated as 19% of the national threshold. The spring peak was calculated as 4% and the annual peak compared with the national threshold was calculated as 19%.

The autumn peak compared with the international threshold for common redshank was calculated as 4% and the winter peak was calculated as 7% of the international threshold. The spring peak compared with the national threshold was calculated as 2% and the annual peak was 7% of the international threshold.

There is no direct impact upon habitat that would support these three species as a result of construction of the proposed development. Although common tern and common redshank have been recorded on sections of the River Tees close to the proposed development site, there is no habitat within the proposed development site that would support foraging, commuting, roosting and/or nesting of these species.

Ruff have not been reported within the WeBS data for *Tees Estuary opposite Smith Dock and Hargreaves Quarry* or *Bran Sands South* recording sections. It is therefore considered that ruff are unlikely to be present within the locality of the proposed development.

Summary

Potential impacts upon the Teesmouth and Cleveland Coast SPA and Ramsar are summarised as:

a) During construction, the risk of loss and/or disturbance of habitats from pollution from within the proposed development site (impacting on the SPA and Ramsar) that support foraging and commuting activities, and/or roosting of the qualifying features. *This aspect is scoped into the AA.*

b) During construction, the risk of noise/visual disturbance of insignificant numbers of qualifying species utilising the SPA/Ramsar site for foraging and commuting activities, and/or roosting. *This aspect is scoped into the AA.*

6.2 North York Moors SAC and SPA

The proposed development is not directly connected with, or necessary to, the management of this site for nature conservation.

The proposed development will not result in any direct loss to the designating features of the North York Moors SAC and SPA through the construction works.

Both the North York Moors SAC and SPA are 10.3km south of the proposed development site at their closet point. There are a number of large housing estates, agricultural fields and major roadways between the proposed development site and the designated sites. Construction of the proposed development is therefore highly unlikely to result in direct disturbance of designating features within the SAC and SPA itself. Any possible direct disturbance caused by the proposed development is likely to be attenuated over this distance.

The proposed development works are located within an area that is highly industrialised and regularly active with other works. The proposed development site is considered to contain little to no suitable habitat for the qualifying features (merlin and golden plover) of the North York Moors SPA.

It is therefore considered that there is no impact pathway and the North York Moors SAC and SPA will not be impacted directly or indirectly from the construction of the proposed development site.

No AA of this aspect is required.

6.3 Durham Coast SAC

The proposed development is not directly connected with, or necessary to, the management of this site for nature conservation.

The proposed development will not result in any direct loss to the designating features of the Durham Coast SAC through the construction phase.

The Durham Coast SAC is over 15km north of the proposed development site. Construction of the proposed development is therefore highly unlikely to result in direct disturbance of the vegetated sea cliffs within the SAC itself.

Any possible indirect disturbance (e.g. pollution) caused by the proposed development is likely to be attenuated over this distance. It is therefore considered that there is no impact pathway and the Durham Coast SAC will not be directly or indirectly impacted from the construction of the proposed development.

No AA of this aspect is required.

6.4 Northumbria Coast SPA and Ramsar

The proposed development is not directly connected with, or necessary to, the management of this site for nature conservation.

The proposed development will not result in any direct loss to the designating features of the Northumbria Coast SPA or Ramsar through the phase.

Both the Northumbria Coast SPA and Ramsar are over 15km north of the proposed development site. Construction of the proposed development is therefore highly unlikely to result in direct disturbance of designating features within the SPA or Ramsar.

Any possible indirect disturbance (e.g. pollution) caused by the proposed development is likely to be attenuated over this distance. It is therefore considered that there is no impact pathway and the Northumbria Coast SPA and Ramsar will not be directly or indirectly impacted from the construction of the proposed development.

No AA of this aspect is required.

6.5 Castle Eden Dene SAC

The proposed development is not directly connected with, or necessary to, the management of this site for nature conservation.

Castle Eden Dene SAC is over 19km north-west of the proposed development site. It is considered that there will be no direct or indirect impact upon the designating feature of this European site, as a result of construction of the proposed development. This is due to the lack of any potential impact pathways between the proposed development site and this European site.

No AA of this aspect is required.

6.6 Consultation

A HRA was undertaken in May 2019 by INCA which assessed the potential impact to the Teesmouth and Cleveland Coast pSPA and Ramsar[31] from the temporary storage and permanent use of spoil arisings at various locations across the STDC site. As soils from the proposed development site may be stored in one of these six locations, and not within the proposed development site, this HRA was reviewed as part of this assessment.

Six locations were assessed with the closest located approximately 100m from the pSPA, and the other locations between 230m and 1km from the parts of the pSPA which has the potential to provide a significant function for pSPA designating bird species. Any likely significant effects were screened out.

This report was provided to Natural England, with a response received on 1 July 2019, stating that Natural England was satisfied with the assessment and agreed that an AA was not required and that there were no likely significant effects from storage of materials in the six locations. The potential impacts from storage of soils in other areas of the STDC site have therefore, not been assessed further in this HRA.

At the time of writing this assessment, no response had been obtained from RCBC on the SIZ application which contains this proposed development site.

A consultation meeting was undertaken on 25th June 2020 with Natural England (represented by Andrew Whitehead). During this meeting the potential scope of the SIZ HRA was discussed in high-level detail, with an indication of the likely scope of the AA provided. At this stage of the project, the HRA had not been fully undertaken and therefore Natural England are expected to provide formal, final comment on receipt of this HRA document.

[31] At the time of the INCA 2019 report, the Teesmouth and Cleveland Coast SPA and Ramsar was still classified as a pSPA and Ramsar.

7 Summary

There are eight internationally important sites present within 20km of the proposed development: the Teesmouth and Cleveland Coast SPA and Ramsar; North York Moors SAC and SPA; Durham Coast SAC; Northumbria Coast SPA and Ramsar; and Castle Eden Dene SAC.

Given the distance and lack of suitable or contiguous habitats for designating bird species within the proposed development site and lack of connectivity, the following internationally important sites have been scoped out of further assessment: North York Moors SAC and SPA; Durham Coast SAC; Northumbria Coast SPA and Ramsar; and Castle Eden Dene SAC.

Possible effects of construction that were considered in relation to their possible impacts on the Teesmouth and Cleveland Coast SPA and Ramsar were those that could involve loss of habitat suitable to support qualifying features, those that could result in pollution and contamination to the estuary, or those that could cause noise/visual disturbance to qualifying features of the site.

Potential impacts upon the Teesmouth and Cleveland Coast SPA and Ramsar are summarised as:

a) During construction, the risk of disturbance and/or loss of habitats within the SPA and Ramsar that support foraging, commuting and/or roosting of the qualifying features, due to pollution from within the proposed development site; and

b) During construction, the risk of noise/visual disturbance of small numbers of qualifying species utilising the adjacent SPA/Ramsar site for foraging and commuting activities, and/or roosting.

Following the consultation response from Natural England, the potential impact from soil storage in other areas of the STDC has not been assessed further in this HRA.

8 Stage 2 – Appropriate Assessment

Following the conclusion of potential disturbance or likely significant effects to the Teesmouth and Cleveland Coast SPA and Ramsar in the Screening Stage, further assessment has been undertaken. The following section comprises Stage 2 of the HRA process, the AA.

8.1 Methodology

The purpose of the AA is to undertake an objective scientific assessment of the implications for the internationally important sites' qualifying features potentially affected by the project in light of their conservation objectives. It is a transparent and iterative process, which is fully documented in this report. It provides the information necessary for RCBC to assess whether the project has an adverse effect on the integrity of internationally important sites.

Where significant effects have been identified during screening, or the significance of effects are uncertain, further consideration has been given to the potential for these effects to be of a sufficient scale and magnitude to hinder the features of the internationally important sites from meeting their conservation objectives. This stage in the process also takes account of mitigation measures, which cannot be considered within the Screening stage of the assessment.

Professional judgement (see Section 4.1.6) has been used in the interpretation of results in relation to assessment of effects, the significance of effects and consequences for the conservation objectives of internationally important sites. A precautionary assessment has been applied in line with current guidance, whereby an effect is deemed significant if the effect cannot be ruled out on the basis of objective information.

With respect to Teesmouth and Cleveland Coast SPA and Ramsar, the AA provides an assessment of the effects of the project in relation to the conservation objectives, outlines any mitigation measures included within the proposed development, and then concludes whether the project is considered likely to have an adverse impact on the integrity of Teesmouth and Cleveland Coast SPA and Ramsar.

8.1.1 Other Projects and Plans

Effects of the following developments have been assessed in-combination with those of the proposed development (Table 3).

Table 3: Schemes included within the in-combination effects assessment.

Address	Application Reference Number	Type of Application	Current Known Status	Description of Development
Grangetown prairie Land East of John Boyle Road and West of Tees Dock Road Grangetown	R/2019/0767/OOM	Outline	Approved 24/07/2020	Outline application for the construction of an Energy Recovery Facility (ERF) and associated development.
Land at Former South Bank Works; Grangetown Prairie; British Steel and Warrenby Area	R/2019/0427/FFM	Full	Approved 27/09/2020	Demolition of structures and engineering operations associated with ground preparation and temporary storage of soils and its final use in the remediation and preparation of land for regeneration and development
South Industrial Zone[32] Land at South Tees Development Corporation east of Smith's Dock road and west of Tees Dock road south bank	R/2020/0357/OOM	Outline	Awaiting determination	Outline planning application for demolition of existing structures on site and the development of up to 418,000 sqm (gross) of general industry (use class b2) and storage or distribution facilities (use class b8) with office accommodation (use class b1), hgv and car parking and associated infrastructure works all matters reserved other than access

All other developments in proximity to the proposed development site have been excluded from the in-combination effects assessment, either due to their distance from the site or due to the absence of effects on the internationally important sites.

[32] The Metals Recovery Site sits wholly within this application boundary.

8.2 Assessment of Impacts

The construction of the proposed development will occur immediately adjacent to the Teesmouth and Cleveland Coast SPA and Ramsar sites. The following potential effects have been scoped into this AA:

a) During construction, the risk of disturbance and/or loss of habitats that support foraging and commuting activities, and/or roosting of the qualifying features, due to pollution from within the proposed development site; and

b) During construction, the risk of noise/visual disturbance of small numbers of qualifying species utilising the adjacent SPA/Ramsar site for foraging and commuting activities, and/or roosting.

These potential impacts are assessed further in the following sections.

8.2.1 Construction of the Proposed Development

8.2.1.1 Effects from Pollution

At present it is known that construction will include remediation of the proposed development site which will include the turnover and replacement of made ground, removal of contaminated soils or materials, removal of existing vegetation and installation of a capping layer.

Any contamination that might be generated during construction (e.g. dust or disturbance of contaminated spoil) will be temporary and in line with the current works occurring within the proposed development site. The construction environment will be controlled through the implementation of a CEMP. The CEMP will set out the standards and procedures to which the developer/ contractor will adhere to, in order to manage the potential environmental impacts of construction works. The CEMP will set out methodologies to prevent and mitigate any accidents including but not limited to spills, storage of soils and control of construction related dust.

The CEMP will be in line with the Environment Agencies (EA) 'Pollution Prevention for Businesses' which details how construction sites can avoid causing pollution from construction related activities such as oil storage and/or spills and contamination of water[33]. A pollution incident response plan will be implemented as part of this CEMP.

Once these best practice construction methods are implemented and adhered to, the likelihood of a pollution incident occurring is considered to be extremely low. The measures will ensure that any spillages are contained quickly and effectively. It is therefore considered that there will be **no significant effects on the integrity of the internationally important sites** as a result of contamination.

[33] DEFRA and Environment Agency (2 May 2019) Guidance: Pollution Prevention for Businesses. https://www.gov.uk/guidance/pollution-prevention-for-businesses. Accessed 22 May 2020.

8.2.1.2 Noise and Visual Disturbance

Noise and visual disturbance may occur during construction activities. The proposed development site is approximately 250m from the River Tees coastline and is separated from the coastline from PD Ports. The proposed development site has until recently been fully active, with large mobile and fixed machinery being used. The proposed development site is adjacent to the Lackenby Channel and The Slems which are utilised by designating features of the SPA and Ramsar.

A study by Wright *et al.* (2010)[34] on the impacts of noise disturbance on waterfowl birds concluded '*Intentional disturbance at very low dB(A) levels is highly unlikely to elicit a behavioural response, while at above 65.5 dB(A) a behavioural response of some kind becomes more likely to occur than no response. At above 72.2 dB(A) flight with abandonment of the site becomes the most likely outcome of the disturbance. If non-response and non-flight response were taken to be relatively harmless, and flight responses potentially costly (in terms of energy expenditure), then for those species studied at the site a costly outcome becomes more likely at = 69.9 dB(A).*'

Deleterious effects of chronic noise exposure have been suggested to begin at levels as low as 55–60 dB(A) (Dooling & Popper 2007)[35], though data on physiological effects are lacking. The effects of chronic or impulsive noise on the population density of wintering birds is also poorly understood.

The ranges in noise which caused behavioural responses were outlined as:

- No observable behavioural response: 54.9–71.5 dB(A) (with a high proportion of extreme outliers).
- Non-flight behavioural response: 62.4–79.1 dB(A).
- Flight with return: 62.4–73.9 dB(A).
- Flight with all birds abandoning the site: 67.9–81.1 dB(A).

A study by Cutts *et al.* (2009)[36] determined that ambient construction noise levels should be restricted to below 70dB(A) as birds will habituate to regular noise below this level. Where possible, sudden irregular noise above 50dB(A) should be avoided as this causes maximum disturbance to birds.

As part of the wider SIZ application, a noise assessment to determine the potential impacts from piling works was undertaken. This assessment showed that the noise levels will be below 50dB(A) even during hydraulic piling.

It is considered that any noise and vibration caused by site clearance and remediation of the proposed development site will therefore be less than 50dB(A),

[34] Wright, MD; Goodman, P; and Cameron, TC. (2010). Exploring behavioural responses of shorebirds to impulsive noise. Journal: Wildfowl (2010) 60, pp 150 -167. Wildfowl and Wetlands Trust
[35] Dooling RJ. & Popper AN. (2007) The Effects of Highway Noise on Birds. Environmental BioAcoustics LLC Rockville, MD 20853.
[36] Cutts, N., Phelps, A. & Burdon, D. (2009) Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.

and will likely be similar to the current levels of noise within the proposed development site as both large mobile and fixed machinery were very recently active within the proposed development site. This construction work has also been ongoing for several years.

If the construction noise were to increase above the current baseline, the construction noise will be temporary and not as significant as noise that may be created from hydraulic piling. It is therefore considered unlikely that wintering birds utilising the River Tees or adjacent habitats in proximity to the proposed development site would be disturbed as a result of noise during construction activities.

As the proposed development site until recently has been fully active, with plant and machinery moving within the proposed development site on a regular basis, it is not considered that there will be a visual disturbance as a result of construction. The Waterbird Disturbance Mitigation Toolkit identifies occasional movement of cranes as a moderate to low stimuli for disturbance[37]. It is considered that birds flying over the proposed development site or birds that are present within The Slems and Lackenby Channel have become habituated to the ongoing construction movement within this area. However, as detailed the Waterbird Disturbance Mitigation Toolkit' shelduck specifically are considered to be…

"a *wary species and are highly sensitive to visual disturbance. Typically, they approach construction works no closer than 300m and are affected by visual disturbance up to 500m away from a source. However, [shelduck] are subject to a high degree of habituation and if further exposure to sounds of the same or greater level can lead to no response to stimuli.*"

It is highly likely that shelduck breeding within the Lackenby Channel have become habituated to the visual disturbance from the ongoing works within the proposed development site and surrounding PD Ports as discussed above. However, due to the low number of shelduck that breed within the Tees Estuary, the importance of these breeding shelduck and sensitive nature of the species to visual disturbance, it is considered, that in the absence of mitigation, there is the potential for a significant adverse effect to breeding shelduck which are part of the waterbird assemblage of the Teesmouth and Cleveland Coast SPA (Section 5.1).

The following actions are proposed to mitigate the significant adverse effect to breeding shelduck:

- Avoid undertaking construction works within 300m from the Lackenby Channel during the breeding bird season, considered to be from March to August (inclusive);
- If avoidance is not possible, screening should be erected along the north-eastern boundary of the proposed development site to reduce the visual and noise impacts upon the Lackenby Channel. Screening would involve the use

[37] Cutts, N., Hemingway, K. & Spencer J. (2013) *Waterbird Disturbance Mitigation Toolkit: Informing Estuarine Planning & Construction Projects*. Produced by the Institute of Estuarine & Coastal Studies (IECS), University of Hull. Available at: http://bailey.persona-pi.com/Public-Inquiries/M4%20-%20Revised/11.3.67.pdf. Accessed 07 August 2020.

of opaque barriers, which would also prevent site operatives from unnecessary access to Lackenby Channel; or

- If screening is not possible; a SQE should undertake surveys at the earliest possible stage and throughout construction to determine if breeding shelduck are disturbed from the construction works. If shelduck are found to be disturbed the SQE will be required to propose suitable mitigation immediately, which may involve screening.

Following the implementation of mitigation, there will be no significant adverse effect on the breeding shelduck population.

There is still the potential for noise disturbance to occur if works are to significant increase in a short period of time during the remediation works.

The following Best Practicable Means (BPM) will be included in the CEMP in order to further reduce the potential noise disturbance effects on qualifying species of the SPA. These are based on low noise emission plant and processes, as specified in British Standard BS5228-1 Annex B.

BPM would include noise and vibration control at source, for example:

- The selection of quiet and low vibration equipment, review of construction programme and methodology to consider quieter methods (including non-vibratory compaction plant, where required), location of equipment on site away from dwellings and The Slems area, control of working hours, the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; and
- Screening (as recommended for breeding shelduck)– for example local screening of equipment, perimeter hoarding or the use of temporary stockpiles.

Once the mitigation measures are implemented, it is considered that the effects of visual and noise disturbance on qualifying species of the SPA, including breeding shelduck will be significantly reduced. Taking into account the low numbers of SPA qualifying species that are anticipated to be impacted by noise and visual disturbance, combined with the ongoing works already occurring within the proposed development site and likely habituation of birds to these movements, **no significant effect on the integrity of the internationally important sites** are anticipated during the construction phase of the proposed development.

8.3 Assessment of In-Combination Effects

8.3.1 Proposed Energy Recovery Facility (R/2019/0767/OOM)

The proposed ERF development covers an area of approximately 10ha (NGR NZ54312145) and will be capable of processing up to 450,000 tonnes of waste per annum.

A HRA screening report was produced in December 2019[38] and considered the risk of pollution to the Teesmouth and Cleveland Coast SPA and Ramsar site from construction and operation of the proposed development.

The HRA concluded that there would be no likely significant effect and pollution to the watercourse would either be insignificant or would be controlled in the overarching design of the facility. The HRA determined that without mitigation there were no likely significant effects from the proposed ERF development on the Teesmouth and Cleveland Coast SPA and Ramsar sites, therefore, no AA was required.

It is therefore considered, that as the proposed ERF development will control pollution to the SPA and Ramsar in the overarching design of the facility and the proposed development site will separately control pollution impacts, no additional mitigation will be required to specifically control in-combination effects of these developments.

8.3.2 Land at Former South Bank Works (R/2019/0427/FFM)

The potential effects of this application on Teesmouth and Cleveland Coast SPA and Ramsar was assessed under a HRA Screening[39], undertaken in May 2019 by INCA (see Section 6.6).

Six locations for the potential storage of soil were assessed and any likely significant effects were screened out. This report was provided to Natural England, with a response received on 1 July 2019, stating that Natural England was satisfied with the assessment and agreed that an AA was not required.

It is therefore considered that there are no likely in-combination effects resulting from scheme in proximity to the proposed development.

8.3.3 South Industrial Zone (R/2020/0357/OOM)

The potential effects of this application on Teesmouth and Cleveland Coast SPA and Ramsar was assessed under a HRA in July 2020 by Arup[40].

This development covered the land within the proposed development site and thus included mitigation to cover any potential impacts from construction within the proposed development site.

It is therefore considered that there will be no cumulative impacts from the proposed SIZ and the Metals Recovery Site as both developments have implemented appropriate mitigation to control pollution to the River Tees and thus the Teesmouth and Cleveland Coast SPA and Ramsar.

[38] JBA Consulting (December 2019) Energy Recovery Plant: Habitats Regulations Assessment (HRA) Screening Report.
[39] INCA (May 2019) Information to Inform Screening for a Habitats Regulations Assessment of Ground Preparation Works. Report ID INCA 201916.
[40] Arup on behalf of STDC (July2020) South Industrial Zone, South Tees. Environmental Statement. Chapter D: Biodiversity and Ecology.

8.4 Summary

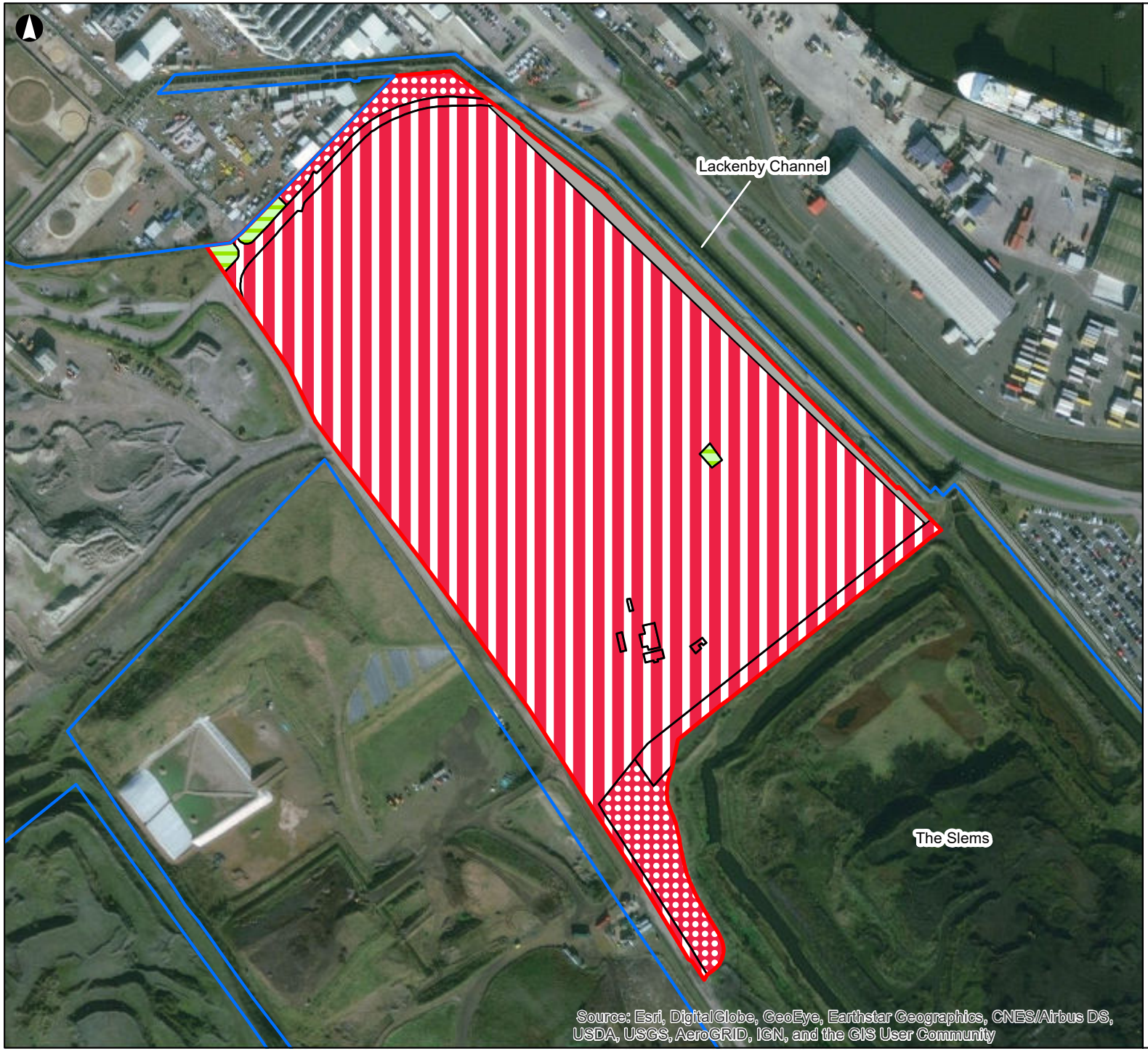
Based on the information available, it is considered that there will likely be **no significant effects** to the integrity of the Teesmouth and Cleveland Coast SPA and Ramsar from the construction of the proposed development following the implementation of avoidance or screening for shelduck and implementation of a CEMP.

It is considered likely that no further stages of the HRA process will be required.

Appendix A

Red Line Boundary for the Proposed Development Site

A4



Legend

- Metals Recovery Site Boundary
- South Industrial Zone Boundary
- 17 - Sparsely Vegetated Land – Ruderal/Ephemeral
- g3c - neutral grassland
- u1b - Developed land sealed surface
- u1c - Urban Artificial unvegetated, unsealed surface

Coordinate System: British National Grid

Metres

0 65 130 260

Rev	Date	By	Chkd	Appd
Rev	14-08-2020	NM	JAB	FM

ARUP

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Teesdale South, Thornaby Place,
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Client

South Tees Development Corporation

Project Title

Metals Recovery Site

Drawing Title

Red Line Boundary and UK Habitat Classification Survey Map

Scale at A4

1:5,000

Role

Ecology

Suitability

Information

Arup Job No

276320-00

Rev

Issue

Name

Appendix A

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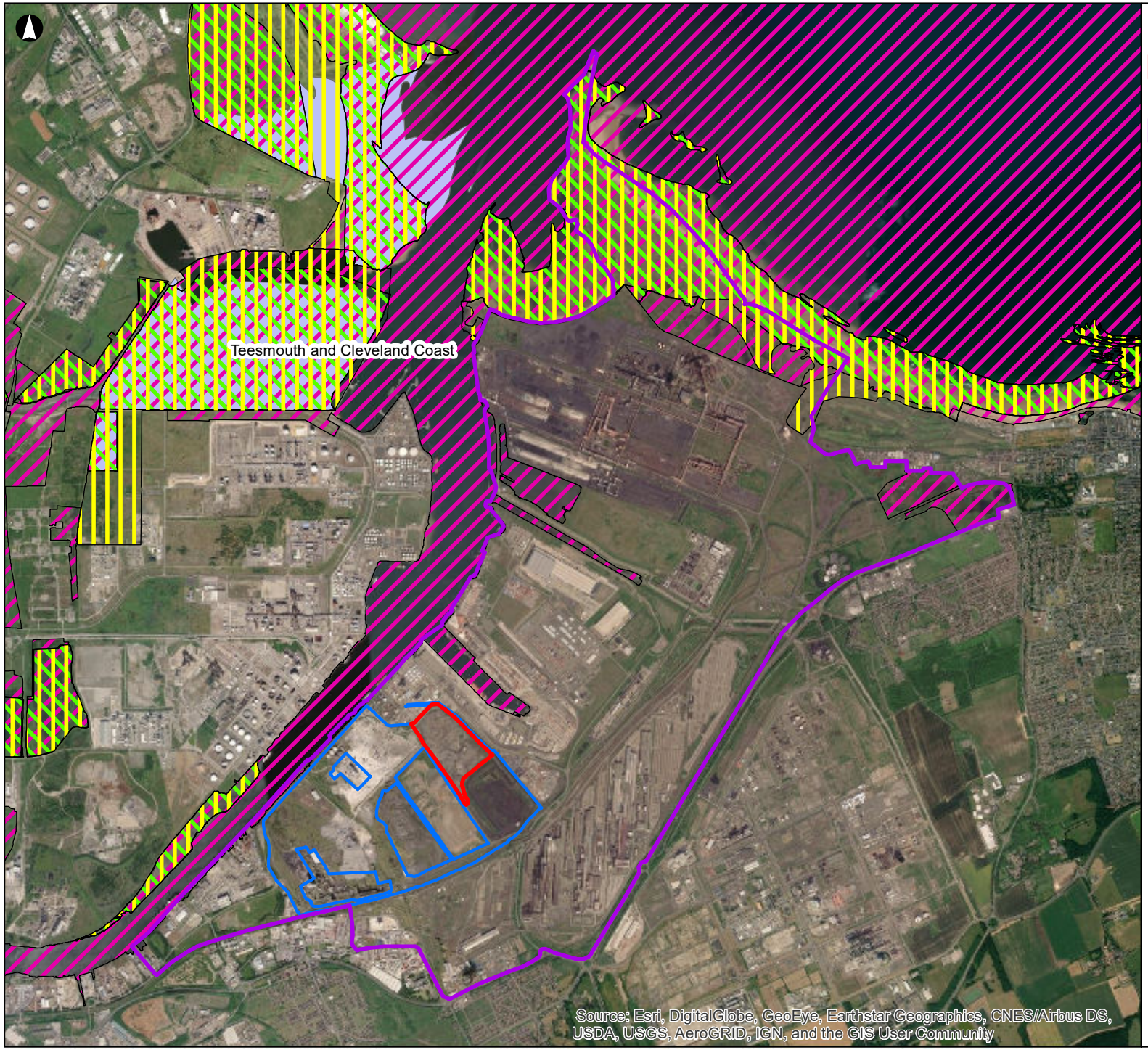
Appendix B

Metals Recovery Site Location

A4



Legend

- Metals Recovery Site Boundary
- South Industrial Zone Boundary
- STDC Boundary
- Ramsar
- Sites of Special Scientific Interest
- Teesmouth & Cleveland SPA
- National Nature Reserves

Coordinate System: British National Grid

Metres

0 550 1,100 2,200

Rev	Date	By	Chkd	Appd
Rev	13-08-2020	NM	JAB	FM

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South Tees Development Corporation

Project Title

Metals Recovery Site

Drawing Title

Metals Recovery Site Location Plan

Scale at A4

1:45,000

Role

Ecology

Suitability

Information

Arup Job No

276320-00

Rev

Issue

Name

Appendix B

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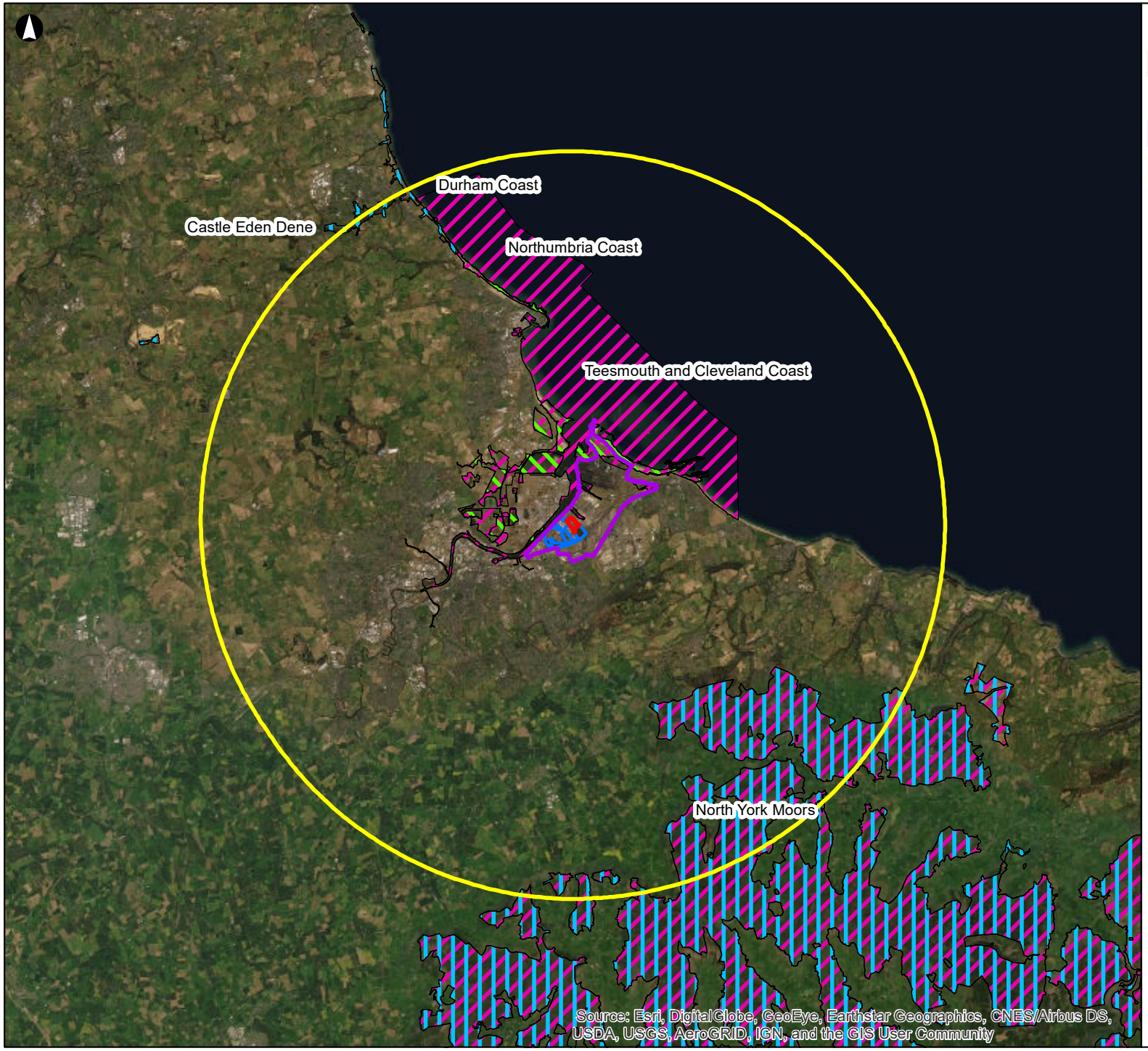
Appendix C

Map of Internationally Important Sites under Consideration

A4



Legend

- Metals Recovery Site Boundary
- South Industrial Zone Boundary
- STDC Boundary
- 20km Buffer
- Special Areas of Conservation
- Ramsar
- Special Protection Areas

Coordinate System: British National Grid

Metres

0 3,850 7,700 15,400

Rev	Date	By	Chkd	Appd
Rev	13-08-2020	NM	JAB	FM

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Client

South Tees Development Corporation

Project Title

Metals Recovery Site

Drawing Title

Internationally Designated Sites under Consideration

Scale at A4

1:300,000

Role

Ecology

Suitability

Information

Arup Job No

276320-00

Rev

Issue

Name

Appendix C

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