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IMMINGHAM EASTERN RO-RO TERMINAL

Cover Letter to PINS regarding the Applicant's Deadline 3 Submissions

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Attn Lily Robbins

Our Ref	Your Ref	Date
10276966	TR030007	11 September 2023

Dear Ms Robbins

Immingham Eastern Ro-Ro Terminal (TR030007)
Deadline 3 Submission

We write on behalf of the Applicant, Associated British Ports, in respect of the above. Further to the Examining Authority's (ExA's) Rule 13 and Rule 16 Letter dated 29 August 2023 **[PD-012]**, we confirm that the Applicant will attend and speak at all Hearings identified in the Letter.

Additionally, further to the Examination Timetable set out at Annex A of the Rule 8 Letter dated 2 August 2023 **[PD-009]**, we are today submitting the documents set out in the table below in response to Deadline 3. Please accept our apologies that it has not been possible to provide a comprehensive response to all issues raised in the time available due to the length of the submissions received at Deadline 2. Full responses will be supplemented into the Examination in due course and well in advance of the Hearings which commence on 27 September 2023.

Document Title	Document Reference
Guide to the DCO Application V4 (Clean)	1.4
Guide to the DCO Application V4 (Tracked)	1.4
Draft Development Consent Order V3 (Clean)	3.1
Draft Development Consent Order V3 (Tracked)	3.1
Statement of Common Ground Tracker V3	10.2.9
Principal Areas of Disagreement Tracker V3	10.2.10
Protective Provisions Tracker V3	10.2.11

Applicant's Response to CLdN's Written Representation	10.2.26
Applicant's Response to DFDS' Written Representation	10.2.27
Applicant's Interim Comments on DFDS's Navigational Risk Assessment	10.2.28
Applicant's Response to the Environment Agency's Written Representation	10.2.29
Applicant's Response to IOT's Written Representation	10.2.30
Applicant's Interim Comments on IOT's Navigational Risk Assessment	10.2.31
Applicant's Response to the Marine Management Organisation's Written Representation	10.2.32
Applicant's Response to Natural England's Written Representation	10.2.33
Applicant's Response to Network Rail's Written Representation	10.2.34
Applicant's Response to ExQ1 Submissions by IPs	10.2.35
Port Marine Operational Procedures Manual – Overview of the ABP Marine Safety Management System	10.2.36

Marine Safety Management System (MSMS)

Action Point 30 arising from ISH2 **[EV3-012]** requested that the Applicant *"consider what parts of the Marine Safety Management System can be shared with the IOT's Operator's request".* In the cover letter submitted at Deadline 2 **[REP2-001]**, the Applicant confirmed that it intended to release the MSMS manual at Deadline 3.

An effective MSMS is a requirement of the Port Marine Safety Code. It must be based on formal risk assessment and include an approach for incident investigation. The Code also strongly recommends that Organisations that are not Statutory Harbour Authorities seek proportionate compliance through the adoption of key measures, including an MSMS. The Code, in Section 2.12-2.14, goes on to elaborate on the contents of an MSMS, which should include safety policies and procedures; assigning responsibility for matters of marine safety and preparations for emergencies. The form and function of the MSMS is tailored to each Organisation.

ABP has a centralised document control method, with a 'core' MSMS manual, updated at Group level. The MSMS Manual which the Applicant is submitting for Deadline 3 is a component part of the MSMS. This manual is used at each port in the Group as a standardised format, with blue local port information boxes. The Immingham MSMS manual is a sign-posting document, which is accessed by port staff on the company intranet 'iPorts'.

The document is submitted as **document reference 10.2.36 - Port Marine Operational Procedures Manual – Overview of the ABP Marine Safety Management System**.

Signposting Documents

To assist with (and as part of our ongoing engagement) with Natural England (NE), we have provided a variety of signposting documents which direct NE to our previous submissions in

relation to their comments and/or queries. The signposting documents in respect of: Air Quality; Artificial Lighting; Bird Disturbance; and Underwater Noise, can be found at **Appendices 1-4**.

If you have any questions arising from the information above, please do not hesitate to contact us at [redacted] or [redacted].

Yours sincerely

Brian Greenwood

Brian Greenwood
Clyde & Co LLP

Appendix 1 – Air Quality Signposting Document

Signposting Document

Subject: **Immingham Eastern Ro-Ro Terminal (IERRT) – Air Quality**

Status: **Relevant Representations Signposting Response – 12 June 2023**

1. Introduction

1.1. In their Relevant Representations dated 19 April 2023, Natural England raised a number of points regarding air quality. This document responds to and clarifies the points raised.

1.2. This signposting document references:

- Application Document Reference number 8.2.13 - Environmental Statement - Volume 1 - Chapter 13 – Air Quality (APP-069); and
- Application Document Reference number 9.6 - Habitats Regulations Assessment (APP-115) (HRA).

1.3. It addresses below Natural England's comments made in Part II, Table 1 of their Relevant Representation, specifically issues 1, 2, 3, 4, and 41 relating to air quality. In each case, Natural England's comments are first summarised and ABP's responses to those comments are then provided.

2. NE key issue ref 1 – General comments and further information required in relation to the assessment methodology for air quality impacts from construction and operational phase traffic and/or marine vessel emissions

1) Assessment of potential air quality impacts from construction and operational phase traffic should be undertaken in-line with guidance note NEA001 – for any process contributions (PC) that exceed 1% of the critical load or level of the relevant environmental benchmark alone or in-combination, the results will need to be considered in the context of the predicted environmental concentration (PEC), which also takes into account background levels

2.1. The guidance referred to is Natural England's '*Approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*'. Step 2 of the guidance requires the identification of sensitive features within 200 m of a road. In terms of the SAC/SPA, the only habitat within 200 m of a road affected by the Project (i.e., the new jetty and the new internal approach road to and from the jetty) is Mudflat. The only traffic using the jetty and approach road to and from the jetty will be traffic associated with the Project. Emissions from these roads have been quantified to inform the air quality assessment as set out in Chapter 13 of the ES (APP-069). Review of the Air Pollution Information System (APIS) shows that Mudflat habitat has no established available critical load estimate. On this basis, coupled with the unvegetated and intertidal nature of that habitat, it is considered that the approach undertaken in the ES is robust.

2) Currently unclear as to why the receptor points in the SAC detailed in Table 20 have been chosen, or on what basis nearer habitat types have been excluded

2.2. The approach undertaken and reported in the ES is considered appropriate. The saltmarsh locations selected for assessment were the closest estuary habitat to the IERRT project within the SAC that could be sensitive to pollutants and for which a suitable Critical Load is available, as opposed to intertidal and subtidal unvegetated habitats. Review of habitat mapping showed that whilst there were instances of Mudflat and Sandflat habitat closer to the IERRT Project than the closest Saltmarsh habitat, APIS indicated that Mudflat and Sandflat habitat[1] had no established available critical load estimate. It was also noted that APIS suggested that Sandbank habitat[2] and Estuaries habitat were not sensitive to eutrophication. On this basis – the lack of sensitivity and critical load estimate, coupled with the intertidal nature of the environment – the approach undertaken in the ES is considered robust. The saltmarsh is the most sensitive habitat present within this part of the European site.

3) Identification of the critical levels (CLe) and critical loads (CLo) for relevant habitat types is unclear, and these are currently referred to as "air quality standards"

2.3. The phrase "Air Quality Standards" was used as a collective term to cover air quality objectives, Critical Loads, Critical Levels and other Environmental Assessment Levels. All tables that show pollutant concentrations and deposition rates with a range in their air quality standards illustrate exceedances of the lower range value in Bold font. Subsequent text relating to these tables, including in paragraphs 13.7.5 and 13.8.58 of Chapter 13 of the ES, describe the concentration and deposition rate against the lower part of the Critical Load/Level range in air quality standard.

2.4. Regarding the point on the Critical Load for N deposition on the Saltmarsh habitat, the appropriate Critical Load range at the time of the assessment was 20-30 kgN/ha/yr. The correct footnote had been applied to Table 13.15 and Table 13.16. An incorrect footnote (4) was applied to Table 13.11. It is noted that on 25th May 2023, the nitrogen deposition Critical Load for saltmarsh habitat was updated.

4) Consideration of NH3 for either construction or operational traffic

2.5. There are no public roads that will be used by construction or operational traffic that are within 200 m of an SAC/SPA. The nearest public road is Queens Road leading to the East Gate entrance to the Port, which is approximately 500 m from the SAC/SPA. The nearest air quality sensitive habitat within the SAC to a public road used by IERRT project construction traffic and operational traffic is saltmarsh habitat 1.2 km away from access to and from the West Gate. As a consequence, in line with guidance NEA001, consideration of NH_3 for either construction or operational traffic is not required.

[1] Annex I habitat type: "Mudflats and sandflats not covered by seawater at low tide".

[2] Annex I habitat type: "Sandbanks which are slightly covered by sea water all the time".

5) Current assessment of marine vessels (construction and operational phases) uses the same guidance as for road traffic emissions and assumes that impacts of these emissions should only be considered 200m from the route – further reference to evidence and/or guidance that this is a reasonable distance to use

2.6. The ES refers to 200 m from a marine vessel route in response to a previous stakeholder comment raised by Natural England, as presented in Table 13.3 of the ES. That stated that - '*It is not clear whether vessels will pass within 200 m of sensitive habitats when moving through the estuary. This should be clarified in the ES and HRA'.* Table 13.3 and Paragraph 13.8.46 of the ES simply confirms that vessels will not pass within 200 m of a sensitive habitat. On this basis, it is concluded that 200 m is the most appropriate distance to use in the assessment.

6) Assessment of acid deposition impacts to relevant designated sites

2.7. Review of APIS showed that within the Humber Estuary SAC, only dune habitats were sensitive to acid deposition. The nearest such habitat is 12.5 km away at Cleethorpes. There is no requirement for the assessment in the ES to quantify impacts at such a distance.

7) Which plans and/or projects have been considered in the "future baseline" for traffic, or whether any other emitting projects have been included in the cumulative and in-combination assessment, such as industrial or energy sites

2.8. A list of other developments included in the inherently cumulative traffic data is provided in Section 6.1 of the Transport Assessment (Appendix 17.1 of Volume of the ES (AS-008)). The traffic data for the development year assessments has been adjusted for traffic growth in line with standard practice. This data has then been readjusted for the other development traffic flows. As noted in point 4 above, no section of the public road network affected by the Project passes within 200 m of the SAC/SPA. The only roads with 200 m of the SAC/SPA are the jetty and jetty approach road, neither of which will accommodate traffic flows from other developments.

2.9. Existing sources of non-road emissions to air are captured in the background pollutant concentrations used to inform the assessment.

8) See 4.4 of NEA001 for our guidance on what should be considered as part of the in-combination assessment

2.10. Noted. The assessment undertaken is compatible with this guidance.

3. NE key issue ref 2 – Potential air quality impacts from construction traffic and/or marine vessel emissions on Humber Estuary SAC/SPA/Ramsar designated features

1) Site plant will emit NO2, PM10, and PM2.5, however, these also emit and contribute to NOx and NH3 emissions, and N deposition – site plant emissions are not quantified but are instead noted as "transient and intermittent" –

3.1. Paragraph 13.3.12 of Chapter 13 of the ES states that NRMM and site plant has the potential to increase concentrations of the pollutants listed. It is agreed that NOx emissions will increase concentrations of NOx, including NO2, which in turn will increase nitrogen deposition rates. The qualitative assessment described in the ES is considered to be proportionate, not only because of the intermittent and transient nature of emissions, but also because of the distance between the construction site and the nearest air quality sensitive habitats. The saltmarsh locations selected for assessment were the closest estuary habitat within the SAC that are sensitive to pollutants where those habitats aren't subject to tidal inundation. The nearest Saltmarsh habitat is over 3 km from the construction site. Site plant and NRMM would have near ground level emission exhausts, meaning that like road traffic emissions, this source of emissions will likely impact on locations within a few hundred metres of the source. Review of habitat mapping showed that whilst there were instances of Mudflat and Sandflat habitat closer to the Project than the closest Saltmarsh habitat, APIS indicated that Mudflat and Sandflat habitat had no established critical load estimate available. It was also noted that APIS suggested that Sandbank habitat and Estuaries habitat was not sensitive to eutrophication. The nature of site emissions and the distance between those emissions, and the sensitive receptors where pollutants are not affected by the intertidal nature of the environment, confirms the robustness of the approach undertaken in the ES.

2) Construction traffic currently excluded with the reasoning that on average there will be fewer than 100 HGVs per day - there will be peaks where 200 HGVs per day is exceeded, therefore a precautionary approach is advised, and further assessment of construction traffic should be provided

3.2. Air quality assessment guidance is primarily based on annual average daily traffic flows, not peak daily flows. The reason for this being that the majority of air quality standards relating to road traffic emissions are based on an annual average concentration or deposition rate. Therefore, average values are more appropriate for comparison with these metrics than peak values. Given the distance between the nearest sections of the SAC/SPA boundary and the construction traffic routes, and the greater distance between the sensitive Saltmarsh habitats and the construction routes, the approach in the assessments is considered to be robust and a proportionate level of detail.

4. NE key issue ref 3 – Potential air quality impacts from operational traffic and/or marine vessel emissions to air on Humber Estuary SAC/SPA/Ramsar designated features

1) Unclear as to what value the 'air quality standard' refers to – advise that the predicted environmental concentration (PEC) should be provided, and the percentage of the PEC to the environmental benchmark should be calculated (environmental benchmark should be the critical level for NOx)

4.1. Natural England have commented that - "*Table 20 of the HRA states that the Process Contributions (PC) of the development exceed the critical level for annual mean nitrogen oxides (NOx) at three sections of saltmarsh (SAC3: 1.6%, SAC4: 1.7% and SAC5: 1.0%) within the Humber Estuary designated site*". This is a misinterpretation of what is shown in Table 20 of the HRA. The process contribution does not exceed the Critical Level for NOx, which is the

air quality objective of 30 µg/m3 as an annual mean (see Table 13.15 of the ES). Table 20 and the text in the paragraph that follows it (4.7.8) shows that the change in annual mean NOx concentrations due to the proposed development (the Process Contribution) exceeds the screening criteria of 1% of the Critical Level (i.e., is greater than 1%) at SAC3, SAC4 and SAC5. However, if total NOx concentrations (i.e., the Predicted Environmental Concentration (PEC)) are not forecast to exceed the 30 µg/m³ Critical Level, even with the development factored into modelling, then no adverse effect is forecast to arise irrespective of whether the impact of the scheme exceeds 1% of the Critical Level[3]. Paragraph 4.7.9 of the HRA then confirms that where the change in annual mean concentration does exceed 1% of the Critical Level, total NOx concentrations (the PEC) account for less than 70% of that standard. In line with Environment Agency guidance, a Process Contribution of >1% can be screened as insignificant where the Predicted Environmental Concentration is less than 70% of the relevant air quality standard. As such, the PEC does not exceed the Critical Level at any of these three locations.

2) Unclear whether the above exceedances for NOx are associated with road traffic or marine vessels

4.2. There is no requirement to provide a breakdown of impacts by source. It is confirmed, however, that the contribution of Project emissions to concentrations and deposition rates at the SAC habitats were predominantly due to the vessel emissions. The nearest section of Saltmarsh habitat to the nearest road used by Project traffic (internal road within the Port of Immingham, on the approach to and from the West Gate) is 1.2 km. Over such a distance, the contribution of road traffic emissions is negligible.

3) Mitigation currently proposed is generic and unquantified – onsite emissions currently appear to lead to an exceedance of NH3 and NOx at several SAC receptors, so mitigation should be considered within the HRA

4.3. Natural England have commented that - "*operational onsite emissions currently appear to lead to an exceedance of NH3 and NOx at several SAC receptors, so mitigation* should *be considered within the HRA*". This is a misinterpretation of what is presented in Table 20 of the HRA and text in the paragraphs that follow it. As detailed in response (1), there is no reported exceedance of the NOx air quality standard – the air quality objective of 30 µg/m³ as an annual mean is not forecast to be exceeded even with the scheme in operation (see Table 13.15 in Chapter 13 of the ES).

4.4. Table 20 of the HRA does show an exceedance of the lower extent of the air quality standard for nitrogen deposition, which is the 20–30 kgN/ha/yr Critical Load relevant to Saltmarsh habitat, at receptor SAC1. However, the exceedance only occurs at a location where the change/impact in deposition rate due to the proposed development is less than 1% of the air quality standard (the Critical Load) and is therefore imperceptible.

[3] The critical level is defined as 'the concentration of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge'. The implication being that provided the critical level is not exceeded, there is no expectation of an adverse effect.

4.5. Paragraph 4.7.10 of the HRA refers to Table 13.16 of the ES for NH3 and NH3 derived nitrogen deposition predictions. Table 13.16 of the ES does show an exceedance of the lower extents of the relevant air quality standard for NH3, which is the 1–3 µg/m3 Critical Level as an annual mean, and nitrogen deposition, which is the 20-30 kgN/ha/yr Critical Load deposition rate, at all or some of the SAC receptors considered. However again, these exceedances occur at locations where the change in NH3 concentrations and nitrogen deposition rates due to the proposed development is less than 1% of the Critical Level and Critical Load respectively. Furthermore, it should also be noted that comparison to the lower value of the Critical Level range for NH3 is precautionary, because bryophytes are unlikely to be present at the habitats considered.

5. NE key issue ref 4 – Potential for air quality impacts to the Humber Estuary SPA, SAC and Ramsar from construction dust

1) Further assessment on potential air quality impacts of construction dust should be provided in the appropriate assessment

5.1. Mudflat habitat is covered by seawater at high tide, which will occur twice per day. The sediment loading in the tidal water column will cause large amounts of sediment to be mobilised (both deposited and washed away) on every tide due to natural processes. The assessment identified a suite of mitigation measures that would control dust emissions to the extent that a significant effect would not occur. Including reference to the mudflat/sandflat habitat in Chapter 13 would not change the list of measures already included in the ES and CEMP.

5.2. The reference to the presence of mudflats and sandflats habitat within the footprint of the IERRT project within Table 2 of the HRA identifies that this feature has been taken forward to LSE screening, where it has been identified that potential pathways exist. In the case of dust smothering during construction, there is no identified pathway by which an effect could occur as the habitat is not susceptible to the effects of dust smothering, and, therefore, the habitat feature is not included in Table 3 for this impact pathway. Even if a more precautionary approach had been taken within the HRA, and the habitat feature had been included in Table 3 for LSE screening against this impact pathway, the lack of pathway for LSE would have been stated and, therefore, the conclusions of the HRA would not change. As a consequence, further information on the habitat feature is not required to inform this conclusion within either the ES chapter or the HRA.

6. NE key issue ref 41 – Construction and operational phase traffic impacts on all relevant terrestrial SSSIs

1) Construction traffic has not been considered as on average there will be less than 200HGV movements per day – there are predicted to be peaks of over 200HGV movements per day, therefore advise that a precautionary approach is taken in the assessment of this for any relevant terrestrial SSSIs –

6.1. As noted in the response to NE key issue ref 2 above, air quality assessment guidance is primarily based on annual average daily traffic flows, not peak daily flows. The reason for this being that the majority of air quality standards relating

to road traffic emissions are based on an annual average concentration. Therefore, average values are more appropriate for comparison with these metrics than peak values. Basing an assessment on peak daily flows is typically done when there is uncertainty in the average flow data. That is not the case in this instance.

2) Omission of certain SSSIs from operational traffic assessment (e.g., Hatfield Chase Ditches SSSI)

6.2. APIS does not provide any information on the Hatfield Chase Ditches SSSI; there is a lack of Critical Load information and habitat type. Most freshwater bodies are not sensitive to nitrogen because they are often phosphorus limited and thus phosphorus is the most significant growth limiting nutrient rather than nitrogen. It is not considered that this SSSI is sensitive to air pollution.

3) In- combination exceedance is noted at identified SSSIs such as Edlington Wood SSSI – unclear why this is currently dismissed as insignificant

6.3. The in-combination impacts reported in Table 13.19 include Project concentrations in the year of opening, minus a future baseline concentration assuming no traffic growth or committed development flows since 2019. It shows that at Edlington Wood SSSI and the other two SSSI locations considered in the assessment (both on Potteric Carr SSSI), traffic growth and committed development flows since 2019 increase NOx concentrations by 56.2%, 24.7% and 18.6% of the air quality objective, but also that the direct impact of the IERRT Project increases NOx concentrations by less than 1% of the air quality standard, which is the air quality objective of 30 µg/m^3 as an annual mean. The impact of the Project, therefore, is negligible, irrespective of the contribution from traffic growth and committed development since 2019.

Appendix 2 – Artificial Lighting Signposting Document

Signposting Document

Subject: **Immingham Eastern Ro-Ro Terminal (IERRT) – Artificial Lighting**

Status: **Relevant Representations Signposting Response – 12 June 2023**

1. Introduction

1.1. In their Relevant Representations dated 19 April 2023, Natural England raised a number of points regarding artificial lighting. This document responds to and clarifies the points raised in those Relevant Representations by reference to the submitted (IERRT) environmental statement.

1.2. This signposting document references:

- Application Document Reference number 8.2.9 - Environmental Statement - Volume 1 - Chapter 9 - Nature Conservation and Marine Ecology (APP-045); and
- Marine Ecology (APP-045) and Application Document Reference number 9.6 - Habitats Regulations Assessment (APP-115) (HRA).

1.3. It addresses below Natural England's comments made in Part II, Table 1 of their Relevant Representation, specifically issue 10. In each case, Natural England's comments are first summarised and ABP's responses to those comments are then provided.

2. NE key issue ref 10 – General HRA screening comments

1) Artificial lighting has not been considered in the assessment for impacts, during construction and operation, on designated site features – this impact pathway should be included and assessed for LSE in Tables 3, 4 and 5

2.1. Table 9.25 in Chapter 9 of the ES considered potential effects of lighting associated with the IERRT project. This was not assessed in detail in light of the already high levels of permanent night-time lighting within the port environment, as further elaborated below. It was also considered in paragraph 3.55 of the Preliminary Ecological Appraisal.

2.2. With respect to potential lighting effects during construction, equipment and plant such as jack-up barges, piling rigs, cranes etc. will be lit for safety reasons. During operation, the approach jetty, pontoons and finger piers will also be lit for safety purposes. Potential effects on qualifying SAC/SPA and Ramsar features are summarised below.

River lamprey and sea lamprey

2.3. Beams of light from construction and operational lighting will essentially be restricted to surface waters as light is unlikely to penetrate far into the water column given the high turbidity of the Humber Estuary. Furthermore, evidence suggests that lamprey are not particularly sensitive to lighting and will often be attracted to lighting rather than causing a barrier to movements (Stamplecoskie *et al.,* 2012 and Zielinski *et al*., 2019). As a consequence, it is not considered that such localised changes will cause disruption or blocking of migratory routes for these species.

Grey seals

2.4. Beams of light from construction and operational lighting will essentially be restricted to the surface waters as light is unlikely to penetrate far into the water column given the high turbidity of the Humber Estuary. Seals are also known to forage in areas with artificial lighting (such as harbours, offshore wind farms and fish farms) where lighting does cause adverse effects on this species. Rather than disrupting any foraging movements, lighting may also have some minor and localised beneficial effects given that lighting has been shown to aggregate fish shoals and will also potentially improve foraging efficiency through enhancing vision of this predator near the surface.

Qualifying SPA/Ramsar waterbird interest features

2.5. Waders and other waterbirds feeding on intertidal mudflats are known to feed nocturnally. Evidence suggests that artificial illumination can improve foraging (through increasing prey intake rate) and, therefore, lighting can have a positive effect on the nocturnal foraging of waterbirds (Santos *et al*., 2010).

2.6. There is considered to be no potential for an LSE on these features as a result of artificial lighting and, as such, the above clarifications do not alter the conclusions of the HRA.

References

Santos, C. D., Miranda, A. C., Granadeiro, J. P., Lourenço, P. M., Saraiva, S., & Palmeirim, J. M. (2010). Effects of artificial illumination on the nocturnal foraging of waders. Acta Oecologica, 36(2), 166-172.

Stamplecoskie, K. M., Binder, T. R., Lower, N., Cottenie, K., McLaughlin, R. L., & McDonald, D. G. (2012). Response of migratory sea lampreys to artificial lighting in portable traps. North American Journal of Fisheries Management, 32(3), 563-572.

Zielinski, D. P., McLaughlin, R., Castro-Santos, T., Paudel, B., Hrodey, P., & Muir, A. (2019). Alternative sea lamprey barrier technologies: history as a control tool. Reviews in Fisheries Science & Aquaculture, 27(4), 438-457.

Appendix 3 – Bird Disturbance Signposting Document

Signposting Document

Subject: **Immingham Eastern Ro-Ro Terminal (IERRT) – Bird Disturbance**

Status: **Relevant Representations Signposting Response – 12 June 2023**

1. Introduction

1.1. In their Relevant Representations dated 19 April 2023, Natural England raised a number of points regarding bird disturbance. This document responds to and clarifies the points raised.

1.2. This signposting document references:

- Application Document Reference number 8.2.9 - Environmental Statement - Volume 1 - Chapter 9 - Nature Conservation and Marine Ecology (APP-045); and
- Application Document Reference number 9.6 - Habitats Regulations Assessment (APP-115).

1.3. It addresses below Natural England's comments made in Part II, Table 1 of their Relevant Representations, specifically issues 5, 6, 7, 8, 10, and 39. In each case, Natural England's comments are first summarised and ABP's responses to those comments are then provided.

2. NE key issue ref 5 – General comments/ further information required in relation to SPA/ Ramsar bird species data

1) Bird numbers quantified through specific references to the data (e.g., referring to numbers of birds in relation to their estuary population, with phrases such as 'numbers [less/more than] 1% of the estuary population (five-year mean)') in Table 2 of HRA

2.1. Table 2 in the HRA (APP-115) screened in the following SPA/Ramsar qualifying species due to their regular occurrence in Sector B (between Marsh Lane (Immingham) Western Jetty and the Immingham Oil Terminal Jetty (IOT)) on the foreshore:

- Black-tailed Godwit;
- Shelduck;
- Dunlin;
- Redshank;
- Bar-tailed Godwit, and
- Knot.

2.2. The information relating to bird numbers suggested by Natural England in its Relevant Representation is provided in Table 9.19 and Table 9.20 of Chapter 9 (APP-045) of the ES, as well as Table 28 of the HRA. The following clarification is provided:

- Black-tailed Godwit have been recorded in nationally or internationally important numbers in Sector B as well regionally important numbers (i.e., in

abundances representing > 10% of the estuary wide population (based on the WeBS 5-year mean peak[1]))

- Shelduck, Dunlin and Common Redshank have all been regularly recorded in Sector B in locally important numbers with Bar-tailed Godwit recorded in locally important numbers in some years (i.e., in abundances representing > 1% of the estuary wide population (based on the WeBS 5-year mean peak))
- The numbers of Knot recorded in Sector B are lower than 1% of the estuary wide population (based on the WeBS 5-year mean peak). However, this qualifying feature was screened in on a precautionary basis as they have been regularly recorded on the foreshore in small flocks in some years.

2) Bird usage data by month (combining wintering and passage data)

2.3. Table 9.19 and Table 9.20 of Chapter 9 of the ES presents bird species recorded within Sector B during the last five winters (peak counts per winter), and during the passage months in 2021/22 (peak counts per month), respectively. As requested by Natural England, this same bird survey data collected between October 2021 and September 2022 is now also provided by month (peak counts) in Table 1 and Table 2 below.

[1] Throughout this document (and in Chapter 9 of the ES and the HRA) the 5-year mean peak covers the years 2017/18 to 2021/22

Table 1. Coastal waterbird species recorded within Sector B during October 2021 to September 2022 (peak counts – feeding and roosting)

Species	Peak count (feeding)												Peak count(roosting)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Bar-tailed Godwit	8	3	0	0	1	0	0	0	0	0	2	16	0	1	0	0	0	0	0	0	0	0	0	5
Black-tailed Godwit	589	311	2	1300	10	341	535	264	102	44	22	109	9	38	1	30	2	3	2	24	29	20	6	7
Curlew†	12	8	9	11	11	12	13	14	18	18	13	11	7	4	4	2	5	2	1	6	1	4	4	4
Dunlin	315	406	174	340	215	169	10	12	0	0	1	108	494	400	100	10	150	0	2	3	0	0	0	2
Redshank	108	128	115	105	101	142	124	1	6	111	143	143	153	100	50	3	61	72	107	1	1	74	57	123
Ringed Plover†	0	0	0	0	0	0	0	72	0	0	3	5	0	0	0	0	0	0	0	24	0	0	0	0
Shelduck	18	48	48	67	24	23	22	15	7	8	23	21	15	32	46	29	18	12	15	15	3	0	8	20
Teal†	0	1	0	21	21	25	16	0	0	0	0	0	0	1	0	18	27	4	2	0	0	0	0	0
Cormorant	2	0	0	0	0	1	1	0	0	0	0	1	14	4	5	4	7	10	9	0	7	7	16	15
Mallard†	0	0	0	0	0	1	2	0	0	0	0	3	0	0	7	2	0	2	4	1	0	0	0	0
Knot	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turnstone†	28	27	6	24	26	25	24	2	5	29	17	34	2	0	1	0	1	0	0	0	0	0	4	2
Oystercatcher†	0	0	0	0	5	12	8	4	5	5	2	0	0	0	0	1	4	3	2	2	1	1	3	0
Grey Plover	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Little Egret	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1
Common Sandpiper	0	0	0	0	0	0	0	0	0	3	1	5	0	0	0	0	0	0	0	0	0	0	0	0
Whimbrel	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0

SPA qualifying species highlighted in **bold.** † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22).
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22).
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak – 565 birds) is higher than the national importance threshold (390 birds). The national importance threshold for Common Sandpiper and Whimbrel is set as 1.
	Cells highlighted red indicate the count is of international importance.

Table 2. Coastal waterbird species recorded within Sector B during October 2021 to September 2022 (peak counts – all behaviours)

Species	Peak count (combined – non-behaviour)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Bar-tailed Godwit	8	3	0	0	1	0	0	0	0	0	2	16
Black-tailed Godwit	589	311	2	1300	10	344	535	274	107	44	22	109
Curlew†	12	8	9	11	13	12	13	14	18	18	13	13
Dunlin	494	406	174	340	215	169	10	12	0	0	1	108
Redshank	160	128	124	105	101	142	140	1	6	111	143	154
Ringed Plover†	0	0	0	0	0	0	0	72	0	0	3	5
Shelduck	18	53	50	72	25	28	22	19	7	8	23	21
Teal†	0	1	0	21	27	25	16	0	0	0	0	0
Cormorant	14	4	5	4		10	9	0	7	7	16	15
Mallard†	0		7	2	0	2	4	1				3
Knot	0				0			0	0	1		0
Turnstone†	28	27	7	24	27	25	24	2	5	29	17	34
Oystercatcher†		0		1	5	12	8	4	5	5	4	0
Grey Plover	0	0	0	1	0	1	0					2
Little Egret	0		0		0	0	0	0	0	0	1	2
Common Sandpiper	0					1	0	1		3	1	5
Whimbrel						0	0	1		2	0	0

SPA qualifying species highlighted in **bold.** † Species with this symbol are included as named components of the SPA waterfowl assemblage.

	Cells highlighted green indicate the count is of local importance (> 1%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22).
	Cells highlighted orange indicate the count is of regional importance (> 10%) of the current estuary wide WeBS 5-year mean peak (2017/18 to 2021/22).
	Cells highlighted blue indicate the count is of national importance. It should be noted that for Black-tailed Godwit the regional importance threshold (> 10% of the estuary wide WeBS 5-year mean peak – 565 birds) is higher than the national importance threshold (390 birds). The national importance threshold for Common Sandpiper and Whimbrel is set as 1.
	Cells highlighted red indicate the count is of international importance.

3) Bird numbers quantified through specific references to the data in Table 4 of HRA to justify potential for LSE

2.4. The species highlighted above (in ABP's response to point 1) along with waterbird assemblage species (see below) were all screened into the assessment. The terminology used in Table 4 of the HRA (i.e., the use of words such as low/lower etc.) does not change the outcome of the assessment (i.e., a potential LSE was not ruled out for all of these species with respect to the pathways and they were as a consequence taken forward into Stage 2 (Appropriate Assessment) of the HRA).

4) Waterbird assemblage' species that occur in numbers over 1% of the estuary population should be listed [screened into assessment] (section 3.3.2, page 120 of the HRA)

2.5. To provide clarity on the SPA waterbird assemblage species screened into the assessment, in addition to the qualifying features listed above, the following waterbird assemblage species were also considered in the assessment in Stage 2 (Appropriate Assessment) of the HRA (APP-115):

- Turnstone;
- Curlew;
- Oystercatcher;
- Mallard;
- Teal; and
- Ringed Plover.

2.6. These species are all listed as SPA assemblage species in the Natural England SPA citation. As identified in Table 9.19 and Table 9.20 of Chapter 9 of the ES and Table 28 of the HRA, Turnstone have been recorded in Sector B in regionally important numbers (i.e., in abundances representing > 10% of the estuary wide population (based on the WeBS 5-year mean peak)). Ringed Plover has been occasionally recorded in locally important numbers in some years (i.e., in abundances representing > 1% of the estuary wide population (based on the WeBS 5-year mean peak)). The other species were considered in Stage 2 (Appropriate Assessment) as they have occurred on the foreshore in some years but in numbers < 1% of the estuary wide population (based on the WeBS 5-year mean peak). No other SPA assemblage species occurs in numbers over 1% of the estuary population, with the exception of Greenshank where only one single bird observation represents > 1% of the estuary population (based on the data for Sector B) and was, therefore, not considered further in the assessment.

5) Bird usage in Immingham Sectors A and C as well as across the frontage between Goxhill and Pyewipe by referencing the Wetland birds Survey data

2.7. A summary of bird usage on the Humber Estuary is provided in paragraphs 9.6.70 to 9.6.79 in Chapter 9 of the ES. Bird survey data for count Sector A (between North Killingholme Haven to Marsh Lane (Immingham) Western Jetty) and count Sector C (IOT Jetty to Oldfleet Drain), as well as WeBS data covering Goxhill and Pyewipe, will be provided separately.

3. NE key issue ref 6 – Potential changes in waterbird foraging and roosting due to operation (presence of infrastructure)

1) Whether key species feed around port infrastructure at present, whether the same bird species are likely to utilise the area during the operational phase, and whether the numbers are likely to be comparable to present

3.1. Paragraph 4.3.36 of the HRA (APP-115) provides information on waterbird behaviour around existing jetties.

3.2. In terms of bird usage, the analysis of bird distribution mapping for Sector B for the last five years' worth of data suggests similar densities of foraging bird species (including Black-tailed Godwit, Curlew, Dunlin, Turnstone and Shelduck) occur in the vicinity of jetty structures (<50-100 m) compared with greater distances away. This suggests that numbers of birds within a sector / area of foreshore are highly unlikely to be affected by the presence of structures, supporting the conclusion of the HRA.

2) Additional information around observed approach distances, and whether avoidance of structures will result in loss of supporting habitat for SPA/ Ramsar birds

3.3. Surveys in the Immingham area confirm that Curlew, Shelduck and Black-tailed Godwit (where it was stated they approach 'relatively closely' in paragraph 4.3.36 of the HRA) are seen regularly feeding within <10-20 m of existing jetties in the Immingham area. This is similarly the case for other species regularly recorded in the area which were not listed in paragraph 4.3.36 (i.e., Bar-tailed Godwit and Oystercatcher).

3.4. Paragraphs 4.3.29 to 4.3.39 and Table 10 of the HRA (APP-115) provide an assessment of changes to waterbird foraging and roosting habitat as a result of the presence of the proposed marine infrastructure and includes consideration of potential effects against conservation objectives. It is concluded that there is no potential for an AEOI on the qualifying interest features. To provide further clarity, based on the information provided above, the same key species which are currently recorded on the foreshore in the local area (i.e., those listed in Table 10 of the HRA) would be expected to utilise the mudflat in comparable numbers once the IERRT infrastructure is operational compared with predevelopment baseline conditions. Any change to functional use of supporting mudflat habitat for SPA species as a result of the presence of the proposed marine infrastructure during operation is considered to be negligible.

4. NE key issue ref 7 – Potential noise and visual disturbance during construction on qualifying SPA/ Ramsar bird species

1) Use of IECS 2013 'Waterbird disturbance mitigation toolkit' – Natural England advocate a precautionary approach to assessing disturbance to waterbirds on mudflats, using 300 m as an initial disturbance zone and then reducing this where mitigation measures allow

4.1. It is noted that Natural England does not endorse the IECS (2013) 'Waterbird disturbance mitigation toolkit'. The toolkit has, however, only been used to provide contextual information for the assessment. Typically, this comprises findings from direct observations and monitoring of bird species in respect of flood defence works (including piling and use of plant/machinery) which is considered analogous to port related construction activity. It is acknowledged that caution should be used with respect to the very specific thresholds stated for individual species in the toolkit. For this reason, the IERRT ES and HRA do not apply the toolkit thresholds in the assessment(s) and instead take a broader approach by considering the evidence base as a whole. In addition, a wide range of literature and evidence sources have been taken int account within the assessments to help understand the relative sensitivity of different species and the responses they might have to disturbance stimuli. Taken together, this information represents a robust evidence base to underpin the respective assessments and the conclusions drawn from those assessments.

4.2. Based on the comprehensive assessment detailed in the IERRT HRA and ES, a 200 m disturbance zone around marine construction activity is considered appropriate as the evidence indicates that the response of waterbirds to disturbance stimuli is limited at distances over 200 m, particularly in areas subject to already high levels of existing anthropogenic activity (as found at the foreshore at the Port of Immingham where the IERRT development is proposed). This detailed review has considered an extensive amount of research and reviews on flight initiation distance (FID) – the distance at which a bird takes flight in response to disturbance stimuli – as well as studies that have investigated the distance that birds respond to construction activity (or other analogous activities undertaken on the foreshore such as the construction of flood defence works).

4.3. The conclusions reached are supported by actual observations of construction type activity occurring within the area of the proposed IERRT. Recent (January to March 2023) IERRT Ground Investigation (GI) works confirm that disturbance responses of waterbirds at distances of more than 200 m are limited, specifically for waterbirds on the Immingham foreshore. These birds appear to be tolerant of disturbance stimuli. A jack-up barge was used during the GI works which will also be used for the IERRT project; therefore, the construction plant will be similar in terms of visual presence.

4.4. Coastal waterbird species (Dunlin, Redshank, Turnstone, Black tailed Godwit, Mallard, Shelduck, Herring Gull, Common Gull and Black-headed Gull) were all recorded actively feeding within 60 m of the jack-up-barge and closer on occasion. In addition, bird numbers and distribution in the eastern section of Sector B (i.e., the foreshore fronting Immingham Docks, from the lock gate towards the IOT Jetty) – where the IEERT development is proposed – over this period when GI works were undertaken were also broadly comparable to what has been recorded in ongoing waterbird surveys in this area over the last five years. Therefore, in summary, coastal waterbirds tolerated the noise and visual stimuli associated with the GI works with only very limited disturbance observed and birds continued to utilise the foreshore in Sector B in similar numbers to previous years.

4.5. In this context generally, it should be noted that the HRA has also had regard to Natural England advice given in their consultation response (letter dated 03 October 2022) which stated that - '*peak levels below 55 dBA can be regarded as not significant, while peak noise levels approaching 70 dBA and greater are most likely to cause an adverse effect. Therefore, levels over 65.5 dBA may cause disturbance to SPA birds. Birds may habituate to regular noise below 70 dBA, but irregular above 50 dBA should be avoided*'. Noise modelling of IERRT piling activity predicts that noise levels will be lower than 70 dB LAmax at distances of 200 m and more with the use of a noise suppression system – which will be used during construction (see Figures 1 and 2).

2) Summary of evidence of the sensitivity for different key species to noise and visual disturbance stimuli (Table 27 of HRA)

4.6. Table 27 of the HRA (APP-115) provides a review of the sensitivity of key waterbirds recorded on the foreshore to disturbance stimuli. This includes all the qualifying species of the Humber Estuary SPA/Ramsar that were screened into the HRA assessment (Shelduck, Black-tailed Godwit, Bar-tailed Godwit, Redshank, Knot) as well as SPA assemblage species (Turnstone, Curlew, Mallard, Oystercatcher, Ringed Plover). Data on the abundance of these species is then provided in Table 28 of the HRA in the context of estuary wide populations.

4.7. With respect to Black-tailed Godwit, a precautionary approach in Table 27 has been taken (as advised by Natural England). This is evidenced by this species being assigned the same sensitivity level as other species which are known to be more sensitive to disturbance such as Shelduck or Curlew.

4.8. It is unclear with respect to Shelduck what the contradictions are which Natural England indicate need to be addressed. The judgment on the sensitivity of each species made within the assessments takes into account the range of literature reviewed and is based on a weight of evidence approach. In the specific context of Shelduck the evidence consistently points to a moderate to high level of sensitivity.

4.9. A summary of bird usage across the wintering and passage months for 2021/22, with peak counts for each month for each species is provided in Table 1 and Table 2.

3) Potential reasons why Sector B is important for SPA / Ramsar birds and whether this is likely to change when the development is operational

4.10. Figure 9.10 of the ES shows the main areas used by roosting and feeding birds. On the mudflat in the 'feeding' area (shown as a blue hatched line) the entire area is used for feeding with SPA qualifying species (such as Black-tailed Godwit, Shelduck, Redshank and Dunlin) moving between different patches in this area.

4.11. Waterbirds will use the foreshore in Sector B for a variety of reasons – for example the extent of available mudflat and feeding resources on the mudflat in the area. Potential effects relating to habitat loss and changes to foraging

and roosting habitat have been assessed in the HRA and this was concluded not to result in an AEOI.

4) Expected noise levels during piling and other construction activities at 200 m and 300 m from the source

4.12. Airborne noise modelling (undertaken by AECOM Ltd.) was used to inform the assessments in the IERRT ES and HRA. Paragraph 9.8.189 of Chapter 9 of the ES and paragraph 4.10.19 of the HRA sets out expected noise levels during percussive piling, and paragraph 4.10.35 of Chapter 9 of the ES and paragraph 9.9.5 of the HRA sets out the expected noise levels with mitigation in place in the form of the noise suppression system. The AECOM figures which supported the assessment are provided below demonstrating that beyond 200 m from the piling works, noise levels are predicted to be below 70 dB LAmax with the use of the noise suppression system.

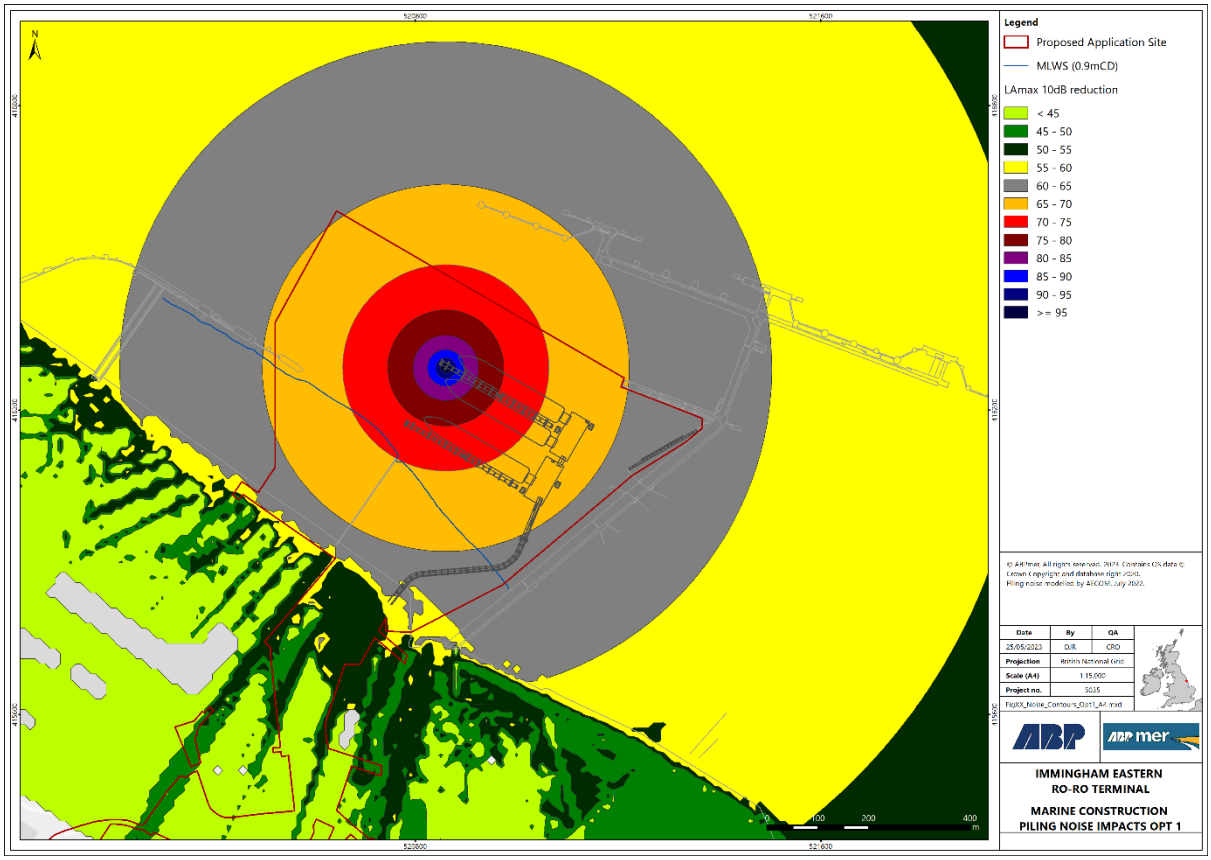

Figure 1. Predicted airborne noise (LAmax) during piling at the outer finger pier with noise suppression system

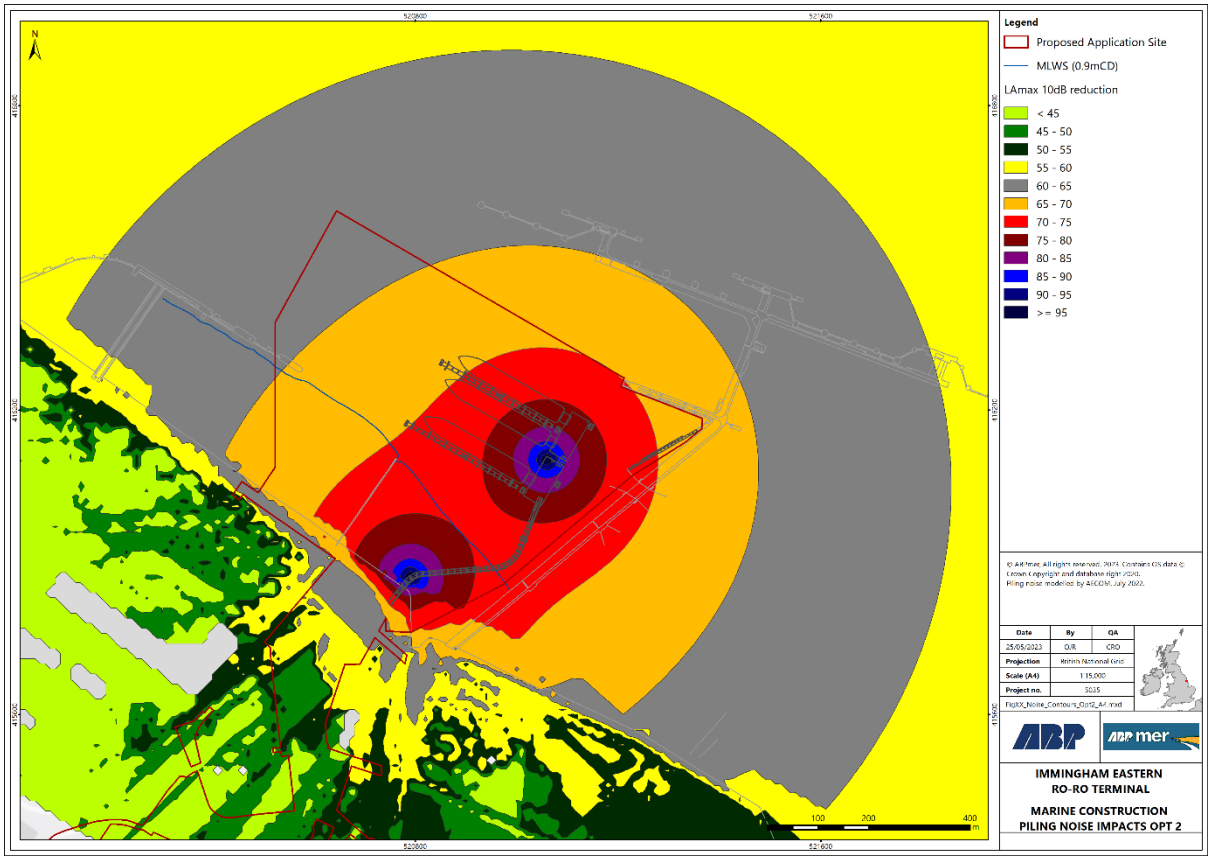

Figure 2. Predicted airborne noise (LAmax) during piling at two locations on the proposed approach jetty with noise suppression system

5) Expected number of passage and wintering seasons for SPA birds that will be affected by the construction period and the expected period of each of the main construction activities

4.13. The construction programme is set out in Chapter 3 of the ES (APP-039), specifically paragraphs 3.1.16 to 3.1.65. Capital dredging works will be undertaken 24 hours a day, 7 days a week, and will take around 80 days. It is estimated that piling works would be undertaken for approximately 24 weeks in total.

4.14. With a sequenced construction programme, construction of the northern finger pier would commence first. The intended timescale being that the northern finger pier and approach jetty will become operational around mid-2025. Following this, the innermost southern finger pier (accommodating the third berth) would be constructed. The capital dredging works outlined above will be undertaken in a single stage in the case of either construction scenario. With a sequential construction, piling works for the northern finger pier, approach jetty, and pontoons would be scheduled to be carried out for an approximate 24-week period, with an approximate 13-week period for the southern finger pier.

4.15. In any case, the assessment has been based on the precautionary assumption that the works could occur at any time of year as a worst case.

6) Numbers of vessel movements at the near shore environment in the Port of Immingham area, and how this project might add to that figure

4.16. The Port of Immingham itself currently has over 118,000 transiting movements of vessels per year – the majority moving in close proximity to the site of the IERRT development. Operational vessel movements resulting from the proposed development will add only a very small increase in vessel traffic in the area on a typical day (six additional Ro-Ro vessel movements per day at the Port of Immingham, as well as tugs) which represents an approximate 3% annual increase in vessel traffic in the local area (as noted in Table 25 of Chapter 9 of the ES, and in Table 3 and Table 5 of the HRA). There will also be maintenance dredger movements but that is estimated to only be necessary approximately three to four times a year.

7) When capital dredging works are expected to occur, and whether this is occurring outside the most sensitive period

4.17. Capital dredging works will be undertaken 24 hours a day, 7 days a week, and will take around 80 days. As noted in paragraph 4.10.24 of the HRA, however, only a small amount of dredging will be required within 50-100 m of the intertidal area, and this will take less than one week to complete. The assessment has nevertheless been based on the precautionary assumption that the works could occur at any time of year as a worst case.

8) Potential energetic costs to birds as a result of disturbance

4.18. It should be noted that disturbance during construction will not be continuous as there will be long periods of down time during the works (see 4.11.22 of the HRA, and 9.8.162 of Chapter 9 of the ES fir further detail). This includes at night when construction will be limited, thereby allowing birds to forage nocturnally with limited disturbance – save for the continuous 24-hour operations of the Port. Research (as summarised in paragraphs 4.10.11 and 4.10.12 of the HRA, and paragraphs 9.8.230 and 9.8.231 of Chapter 9 of the ES) suggests that wading birds need to be disturbed relatively frequently (involving repeated, regular daily disturbance) before adverse effects (in terms of energetic costs or reduction in fitness) are likely to occur. For example, Collop *et al.* (2016) examined the likely consequences of different frequencies of disturbance on various wading birds, using their data on mean flight time and mean total time lost. The authors found that a 5% reduction in birds' daily available feeding time would be expected to result from responding to between 38 and 162 separate disturbance events (depending on species and tidal stage). The mean cost per individual flight response represented less than a tenth of a percent of each species' daily energy requirements. The study concluded that the energetic costs of individual disturbance events were low relative to daily requirements and unlikely to be frequent enough to seriously limit foraging time.

9) Shelduck not noted in paragraph 4.10.30 of HRA

4.19. It is acknowledged that Shelduck were erroneously omitted from the sentence describing which species occur in greater proportions of the Humber Estuary population in paragraph 4.10.30. That omission, however, does not affect the assessment in that Shelduck were screened into Stage 2 (Appropriate Assessment) and effects with respect to construction related disturbance have been assessed on this receptor.

10) Natural England supports the statement in section 4.10.31: "…there is a degree of uncertainty as to whether such areas could accommodate displaced birds"

4.20. Noted. This has been taken into account in the assessment.

11) Impact on birds roosting on structures in the intertidal zone, whether there are other suitable structures for the birds to use

4.21. With respect to the roosting structures identified in Figure 9.10 (i.e., the outfall pipe, derelict concrete structures on the foreshore and the toe of the seawall), they are not used by qualifying SPA/Ramsar species screened into Stage 2 (Appropriate Assessment) (i.e., Shelduck, Redshank, Dunlin, Knot, Black-tailed Godwit and Bar-tailed Godwit) with Turnstone the only listed SPA assemblage species screened in which has been recorded using these structures. Turnstone are considered to be very tolerant to potential disturbance and would be expected to continue using these structures during construction. In addition, as stated in paragraph 9.6.89 of Chapter 9 of the ES, Turnstone are also recorded using other structures in the area such as beams on jetty structures and the bottom of the seawall. Such structures are used for both feeding and roosting by Turnstone. There is, therefore, considered to be a wide variety of alternative structures available in the nearby area for this species to utilise. In addition, as stated in paragraph 4.3.35 of the HRA - *'marine infrastructure associated with the proposed development (raised jetty structure, linkspan etc.) will not prevent any direct access to established roosting habitat used by coastal waterbirds in the area. This includes the outfall pipe which is used by roosting cormorants and gulls and the derelict concrete structures present on the mudflat used by Turnstone and gulls.*'

12) Mitigation measures have not been fully agreed with Natural England at this stage

4.22. Noted but the proposed mitigation measures are considered appropriate to address the impacts associated with IERRT project.

Comments on proposed mitigation measures for construction disturbance

13) Effectiveness of mitigation measures in addressing the potential impact on SPA / Ramsar species that occur in very high numbers on this site (including black tailed godwit, turnstone, redshank, shelduck and dunlin)

4.23. Table 29 of the HRA (APP-115) provides an assessment of potential effects on individual SPA qualifying species (including those species highlighted by Natural England in the response i.e., Black-tailed Godwit, Turnstone, Redshank, Shelduck and Dunlin). This assessment considered potential mitigation and assessed potential effects against site conservation objectives to provide a judgment on the potential for an AEOI. With the proposed measures in place, any disturbance responses are considered to be infrequent and not of a magnitude that will cause an AEOI to any qualifying waterbird features of the SPA.

14) Length of freezing conditions required before cold weather restriction should be implemented

4.24. The proposed cold weather construction restriction is based on the JNCC's scheme to reduce disturbance to waterfowl due to shooting activity in severe winter weather. This scheme applies a restriction to the activity after freezing conditions (determined from minimum air and grass temperatures) for seven consecutive days. The proposed restriction in the ES and HRA is, therefore, considered appropriate and based on established working practices.

15) Dates of restricted winter working related to the dates that significant numbers of birds are present on the mudflats, and should be focused on the activities that are most likely to be disturbing to birds, such as piling

Proposed winter marine construction restriction – temporal extent

4.25. Data shows that this restriction period (October to March inclusive) correlates with the months where the largest number of the most SPA qualifying species occur (i.e., Black-tailed Godwit, Dunlin and Shelduck – all of which have been recorded in numbers exceeding 1% of estuary-wide populations and with specific respect to Black-tailed Godwit in nationally or internationally important numbers in some years). For example, based on monthly peak counts for the 12-month period from October 2021 to September 2022 in Sector B (see Tables 1 and 2), it should be noted that:

- Black-tailed Godwit: Four of the five largest monthly counts occur in winter period (1 October to 31 March) with internationally, nationally or locally important numbers recorded over this period;
- Dunlin: Larger numbers were recorded during all the months of the winter period (1 October to 31 March) compared to months outwith this period; and
- Shelduck: Four of the five largest monthly counts occur in winter period (1 October to 31 March).

4.26. It is recognised that during the colder winter months, coastal waterbirds are more susceptible to effects of disturbance due to higher energetic costs and greater feeding requirements for thermoregulation along with a range of other factors highlighted in paragraph 4.10.32 of the HRA. In addition, wintering waterbirds typically show a high level of site fidelity and utilise relatively small home ranges (as discussed in paragraph 4.10.31 of the HRA). This can also make them vulnerable to the effects of disturbance (as discussed in paragraph 4.10.31 of the HRA).

4.27. The shoulder months to the winter restriction period (such as August, September, April and May) typically support waterbirds on passage where migrating birds stop over to feed and rest on migration to and from breeding areas[2]. It is noted that that nationally important numbers of Black tailed Godwit were recorded in April and numbers considered locally important in May, June and September in Sector B. Redshank were recorded in broadly comparable

[2] It is noted that the Autumn passage period can also include failed breeding birds that return to winter sites early and that a small proportion of birds (typically juveniles and local breeding birds) can spend the summer months in same area as overwintering.

numbers that are considered locally important in most months (Tables 1 and 2).

4.28. Evidence with respect to Black-tailed Godwit (which has been subject to a wide range of individual and population studies) suggests that this species typically uses the same stop-over sites each year with peak spring passage period for birds typically occurring in March and April on the East coast of England (Gill *et al*., 2019; Gunnarsson *et al.,* 2005; Keeble, 2018; Alves *et al.,* 2012). During this period there is a high seasonal turnover of birds at stop over sites (with birds typically staying anything from a week to several months at these sites before moving on) (Keeble, 2018).

4.29. Visiting passage birds typically stop over at sites for short durations of time and therefore will only be exposed to potential disturbance at any given stop over for a relatively short period (compared to winter birds which typically utilise a localised winter home range for typically 5-6 months or more). This makes individual passage birds less susceptible to disturbance effects at individual stop over locations (due to relatively limited temporal exposure) with conditions at wintering and breeding sites often considered more important in terms of adverse effects on survival or breeding success due to environmental pressures. Nevertheless, it is acknowledged that waterbirds are still considered vulnerable to disturbance during passage periods at stop-over sites given the need for birds to intensively feed (to accumulate body reserves ready for the energetic demands associated with long distance migratory flights) (Newton, 2006).

4.30. It should be noted that use a noise suppression system during piling and acoustic barriers/ screening on barges year-round is proposed as mitigation, as well as soft start procedures during piling, to help minimise the effects of noise disturbance on these species. The effectiveness of these measures is described in points 16, 17 and 18 below. With the use of the measures, potential noise and visual disturbance responses are generally expected to be restricted to a relatively localised area of foreshore which will only represent a small proportion of intertidal mudflat habitat in the Immingham area and therefore extensive alternative feeding habitat is available for passage birds to accumulate body reserves for onward migratory flight (see paragraph 9.8.248 of Chapter 9 of the ES). Furthermore, construction work will be temporary and not continuous, with significant periods during a 24-hour period when no work will be undertaken (e.g., see paragraph 9.8.195 of Chapter 9 of the ES and paragraph 4.11.34 of the HRA). Given that data suggests that birds are relatively site faithful in terms of utilising the same passage stopover sites each year, passage birds would also be expected to have some pre-existing habituation to port related disturbance stimuli. Potential effects are therefore considered to be relatively minor, localised and not of a magnitude that will compromise relevant site conservation objectives in terms of distribution or population changes. Therefore, the conclusions reached in the HRA remain in that there is considered no potential AEOI on the qualifying interest features as a result of construction related disturbance during passage months.

4.31. Turnstone (an SPA assemblage species) typically occurs year-round in locally or regionally important numbers (peak counts of approximately 20-30 birds in most months). However, this species is considered highly tolerant to

disturbance (as highlighted in Table 27 of the HRA) with the measures described above also benefiting this species.

Proposed winter marine construction restriction – spatial extent and activities

4.32. The mitigation measures apply a 200 m disturbance buffer, with no construction activity being undertaken within 200 m of exposed mudflat over the winter period (1 October to 31 March inclusive) until an acoustic barrier/visual screen has been installed on both sides of the semi-completed jetty structure. As highlighted above and in paragraph 4.10.17 of the HRA and paragraph 9.8.236 of the ES, evidence suggests that the response of waterbirds to disturbance stimuli is limited at distances over 200 m (see paragraphs 4.10.3 to 4.10.16 of the HRA, and paragraphs 9.8.222 to 9.8.234), particularly in areas subject to already high levels of existing anthropogenic activity (as found in the Port of Immingham area). The restriction will mean that piling cannot be undertaken within this zone over the winter. Piling is considered to have a high potential for disturbance (due to the high noise levels associated with this activity). In light of this, it is important to note that a noise suppression system will be used for piling undertaken out of the 200 m restriction zone. The noise suppression system is predicted to reduce noise levels to <70 dB LAmax at distances greater than approximately 200 m from the piling. Based on Natural England guidance *'peak levels below 55 dBA can be regarded as not significant, while peak noise levels approaching 70dBA and greater are most likely to cause an adverse effect'.* On this basis, the noise suppression system will limit noise levels at distances of 200 m or more below this 70 dB level.

16) Effectiveness of the proposed noise suppression system for piling

4.33. The noise suppression system is expected to offer a 10 dB reduction in the unmitigated LAmax sound power level associated with piling. The predicted levels of airborne noise associated with piling, with the use of the noise suppression system in place, is presented in Figures 1 and 2.

17) Effectiveness of the proposed acoustic barrier/ screening on marine construction barges

4.34. Screens and other barriers are a widely used measure to help reduce potential disturbance to coastal waterbirds (Ikuta and Blumstein, 2003; Liley and Tyldesley, 2013; Hockin *et al.,* 1992) and have been successfully applied as mitigation to reduce disturbance at a number of port locations located near intertidal waterbird populations (GoBe Consultants Ltd, 2011, ABPmer, 2014; MMO, 2018).

18) Effectiveness of soft starts for any piling as mitigation for birds

4.35. The application of soft start procedures for piling activities is a widely established measure to help reduce disturbance to waterbirds. It is acknowledged that initial sudden noise associated with an activity elicits a greater response than further subsequent noise (due to increasing tolerance of the birds to the stimuli) (Collop *et al*., 2017; IECS, 2009; Hockin *et al*., 1999). On this basis, soft starts will allow the more gradual increase in noise levels which would help reduce potential 'startling' effects to waterbird associated with

the first sudden bangs of piling (during periods which are not subject to seasonal restrictions).

4.36. The use of soft starts is also an established mitigation measure to help reduce potential underwater noise effects on marine mammals and fish (Tougaard *et al.,* 2012).

19) Certainty that proposed mitigation measures will be effective with reference to the SPA/Ramsar bird species

4.37. Section 9.11 of Chapter 9 of the ES provides the assessment of the residual impacts associated with the IERRT project taking into account the proposed mitigation measures.

20) Bird numbers quantified through specific references to the data in Table 29 of HRA

4.38. Please refer to the response provided above for key issue ref 5.

21) Natural England expect that Table 29 will be amended once our advice has been considered, so will provide further comments at that stage

4.39. Noted. It is assumed that the Secretary of State's HRA will take account of the information in the HRA, ES and this document.

5. NE key issue ref 8 – Potential noise and visual disturbance during operation on qualifying SPA/ Ramsar bird species

1) Which bird species are regularly recorded feeding nearby or below port structures such as jetties or pontoons and appear to be relatively tolerant to normal day-to-day port operational activities

5.1. As stated in Paragraph 4.10.38 of the HRA (APP-115), no disturbance has been recorded as a result of vessel movements or operational activity at or near berths or jetties in the Immingham area during the ongoing Immingham Outer Harbour (IOH) monitoring in the Port of Immingham area since winter 2005/06. This includes any potential disturbance due to operational activities on various jetties (such as the Immingham Oil Terminal (which includes vehicle activity), Western Jetty, Eastern Jetty and Immingham Bulk Terminal).

5.2. Discussions with the ornithologists undertaking the bird monitoring has confirmed that all key bird species recorded in the area (Redshank, Dunlin, Turnstone, Curlew, Shelduck and Black-tailed Godwit, Bar-tailed Godwit and Oystercatcher) are regularly recorded foraging <10-20 m of existing jetties in the Immingham area and appear tolerant to activities associated with these jetties.

2) Screening on either side of approach jetty and linkspan during operation and phased removal of screens after 2 years

5.3. As noted in paragraph 9.9.7 of the ES and paragraph 4.10.49 of the HRA, the effects of disturbance during the operation of the Terminal have been assessed

as minor. The Terminal will be constructed within an already busy, 24/hour, 365 days a year operational port. On a precautionary basis, however, in order to reduce potential visual disturbance stimuli to waterbirds on the foreshore, screening will be installed for two years so that movements of workers or vehicles will not be as visible from the foreshore. This measure has been proposed simply to assist in habituation to the new infrastructure, but in the context of the location of the new berths within the port, it is not actually considered necessary.

5.4. It should also be noted that (as set out in paragraphs 9.8.295 and 9.8.296 of Chapter 9 of the ES, and paragraphs 4.10.43 and 4.10.44 of the HRA), outside the periods of vessel mooring and disembarkation, movements of pedestrians will be minimal with almost all access to the vessels using motorised vehicles (HGVs and Ro-Ro tractors/trailers). Vehicle movements will be undertaken at slow speeds (typically <12 miles per hour) and also in a predictable and consistent manner (i.e., producing the same type of visual/noise stimuli each time). These are all attributes which support habituation and will, therefore, limit disturbance responses. It should also be noted that many of the existing approach jetties in the Port of Immingham have some vehicular access. The IOT approach jetty in particular has regular vehicle movements with no disturbance associated with this activity recorded during the IOH bird surveys.

5.5. As such, permanent screening is not considered necessary.

3) Next steps that would be taken if monitoring showed a significant decrease in bird numbers during operation

5.6. As noted in Chapter 9 of the ES and in the HRA (and repeated above), significant effects relating to bird disturbance during operation are not anticipated. Therefore, a phased removal of the screens is proposed after 2 years.

4) Route vessels take in and out of the dock, and whether this is within 300 m of birds that roost on the water, especially shelduck, and how this compares with the current and forecasted numbers of vessels utilising the area

5.7. Vessels using the Eastern Jetty and approaching and leaving the Inner Dock regularly approach within 300 m of areas used by qualifying SPA/ Ramsar bird species, including Shelduck. The Port of Immingham currently has over 118,000 transiting movements of vessels per year. Additional operational vessel movements resulting from the proposed development will only constitute a small increase in vessel traffic in the area on a typical day (six additional Ro-Ro vessel movements per day at the Port of Immingham, as well as tugs) which represents an approximate 3% annual increase in vessel traffic in the local area (as noted in Table 25 of Chapter 9 of the ES, and in Table 3 and Table 5 of the HRA). There will also be maintenance dredger movements but that is estimated to only be necessary approximately three to four times a year.

6. NE key issue ref 10 – General HRA screening comments

1) Omission of capital dredge disposal in the LSE screening table [Table 4 in HRA] for impacts to the SPA features

6.1. All qualifying SPA features with the exception of Little Tern (which was screened out as rare in the proposed development area – including dredge disposal sites) occur on or near intertidal habitat (or functionally linked coastal land). Therefore, given the distance of the dredge disposal site offshore, no potential effects on supporting habitat for SPA species will occur.

2) Omission of supporting habitats (both intertidal and subtidal) in the LSE screening table [Table 4 in HRA] for impacts to SPA features [Table 4 in HRA]

6.2. Supporting habitats (both intertidal and subtidal) are not features of the Humber Estuary SPA in their own right. However, in Table 4, the potential for an LSE on supporting habitat is considered within impact pathways on 'loss or change to coastal waterbird habitat' during construction and 'direct changes to coastal waterbird habitat foraging and roosting habitat as a result of marine infrastructure' during operation. Within the Appropriate Assessment, supporting habitat is considered within the context of the conservation objectives relating to the supporting habitat of the qualifying interest features (i.e., 'structure and function of the habitats of the qualifying features' and 'extent and distribution of the habitats of the qualifying features').

7. NE key issue ref 39 – Potential impacts on the SSSI 'Aggregations of non-breeding birds – Black- tailed godwit' feature

1) North Killingholme Haven Pits SSSI 'Aggregations of non-breeding birds – Black- tailed godwit' feature

7.1. Table 9.7 of the ES considers both direct and indirect effects on the North Killingholme Haven Pits SSSI. Indirect impacts on the SSSI are expected to be negligible.

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Appendix 4 – Underwater Noise Signposting Document

Signposting Document

Subject: **Immingham Eastern Ro-Ro Terminal (IERRT) – Underwater Noise**

Status: **Relevant Representations Signposting Response – 12 June 2023**

1. Introduction

1.1. In their Relevant Representations dated 19 April 2023, Natural England raised a number of points regarding underwater noise. This document responds to and clarifies the points raised.

1.2. This signposting document references:

- Application Document Reference number 8.2.9 - Environmental Statement - Volume 1 - Chapter 9 - Nature Conservation and Marine Ecology (APP-045); and
- Application Document Reference number 9.6 - Habitats Regulations Assessment (APP-115).

1.3. It addresses below Natural England's comments set out in Part II, Table 1 of their Relevant Representation, specifically issues 10, 12, 26, 28, 30, 32, 33, and 34. In each case, Natural England's comments are first summarised and ABP's responses to those comments are then provided.

2. NE key issue ref 10 – General HRA screening comments

1) Justification for screening out underwater noise impacts from vessel operations including maintenance dredging and dredge disposal for lamprey and grey seal as ambient noise levels have not been provided

2.1. A detailed review of existing ambient noise sources and measured levels in the Humber Estuary is provided in Section 5 of the Underwater Noise Assessment (see Appendix 9.2 of Volume 3 of the ES (APP-088)). In this context maintenance dredging and associated vessel movements are already ongoing activities in the main navigation channel and berths at the Port of Immingham and form part of the baseline soundscape of the estuary. Underwater noise impacts associated with vessel operations including maintenance dredging and dredge disposal as a result of the proposed development are therefore within the range of existing ambient levels in this part of the Humber Estuary. Furthermore, as stated in paragraph 4.11.5 of the HRA and paragraph 9.8.153 of Chapter 9 of the ES, sea lamprey and river lamprey features form part of the least sensitive noise hearing fish group according to the Popper *et al.* (2014) guidelines. As described within the IERRT HRA (APP-115) there is, as a consequence, considered to be no potential for a likely significant effect (LSE) on these features as a result of this pathway. This is also consistent with the information provided to inform the Appropriate Assessment that was prepared in support of the Humber Estuary Maintenance Dredge Protocol which was reviewed by Natural England and accepted by the MMO (ABPmer, 2014).

3. NE key issue ref 12 – HRA assessment – The potential effects of underwater noise and vibration during piling on qualifying species

1) Natural England are reliant on CEFAS providing a detailed review of the noise modelling presented in the ES, noting that this underpins the HRA

3.1. Noted.

2) Rationale for proposed underwater noise mitigation measures, specifically why particular dates have been identified as important for migratory lamprey species

3.2. The periods developed for the night-time piling restriction, set out in paragraph 4.11.39 of the HRA, and paragraph 9.9.3 of the ES, were based on sensitive periods for both glass eel and river lamprey. With specific respect to river lamprey, the restriction covering the period 1 August to 31 October will specifically benefit the nocturnal migratory periods of this species. This is based on the information provided by the Environment Agency (2013) which states that 'in the Humber basin, river lamprey mainly enter the rivers from the estuary in autumn and then spawn in April'. The Environment Agency (2013) report also stated that during Humber Estuary fish surveys, most river lamprey were caught in summer and autumn.

3.3. Natural England's Conservation Advice provided on the Designated Site Viewer, states that migration into rivers of the Humber basin occurs 'between November and March, although they have been recorded as early as October' (Hopkins, 2008; Environment Agency, 2013). However, this relates to the Humber basin rivers more generally as opposed to the specific location of the proposed IERRT scheme.

3.4. A more detailed review of the information provided by the Environment Agency (2013) and the Humber Estuary fish surveys, as undertaken for the ES and described above, demonstrates that migrating lamprey would have moved passed the IERRT project site by the end of October when the proposed restriction ends.

3) If the values change as a result of CEFAS advice the HRA should re-assess using the updated information to determine if the proposed mitigation remains sufficient

3.5. Noted. There is currently no suggestion that the outputs of the underwater noise assessment will change based on the Cefas advice that has been provided to date.

4) Vibro-piling may occur overnight and therefore may have an impact on migratory Lamprey which should be considered within the HRA

3.6. Vibro-piling and potential impacts on migratory lamprey species are considered in detail within the HRA (APP-115). Please refer specifically to Table 3 and Table 5 in Section 3 (Screening), and Section 4.11 of the Appropriate Assessment in the HRA. The assessment has been undertaken on the basis that the works could take place at any time of year (including overnight) as a

worst case. Therefore, piling during the sensitive migratory periods of lamprey in the Humber Estuary has been assessed.

4. NE key issue ref 26 – Chapter 9: Nature Conservation and Marine Ecology – Marine mammals

1) Marine mammal sensitivity to impacts from underwater noise, and consideration that sensitivity to Permanent Threshold Shift (PTS) is high – not considered appropriate to take into account the size of the PTS zone when determining an individual's sensitivity to it (this should be considered in the magnitude)

4.1. The greater scale of effect associated with PTS is already taken account of in the 'magnitude' and 'exposure to change' elements of the EIA methodology (see Section 9.3 in Chapter 9 of the ES (APP-045)). Therefore, considering it also in the 'sensitivity' part of the assessment methodology would be a form of double counting. It is agreed that the size of the PTS zone should be considered in respect of the magnitude of the impact and not the sensitivity of the receptor to it and this is the approach that has been used within the assessments. However, it is also necessary to consider the sensitivity of a receptor to a defined level of environmental change and exposure (which is defined by the magnitude of change and probability of occurrence). This methodology is described in Section 9.3 of Chapter 9 of the ES (APP-045).

4.2. Based on the literature review of the responses of marine mammals to different underwater noise activities (e.g., pile driving, seismic surveys, dredging etc.) in Section 7.4 of the Underwater Noise Assessment appendix (see Appendix 9.2 in Volume 3 of the ES (APP-088)), the overall sensitivity of marine mammals to underwater noise from piling is considered to be moderate and for dredging/vessels it is considered to be low.

5. NE key issue ref 28 – Chapter 9: Nature Conservation and Marine Ecology – Underwater noise and vibration during piling, capital dredging and dredge disposal

1) Consideration that injury and disturbance should be assessed as separate pathways

5.1. As outlined in the underwater noise assessment (see Appendix 9.2 in Volume 3 of the ES (APP-088)) underwater noise can result in a range of responses in marine mammals (from mortality/injury, behavioural avoidance/responses and/or masking of biological signals e.g., echolocation). The respective impact assessment has been undertaken to identify the project activities that have the potential to result in adverse effects on receptors and to identify suitable mitigation to avoid or minimise those effects to acceptable levels.

5.2. Within the assessment (Section 4.11 of the HRA and paragraphs 9.8.175 to 9.8.204 of the Chapter 9 of the ES), underwater noise effects on marine mammals are considered under one impact pathway. However, the ranges at which injury effects (permanent/temporary) are predicted (using an agreed underwater noise propagation model and recognised published thresholds), as well as the ranges at which behavioural responses are anticipated (based on a

detailed desk-based review of the available scientific literature) are clearly presented. Both of these outcomes are considered in the assessment, along with the potential significance of effects or the level of mitigation that is required.

5.3. Please also see ABP's response to NE key issue ref 26 as set out above with respect to marine mammal sensitivity.

2) Industry-standard mitigation to reduce the risk of this pathway should be sufficient to conclude no significant residual risk

5.4. Noted.

3) Limited assessment of disturbance

5.5. A detailed assessment of disturbance itself has been provided in Chapter 9 of the ES (APP-045) and within the HRA (APP-115).

5.6. In terms of the concerns regarding displacement of grey seal at Donna Nook, the existing constraints of the estuary are such that elevated underwater noise levels generated during piling for IERRT are physically unable to directly reach the breeding site. The Spurn on the Outer Humber Estuary and promontory of Grimsby Docks means that much of the underwater noise will be limited by these hard constraints and will not propagate to the outer part of the estuary and beyond. In addition, the upstream bend in the estuary at Salt End will mean that elevated underwater noise levels will not be able to propagate beyond this point. In other words, potential behavioural responses and/or displacement effects are primarily limited to the section of the estuary between Salt End (upstream) and Grimsby to Spurn Bight (downstream).

5.7. Furthermore, as noted in paragraph 9.8.195 of Chapter 9 of the ES and paragraph 4.11.34 of the HRA, any barrier to movements caused by the noise during piling would be temporary with significant periods during a 24-hour period when no piling will be undertaken (the actual proportion of piling is estimated to be at worst around 14% based on 180 minutes of impact piling per day and 20 minutes of vibro piling per day). This of itself will allow the unconstrained movements of marine mammals through the Humber Estuary. Piling noise will take place for a very small amount of time each day over a period of approximately 24 or 37 weeks (depending on whether a sequenced construction is employed or not). Piling will also not take place continuously as there will be periods of downtime, pile positioning and set up.

5.8. As stated in paragraph 9.6.63 of Chapter 9 of the ES, grey seals can undertake wide ranging seasonal movements over several thousand kilometres (McConnell *et al.,* 1999; Carter *et al.,* 2020; Russel, 2016). Seals tagged at Donna Nook were recorded undertaking wide ranging movements in the outer Humber Estuary and approaches as well as more widely in the North Sea (Russel, 2016). Therefore, seals are likely to be able to exploit a much wider area for foraging during any piling activity.

5.9. On the basis of the above, the assessment and proposed mitigation measures presented in the ES are considered appropriate.

6. NE key issue ref 30 – Chapter 20: Cumulative and in-combination effects – Table 20.2- Overview of Zones of Influence

1) Screening distance for disturbance from underwater noise and evidence to demonstrate that 15 km is sufficient to capture the full extent of the impact range/zone of influence

6.1. As noted above in response to NE key ref 28, the zone of influence with respect to potential disturbance effects is constrained by the shape of the estuary and largely limited to between Salt End (upstream) and Grimsby to Spurn Bight (downstream). The approximate distance from IERRT to the upstream limit of potential underwater noise effects (Salt End) is 15 km. The downstream limit (Grimsby to Spurn Bight) is also approximately 15 km away. As a consequence, this is considered an appropriate distance to use for screening cumulative and in-combination effects (as stated Table 20.2 of Chapter 20 of the ES).

7. NE key issue ref 32 – Volume 3, Appendix 9.2: Underwater noise assessment – Marine mammals

1) Defer to Cefas' response on technical and specialist matters related to underwater noise modelling

7.1. Noted.

2) Natural England note the following Cefas comments which are of particular importance to marine mammal receptors:

- *The use of multiple piling rigs (up to 4) may lead to increased SELcum over a 24-hour period compared to that presented by the Applicant*
- *The simple modelling approach taken can only provide an indication of the order of magnitude of the potential effects, rather than definitive ranges and percentages*
- *The predictions of noise impacts from dredging and vessel movements look smaller than expected, and that TTS effect ranges for harbour porpoise, based on a 24-hour exposure period, should be larger (over part of the estuary).*

7.2. Noted, no further underwater noise modelling is considered necessary in view of Cefas' comments that have been highlighted. Further clarification in response to each of these comments is provided below.

7.3. Within the assessment it has been assumed that four piling rigs as a worst case may be in operation concurrently, but it is not anticipated and indeed is highly unlikely that the piling hammers will strike in unison to create a cumulative effect. Simultaneous piling from multiple rigs is unlikely to increase the received peak pressure levels or the single strike SEL, as the individual pulses (and their peaks) originating from distinct rigs are highly unlikely to overlap (due to the distinct timing of the strikes and the propagation paths). That said, it could be possible for two of the hammers to strike at the same time and, therefore, the modelled source level has taken account of two piling sources as a reasonable worst case. The total number of strikes incorporated in the model has taken account of the maximum number of piles that might be installed each day by

four piling rigs and is as a consequence considered already to represent piling from multiple rigs.

7.4. In terms of the second bullet, where the ranges and percentages are rounded to the nearest order of magnitude, as suggested by Cefas, this does not change any of the assessment conclusions or proposed mitigation measures as documented in Chapter 9 of the ES or Section 4.11 of the HRA.

7.5. In terms of the third bullet, it is unclear why Cefas would anticipate the effects of dredging (and vessel movements) to take place over greater distances. The assumptions and model input values are set out in Sections 4 and 6.3 and the thresholds that were applied are set out in Table 3 of ES Appendix 9.2 (APP-088). As explained in paragraph 9.2.25 in ES Appendix 9.2, NOAA's user spreadsheet tool, which is a freely available online tool, has been used to predict the range which the weighted NOAA cumulative SEL acoustic thresholds for PTS and TTS are reached during the proposed dredging and vessel movements associated with the construction and operation of the proposed development. The assumptions and input values to this spreadsheet are clearly set out in Table 15 of ES Appendix 9.2. The outputs remain unchanged from those reported in the ES.

8. NE key issue ref 33 – Schedule of Mitigation – Marine mammals

1) How much of the piling could be achieved using vibro-piling, thereby how much this mitigation measure could be applied across the piling campaign

8.1. As described in paragraphs 3.1.11 to 3.1.13 of the Chapter 3 of the ES, vibro-piling will be used to drive the piles until the pile cannot be driven further into the ground using this technique (i.e., until the point of refusal). At that point, percussive piling will need to be used to complete the pile driving to the required depth. The estimated amount of vibro-piling that will take place during the piling activities is based on expert judgement from engineers, taking account of their experience in the field, pile size and depth, as well as the anticipated ground conditions the piles will be driven into. In any case, vibro-piling techniques will be used as much as is feasibly possible during construction (not only to reduce underwater noise, but also because it is a simpler and more practical method of piling from an engineering perspective) in loose to medium-dense soils.

8.2. The assumptions used in the underwater noise assessment (Appendix 9.2 in Volume 3 of the ES (APP-088) are considered a realistic worst case with respect to percussive piling.

9. NE key issue ref 34 – HRA assessment - Screening conclusion

1) Harbour seal feature of the Wash and North Norfolk Coast SAC should be screened in for LSE – it is it is acknowledged that the inclusion of the North Norfolk Coast SAC has not been raised previously however on further review, Natural England advise that it should be included in the HRA for assessment

9.1. In line with previous Natural England advice, the harbour seal feature of the Wash and North Norfolk Coast SAC was not considered in the HRA. It is acknowledged, however, that there potentially could be connectivity between

the Wash and North Norfolk Coast SAC and the Humber Estuary with respect to common seal movements. Common seals have been recorded foraging over 200 km from haul out sites including from sites in the Wash (Tollit *et al.,* 1998; Sharples *et al*., 2008; Sharples *et al.,* 2012). The Wash and North Norfolk Coast SAC is located over 75 km from the proposed development. However, evidence suggests that harbour seals typically forage within 40-50 km of their haul out sites (SCOS, 2022) which is reflected in the high predicted at-sea densities of common seals in the Wash and along the North Norfolk and Lincolnshire coasts, and much lower predicted densities in the Humber Estuary or north of Spurn Point (Carter *et al*., 2020). On this basis, the Immingham area is not considered to be key foraging habitat for common seals of the Wash and North Norfolk Coast SAC. Nevertheless, the potential underwater noise effects during construction have been assessed for completeness:

9.2. The potential behavioural zone of influence associated with underwater noise will not be in an area considered part of the core range of common seals of the Wash and North Norfolk Coast SAC. Therefore, the 'distribution of qualifying species within the site' conservation objective will not be compromised. Potential injury or lethal effects to seals is also expected to be restricted to a very localised area in the direct vicinity of piling operations. However, based on information provided above and in paragraphs 9.8.175 to 9.8.204 of the ES and with the proposed mitigation in place (set out in Section 9.9 of Chapter 9 of the ES), the potential for injury effects on seals is considered to be both limited and low. On this basis, underwater noise effects on common seals during piling is considered unlikely to causes changes to 'the populations of qualifying species' conservation objective. On this basis and in the context of the site's conservation objectives, there is considered to be no potential AEOI on the qualifying interest feature.

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