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(By email only)

MMO Reference: DCO/2021/00004
Planning Inspectorate Reference: TR030007

15 August 2023

Dear Mr Gould,

Planning Act 2008, Immingham Eastern Ro-Ro Terminal

On 09 March 2023, the Marine Management Organisation (the "MMO") received notice under Section 56 of the Planning Act 2008 (the "PA 2008") that the Planning Inspectorate ("PINS") had accepted an application made by Associated British Ports (the "Applicant") for the determination of a development consent order (DCO) for the construction, maintenance and operation of the Immingham Eastern Ro-Ro Terminal (the "DCO Application") (MMO ref: DCO/2021/00004; PINS ref: TR030007).

The DCO Application seeks authorisation for the construction, of a new 3-berth Roll-On/Roll-Off (Ro-Ro) terminal facility within the Port of Immingham ("the "Project"). This includes one Deemed Marine Licence (DML) under Schedule 3.

This document comprises the MMO comments in respect of the DCO Application submitted in response to Deadline 1.

The MMO submits the following:

1. Comments on Relevant Representations from other Interested Parties

2. Update on the DML

3. Comments on the updated Examination Timetable

4. Post Issue Specific Hearings (ISH) 1&2 Written Submissions

5. MMO comments on Marine Ecology matters

6. Notification of wish to have future correspondence received electronically

This written representation is submitted without prejudice to any future representation the MMO may make about the DCO Application throughout the Examination process. This representation is also submitted without prejudice to any decision the MMO may make on any associated applications for consent, permission, approval, or any other type of authorisation submitted to the MMO either for the works in the marine area or for any other authorisation relevant to the proposed development.

Yours sincerely,

[redacted]

Jack Coe
Marine Licensing Case Officer

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Contents

1. Comments on Relevant Representations from other Interested Parties

The MMO has reviewed the Relevant Representation of the following Interested Parties:

- Environment Agency
- Historic England
- Natural England
- Maritime and Coastguard Agency
- Trinity House

The MMO offers the following comments in respect of these submissions:

1.1. Environment Agency (EA) (RR-009)

1.1.1. The MMO notes that the EA has no objections to the principle of the proposed development and that they consider it likely that all outstanding issues will be capable of resolution. The MMO welcomes this assertion.

1.1.2. The MMO notes that the EA has requested to be included as a consultee for the Construction and Environmental Management Plan document due to it containing Flood Risk Mitigation Measures, the MMO supports this sentiment and would request they are added to this Requirement (8) as a listed consultee.

1.1.3. The MMO notes EA's conclusion that the activities associated with these works will result in a low exposure to change for the natural environment, this is due to the relatively small size of the works. The MMO concurs with this point. We also note the EA's point that impacts on turbidity within the Humber Estuary will be small due to the size of the proposed works.

1.1.4. We welcome the EA's point that they are satisfied with the interpretation/site characterisation outlined by the Applicants, this is useful to know.

1.1.5. The MMO further notes that the EA agrees with the Applicants 'Water Framework Directive' Assessment conclusion. The MMO defers to the EA on these matters entirely but welcomes this confirmation.

1.1.6. The MMO notes the EA's point that they had only been able to undertake a limited review of the noise impact assessment for migratory fish and that they intend to defer to the MMO on this assessment. The MMO has provided its position on this assessment in Section 5 of this response.

1.1.7. The MMO notes that the EA have outstanding concerns regarding the potential impacts to Atlantic Salmon as a potential consequence of the percussive piling works associated with these works taking place. We note that this is due to certain water conditions making fish more vulnerable to disturbance during such activities. We are also aware that the EA have requested the inclusion of the following condition:

No percussive piling is to take place while the data from the relevant active monitoring scheme shows either the temperature to be above 21.5 degrees Celsius or dissolved oxygen to be below 5 milligrams per litre, or both.

1.1.8. The MMO is aware that the Applicants have pushed back on the inclusion of this condition and indeed the required monitoring. The MMO is considering the potential need for this condition and will provide a full response in its Deadline 2 response.

1.1.9. The MMO is aware that the EA consider further consideration/justification of flood mitigation levels is required along with additional clarification regarding the potential impact on the integrity of flood defences. The MMO defers to EA on this matter technically but urges them to discuss any amendments to the DML with the MMO as early as possible.

1.2. Historic England (HE) (RR-011)

1.2.1. The MMO notes HE's position that the approach to marine archaeological mitigation set out in the submitted Draft Written Scheme of Investigation, appears appropriate subject to the submission and approval of subordinate, detailed method statements. The MMO welcomes this position and the confirmation from HE that they remain content with the staged approach to an MMO discharge on documents relating to features of Archaeological significance. The MMO remains open to dialogue with HE as it relates to Heritage matters being appropriately captured in the DML.

1.3. Natural England (NE) (RR-015)

PART I: Summary and Conclusions of Natural England's advice.

1.3.1. The MMO notes NE's view that insufficient information has been submitted by the Applicants to sufficiently close out the following areas of discussion:

- **Internationally designated sites**
- **Nationally designated sites**
- **Protected species**
- **Biodiversity net gain**

1.3.2. The MMO ultimately defers to NE on these matters as the Statutory Nature Conservation Bodies and hopes that the Applicant and NE can resolve these matters prior to the close of Examination. The MMO welcome inclusion in discussions if resolutions require change or input to the DML, additionally, should it be considered that a Wildlife Licence is required due to certain species being protected by the Wildlife and Countryside Act 1981, the MMO will need to be involved in such discussions.

1.3.3. The MMO notes NE's decision to use the 'Red Amber Green' ('RAG') system to denote the level of risk associated with a topic related to this development. The MMO welcomes NE's use of this system and considers it a clear and concise way to present the severity of an outstanding concern linked to this application.

1.3.4. The MMO also notes NE's closing point stating that it would be unlawful to permit the undertaking of this project should some of the issues outlined in their response not be addressed, this is largely in respect of potential impacts to Special Areas of Conservation (SAC's), Special Protected Areas (SPA's), RAMSAR and Sites of Specific Scientific Interest (SSSI's). The MMO notes the seriousness of NE's concerns and hopes the Applicant and NE can resolve all outstanding issues before the close of Examination.

PART II: Natural England's detailed advice

1.3.5. The MMO notes that there is disagreement between the Applicant and NE as to the conclusions of the Habitats Regulations Assessment (HRA). The MMO further notes that these issues centre around the following designated sites: Humber Estuary SAC, Humber Estuary SPA and Humber Estuary RAMSAR. It appears to the be the case that there are several concerns regarding these sites and their compliance with the Habitats Regulations. The MMO acknowledges these concerns but ultimately defers to NE on all matters related to HRA.

1.3.6. The MMO is also aware that there are issues between NE and the Applicant regarding the potential impacts of Underwater Noise on Marine Mammals and Fish contained in Chapter 9 of the Applicants Environmental Statement. The MMO has outlined its position on this matter in Section 5.1 of this response.

1.3.7. The MMO is also aware that there remain unresolved issues regarding potential Cumulative and In-Combination impacts as it relates to these proposed works. This is also captured in the Applicants Environmental Statement ('ES') in Chapter 20. The MMO has no comment to offer on this matter and defers entirely to NE.

1.3.8. Regarding the Underwater Noise assessment, the MMO notes that NE intends to defer to CEFAS' response. Given that CEFAS is not an Interested Party in this Examination, we would urge NE to reference MMO guidance rather than CEFAS guidance going forward. The MMO has provided its comments on this assessment in Section 5.1 of this response.

1.3.9. The MMO notes NE's point that they would welcome further information from the Applicant as to how much of the piling necessary for the project could be completed via the vibro-piling methodology. The MMO advocates this sentiment and would welcome any further information, if the Applicant has it, to be entered into this Examination.

1.3.10. The MMO notes that NE has concerns regarding the 'Screening Out' of the Harbour Seal feature of The Wash and North Norfolk Coast SAC during the projects HRA screening. Again, the MMO ultimately defers to NE on this matter.

1.3.11. The MMO is aware that there remain unresolved issues that centre around Sites of Specific Scientific Interest (SSSI). We note that this includes the following sites:

- **Humber Estuary SSSI**
- **North Killingholme Haven Pits SSSI**
- **The Lagoons SSSI**
- **Any Relevant Terrestrial SSSI's**

1.3.12. The MMO does not conduct its own SSSI assessments, as such, the MMO defers to NE on all matters related to SSSI.

1.3.13. The MMO notes that Natural England has concerns regarding Biodiversity Net Gain, specifically, the Applicants ability to demonstrate a 10% Biodiversity Net gain as well as the additionality of biodiversity net gain. The MMO again defers to NE on these matters and hopes suitable clarification can be provided by the Applicant.

PART III: Natural England's comments on the Development Consent Order (DCO) / Deemed Marine Licence (DML)

1.3.14. The MMO notes this summary that NE has a number of outstanding issues that require resolution with the Applicant. The MMO hopes that all issues can be resolved prior to the close of Examination.

1.4. Maritime and Coastguard Agency (MCA) (RR-013)

1.4.1. The MMO welcomes MCA's confirmation that the project falls entirely within the statutory harbour area managed by ABP Port of Immingham. Additionally, the MMO notes MCA's point that the competent Harbour Authority responsible for the works is Humber Estuary Services (HES). The MMO has no additional points to raise regarding this representation.

1.5. Trinity House (RR-006)

1.5.1. The MMO notes that all correspondence, should it be necessary, between Trinity House and any other Interested Parties should be directed to its Legal Advisor, Russell Dunham. The MMO welcomes this point and will ensure that any correspondence is directed through this channel.

2. Update on the DML

2.1. As confirmed by the Applicant during Issue Specific Hearing 1 (ISH1), the MMO has been sent an updated Deemed Marine Licence for our review. This was received by the MMO on 19 July 2023.

2.2. The MMO attended a meeting with the Applicant on 30 June 2023 to discuss proposed amendments to the DML, that were laid out in the MMO's Relevant Representation (RR-014). The MMO concurs with the statement made by the Applicant during ISH1 that the conversations have been constructive, and we commend the Applicant for their efforts in updating the document in line with the MMO comments.

2.3. The DML in its current form is being reviewed by the MMO and it will provide full comments to the ExA on this updated version in its Written Representation at Deadline 2.

3. Comments on the updated Examination Timetable

3.1. The MMO has reviewed the revised Examination timetable that was sent out by the ExA in their Rule 8 Letter on 02/08/2023. The MMO welcomes the amendments made to the submission dates for Deadline 1 and 2, both of which the MMO is aware, were suggested during the Preliminary Hearing held on 25/07/2023. The MMO understands this is to ensure that the wellbeing of Interested Parties is supported through this Examination process, again, the MMO welcomes this consideration from the ExA and hopes this remains consistent throughout the remainder of the process.

3.2. The MMO is slightly concerned regarding the lack of time between the submission for Deadline 2 and 3. Given that Deadline 2 is scheduled to be one of the larger submissions in terms of documents expected from the ExA, the MMO is concerned that that 5 working days (05/09/2023-11/09/2023) is not a sufficient length of time for Interested Parties to sufficiently review the submitted documents. Regardless, the MMO will engage fully in the process and make the ExA aware of any arrangements required to ensure all documents are fully reviewed and submitted into the Examination as necessary.

4. Post ISH1 & ISH2 Written Submissions

The MMO did not attend either ISH1 or ISH2, the reasons for this were outlined in the MMO's response to the ExA Rule 6 letter, which was submitted to the ExA on 06/07/2023. However, the

MMO did listen to proceedings via the livestream function. The MMO offers the following comments relating to matters discussed in both hearings.

4.1. ISH1

4.1.1. Regarding the wider discussion of the area of jurisdiction for the Local Planning Authority versus regulatory bodies in spaces below the mean water mark, the MMO is aware that this is an issue that has been raised for several DCO applications in the past and indeed remains a concern on some active applications. The MMO wishes to state that it is happy to work with North East Lincolnshire Council to establish lines of jurisdiction if necessary, during the remainder of Examination, or indeed, any Interested Parties that require clarity on this matter.

4.1.2. The MMO agrees with the Applicants point that the drafting of the DML is an ongoing matter and that any outstanding issues likely to be resolved prior to the close of Examination. The MMO has outlined its current position on the Draft DML in Section 2 of this response.

4.2. ISH2

4.2.1. The MMO noted the Applicants submissions regarding clarity around Underwater Noise. The MMO understands that the worst-case scenario modelled for Underwater Noise was the installation of 4 piles per day and the use of a maximum of 4 piling rigs. The MMO also notes that the location of these rigs was considered in the modelling regarding its proximity to the water column. The MMO is aware that Cumulative noise levels have also been considered by the Applicant in their assessment. The MMO also notes that the number of pile strikes per day also considered with the maximum amount of pile strikes occurring simultaneously being 2. The MMO welcomes these oral submissions from the Applicant at this time.

4.2.2. The MMO has been made aware of this information through a signposting document written by the Applicant. The MMO has provided its response to this document in Section 5 of this response after consultation with its scientific advisors.

4.2.3. The MMO advocates the ExA's request for construction timescales with the conservation of protected birds and fish in mind due to the Applicants desire to undertake these works within the boundaries of some Marine Protected Areas. The MMO also welcomes the Applicants commitment to creating such timetables for review as part of this Examination.

4.2.4. The MMO notes the Applicants point that they have assessed potential impacts to the Humber SSSI in their Environmental Statement and recognises the point that these features have been addressed further in the Shadow HRA as the features are the same for the equivalent SPA and RAMSAR. The MMO defers to NE on this matter.

5. MMO comments on Marine Ecology matters

As stated by the Applicants during the ISH2 on 27th July 2023, the MMO has engaged in several discussions with the Applicants as it relates to Marine Ecology. The MMO received signposting documents from the Applicants that endeavoured to address outstanding issues related to the following topics:

- **Migratory Fish and Marine Mammals**
- **Physical Processes**
- **Water and Sediment Quality**

The MMO has outlined its position as it relates to these matters below for the ExA awareness:

5.1. Migratory Fish and Marine Mammals

5.1.1. Having reviewed the signposting document submitted by the Applicant regarding Migratory Fish and Marine Mammals, the MMO offers the following comments:

Underwater Noise

5.1.2. Regarding the usage of 4 piling rigs, as we noted in our previous round of comments, from the perspective of a receiver, in general the pulses originating from different locations will not overlap, even if the respective hammers strike in unison, because the propagation of sound is not instantaneous (and as the propagation paths likely have different lengths, simultaneous strikes will produce pulses that arrive at different times). Therefore, in general there is no need to add the sources when assessing the peak pressure. If the piling locations are relatively close together, however, then from the perspective of a distant receiver it is possible to have more overlapping pulses.

5.1.3. The MMO notes the Applicants point that '*The maximum number of pile strikes per day and cumulative Sound Exposure Levels (SEL) predictions have taken account of maximum number of piles that would be installed each day by up to four rigs and is therefore considered to already represent piling from multiple rigs'.* The MMO position is that if the SEL cum predictions have accounted for all the strikes from all four rigs within 24 hours, then the approach is correct and have no further comments to make.

5.1.4. Regarding the consideration of Temporary Threshold Shift and Fish, the MMO agrees that in this instance, modelling Temporary Threshold Shift (TTS) for fish species (as per the Popper et al., 2014 criteria) will not necessarily change the assessment conclusions. However, please note for future reports/assessments that we would expect to see TTS appropriately considered. Based on the predictions for mortality and recoverable injury for percussive piling, it would be reasonable to expect TTS ranges between 1 and 2km.

5.1.5. Regarding the Noise Modelling approach, While Farcas et al. (2016) does indeed conclude that simple spreading law models can underestimate sound levels close to the source (i.e., within tens of metres), and overestimate levels further from the source, the exercise in that paper was based on a (conservative) propagation loss of 15 log R. Simply changing / varying the model parameters can derive very different results. For example, if using a propagation loss of 17.91 (as is the case for this assessment), then one may underestimate the Received Level compared to using a different propagation loss of 16 or 17 Log R. Shallow water environments are complex, variable environments and the sensitivity of received levels to environmental properties such as bathymetry and seabed acoustic parameters can be very substantial (compared to deeper water). The Applicant should be aware of this.

5.1.6. Furthermore, the Applicant should note that the empirical absorption coefficient term (αR) accounts not only the attenuation in the water, but also for the effect of the seabed attenuation (especially when the sound propagation is in single mode regime, which is quite typical of very shallow environments). In itself, the attenuation in water at the relatively low frequencies of interest here (with the peak of the source spectra below 1 kHz), is usually a small fraction of 1 decibel (dB)/km, while the empirical term used by the model implies a much larger value of 5.23 dB/km, which further suggests that this is largely due to the seabed effects. As noted in the comment above, these effects can be very complex and their leverage on propagation can be substantial and highly variable.

5.1.7. It is also worth noting that the EA simple model specifies that the α coefficient has a rather large standard deviation, namely 3.77 dB/km, which means that, for example, one standard deviation away from the mean would reduce this attenuation from 5.23 dB/km to 1.46 dB/km, or a reduction of more than 3 times. This level of uncertainty should inform the confidence in the overall model predictions, which, as noted elsewhere, is more appropriate to give an indication of the order of magnitude of the potential effects rather than a precise prediction.

5.1.8. Regarding the justification for the 140-hour and 196-hour timeframes, the MMO considers that the proposed restriction would mean that over every 4-week period (in June and August to October), up to 196 hours of piling could be undertaken by either 2 rigs, 3 rigs or 4 rigs. In other words, the limit and temporal exposure over these periods would always remain 196 hours, independent of the number of rigs that are used. The MMO disagrees with the Applicant that the Able Marine Energy Park restrictions provide a precedent of what was considered acceptable by all relevant stakeholders, including ourselves, based on the evidence available at that time for that project. It is important to note that each project is considered on a case-by-case basis.

5.1.9. Regarding restrictions to apply to percussive piling only (and not vibro-piling), the Applicant has provided a rationale as to why the piling restrictions should only be applied to percussive piling. The Applicant is of the opinion that the effects of vibro-piling from the works on migratory fish are not considered to be significant and do not need to be mitigated: "*Based on the outcomes of the underwater noise assessment, there is a risk of a behavioural response in fish within around 1km from the source of vibro-piling which equates to less than half the width of the Humber Estuary at both low water and high water*". Unfortunately, the evidence (i.e., the predicted effect ranges) presented to support such conclusions is subject to several uncertainties. A threshold of 157 dB Sound Pressure Level Peak (SPLpeak) has been used to predict behavioural effects (converted from a threshold of 163dB peak-to-peak). As previously advised, the MMO recommend a threshold of 135dB SELss for assessing behavioural effects from impact piling. Secondly, the propagation loss of 17.91 is not necessarily precautionary. While this may be plausible, there may be more favourable propagation conditions at the site.

5.1.10. Much larger (behavioural) effects are predicted when assuming a threshold of 135dB SELss, and a propagation loss of 17.91. It is reasonable to expect behavioural effects across the full width of the estuary / river during impact piling. The MMO cannot say for certain to what extent vibro-piling may affect behaviour (and cannot definitively conclude that more than half the width of the estuary will be undisturbed and available for fish to continue their migration during periods of vibro-piling). However, the MMO would expect smaller effects for vibro-piling, given that vibro-piling has a lower source level than impact piling, and generally introduces less impact noise into the marine environment.

5.1.11. Even if we assumed that some of the estuary was undisturbed, as highlighted previously, it is not known for certain how fish species will respond and whether receptors would be able to continue moving past the site during piling operations utilising certain (i.e., lesser disturbed) parts of the estuary, or whether they would be affected. A significant impact would be if noise from piling operations causes fish to change their migratory behaviour. We do acknowledge however that vibro-piling will be undertaken for limited periods only (20 minutes of vibro-piling per 24 hours).

5.1.12. In summary, the MMO can conclude that there is a risk of impact (particularly behavioural effects) from both percussive and vibro-piling operations.

5.1.13. In respect of dredging impacts on fish, the Applicant has responded stating that they do not consider it appropriate to apply impulsive noise thresholds to the continuous source as the thresholds were not developed for this purpose and are therefore unlikely to be realistic. This, however, contradicts the statement by the Applicant who confirms that "the Popper et al. thresholds for impulsive noise have been used in the assessment of vibro-piling as set out in Appendix 9.2 (APP-088)".

5.1.14. Nevertheless, the Applicant has considered the SELcum thresholds for impulsive sources (piling) on page 9 of the Signposting document. These thresholds indicate that there is a risk of mortality/potential mortal injury within 50m in fish with a swim bladder involved in hearing, within approximately 30m in fish with a swim bladder that is not involved in hearing and approximately 10m for fish with no swim bladder. There is a risk of recoverable injury within approximately 80m in fish with a swim bladder and approximately 20m for fish with no swim bladder. Further, there is a risk of TTS occurring within approximately 700m in all fish. The MMO have no major concerns with the updated ranges considered.

5.1.15. In respect of marine mammal sensitivity to dredging, regarding the sensitivity of marine mammals to underwater noise from dredging activities, the MMO does not consider sufficient evidence has been presented to support a rating of 'low sensitivity'. However, the sensitivity rating will not alter the assessment conclusions as such, so this is a point to consider for future assessments. *McQueen et al. (2019)* highlight that although there are gaps of exposure-response data for dredging-induced sounds, in general there is no direct evidence of lethal effects to aquatic biota and limited observations of non-lethal effects (e.g., behavioural responses). Nevertheless, low-frequency sounds produced by dredging overlap with the hearing frequency ranges of many marine mammal species, which may pose risk for auditory temporary threshold shifts, auditory masking, and behavioural responses depending on dredge type and local conditions.

5.1.16. Finally, regarding the effects of dredging and vessel movements on marine mammals, the MMO had no concerns or reservations with the predictions for marine mammals for percussive/impact and vibro-piling. However, the MMO maintain that the TTS ranges for dredging are small, especially for high-frequency cetaceans. One could argue that in this instance, it may not appropriate to consider dredging as a moving (mobile) source, given that the dredging activity will be localised. In other words, although the dredging vessel will be moving, it will not travel away from the area (e.g., with 1 m/s or 3.6 km/s as assumed by the model). We do acknowledge however, that animals would not be expected to remain stationary for extended periods of time.

5.1.17. Using a different methodology (i.e., a more complex modelling approach) and fleeing animal assumptions, the MMO would predict that there is a very low risk of PTS, but TTS is plausible. We could expect TTS to be in the order of up to 1 km.

Fisheries

5.1.18. Regarding fisheries, the MMO's principal concerns regarding potential impacts to fish from dredging primarily relate to increased suspended sediment concentrations (SSC) at the dredge site within the confines of the estuary, because high SSC can cause effects in fish such clogging of gill rakers and filaments, erosion of the mucus coating and abrasion of

tissue, increased in respiration and heart rate, as well as reduce dissolved oxygen levels in water. All of these factors can result in an increase in energy expenditure/reserves and are likely to inhibit migration activities for species such as Sea Trout and River Lamprey as they attempt to negotiate estuarine environments on their upstream migrations. The Applicant has advised that peak SSC of 20,000mg/l can occur naturally in the Humber Estuary, and that the highest SSCs associated with the IERRT dredging and disposal are associated with the disposal activities rather than the dredging and have a predicted peak SSC of 600 to 800 mg/l above background. Given that the predicted peak falls well below the naturally occurring peak (of 20,000mg/l) and is situated at the disposal site, rather than the dredging site within the confines of the river, we are generally satisfied with the Applicant's response regarding effects of SSC from dredging and disposal. It is also accepted that with existing maintenance dredging already taking place in the Humber, coupled with natural fluctuations in SSC, that to some extent, fish migrating through the estuary will have a degree of tolerance to increased SSC.

5.1.19. It is noted that the maintenance dredging required for works already falls within the consent granted under the current marine licence for the Port of Immingham which grants ongoing maintenance dredging at the port and within the Humber estuary.

5.1.20. In terms of increased vessel traffic, the MMO is content that the additional six Ro-Ro vessel movements per day is a small increase overall when compared to the existing volume of marine traffic at the Port of Immingham and the Humber estuary, we are therefore content that this would not result in significant disturbance to fish.

5.1.21. In respect of our comment regarding the implementation of a night-time piling restriction related to the timing of sunrise and sunset each day, we are satisfied that this restriction can be implemented and achieved, using appropriate reference data.

5.1.22. However, to reiterate, the MMO is still not satisfied that suitable justification has been provided for the 140-hour and 196-hour piling timeframes over a 4-week period during June and August – October, proposed by the Applicant.

5.1.23. According to the signposting document '*The rationale for the 140-hour and 196-hour periods of piling proposed for IERRT is set out in the Second Technical Note dated 13 June 2022. In summary, they are based on the rationalisation and adaptation of the AMEP restrictions to take account of the specific location, nature and scale of effects associated with IERRT'*. There are key issues that the MMO will discuss in turn.

5.1.24. The Applicant states in their Signposting document that '*Each tubular pile is anticipated to require approximately 5 minutes of vibro-piling and approximately 45 minutes of impact piling. The maximum impact piling scenario is for four tubular piles to be installed each day, therefore, the maximum impact pile driving scenario would involve approximately 20 minutes of vibro-piling and 180 minutes of impact piling per day in a 12-hour shift*'.

5.1.25. If the 'worst-case' scenario for piling is 20 minutes of vibro-piling and 180 minutes of impact piling per day, over a 4-week period this equates to:

i. 20 minutes x 28 days = 560 minutes / 9 hours and 20 mins of vibro-piling in a 4-week period.
ii. 180 minutes x 28 days = 5040 minutes / 84 hours of percussive piling in a 4-week period.
iii. A total maximum duration for piling of 94 hours of piling over a 4-week period.

5.1.26. 94 hours of piling is considerably lower than the 140-hour and 196-hour piling timeframes proposed. It is therefore unclear why the Applicant is suggesting using the piling limits used for AMEP when they need considerably less time than this, even under their worst-case scenario of 4 piling rigs. Mitigation should be targeted to the nature of the activities proposed and it is not appropriate to make direct comparisons with mitigation applied to other projects without taking into account the nature and scale of the works, the number and size of piles used, and the specific details of the noise modelling undertaken for each project. Mitigation should be applied on a project-specific basis. We have also looked back at the Second Technical Note dated 13 June 2022 but there is no reasonable justification given as to why the AMEP restrictions are suitable for the IERRT project.

5.1.27. It is possible that the Applicant requires more than 94 hours of piling time in a 4-week period to take into account soft-start procedures, which we recommend would be for a period of not less than 20 minutes. However, the Applicant has not stated whether this is the case. We would expect that soft-start procedures are conditioned on the marine licence to ensure incremental increase in pile power over a set time period until full operational power is achieved. Should piling cease for a period greater than 10 minutes, then the soft start procedure must be repeated. The reason for this is to allow mobile sensitive receptors to move away from the noise source and reduce the likelihood of exposing the animal to sounds which can cause injury.

5.1.28. Furthermore, if the Applicant intended to include their soft-start period within their piling time frame, then this should be explained in detail. For example, based on a 20-minute soft start procedure for vibro-piling and for percussive piling, for each of the four rigs, this would add an additional 160 mins per day to the timescale, or 4480 mins / 74 hours and 40 minutes over a 4-week period. Adding the 96 hours of piling as calculated in 16i-iii to the maximum soft-start duration for 4 rigs gives a total of 169 hours (approximately) which is still below the 196 hours being sought for a four piling rig arrangement.

5.1.29. In the MMO's view, given the Applicant's stated worst-case scenario of a maximum of 20 minutes of vibro-piling and 180 minutes of impact piling per day (3 hours 20 minutes total), coupled with a maximum total of 120 minutes / 2 hours for soft-start procedures for 4 vibro-piling rigs and 4 percussive piling rigs as an absolute worst-case, it would likely make more sense to apply a daily restriction to the number of hours of piling.

5.1.30. The MMO maintains its position that the timing of the proposed piling restrictions within the waterbody should be *between 1 April and 31 May inclusive*, which covers part of the smolt downstream migration and from *1 June to 30 June and 1 August to 31 October inclusive*, as this will minimise the impacts on Silver Eels, River Lamprey and adult Atlantic Salmon.

5.1.31. In respect of Salmon smolts which migrate downstream during April to June (inclusive), the MMO note that it is already proposed that piling will not be carried out during April and May but that the Applicant seeks permission to pile during June. Salmon smolts are considered to use selective ebb-tide stream transport and move within the upper water column and in the fastest moving section of the water channel (Moore *et al*., 1995; Lacroix *et al*., 2004). Thus, smolts migrating downstream during June are likely to be in the main channel and vulnerable to the effects of underwater noise. With this in mind, an alternative method of implementing a piling restriction during June could be the achieved through a restriction on percussive piling during ebbing tides. We recognise that this approach is likely to have pros and cons. If the tides during daylight hours are flooding, then permitted piling hours could be longer. Conversely, if tides are ebbing during daylight hours, this may be more restrictive. Would the Applicant be willing to consider this alternative mitigation - For example, a restriction might

be worded as follows '*no percussive piling should take place for the first 5-hours of the ebbing tide to allow migration of juvenile salmon and sea trout'*.

5.1.32. In respect of elvers which migrate upstream during June, we are content that as their migration is generally nocturnal, the night-time piling restriction will afford adequate mitigation.

5.1.33. Concerning the piling restriction period of August to October (inclusive) the species of concern are Silver Eels which are migrating downstream, and River Lamprey and Adult Atlantic Salmon which are migrating upstream. European Eels possess a swim bladder making them vulnerable to underwater noise. However, the downstream migration run for silver eels typically occurs at night and during heavy rainfall (*Bertin, 1951, from Bruijs and Durif, 2009*), so the night-time piling restriction will likely afford adequate mitigation for silver eels. River Lamprey do not possess a swim bladder so are considered less vulnerable to the impacts of underwater noise. They also migrate upstream at night (*Maitland, 2003*) so the night-time piling restriction will also afford adequate mitigation for River Lamprey. Adult Atlantic Salmon possess a swim bladder so are sensitive to underwater noise. Movement by Adult Salmon through estuaries is influenced by tidal state (*Potter, 1988, and Potter et al., 1992*) with the Salmon using the upstream currents on flooding tides to move up estuaries (*Moore and Potter, 2014*). With this in mind, regarding Salmon Smolt. An alternative way of implementing a piling restriction between August and October could be the achieved through a restriction on percussive piling during flooding tides. Naturally, the same pros and cons are likely to arise, but this may be an option the Applicant could consider as an alternative mitigation strategy - For example, a restriction might be worded as follows '*no percussive piling should take place for 3 hours following low water to allow migration of adult Salmon and Sea Trout on the flooding tide.*

5.1.34. In summary, the MMO thanks the Applicant for providing their signposting document to address some of the MMO's concerns regarding the effects of increased SSC and underwater noise impacts from piling. We are content that significant impacts arising from dredging in the estuary are not likely to occur as a result of dredging for the IERRT project. Regarding the proposed percussive piling mitigation used for the AMEP project, we are not satisfied that suitable justification has been provided for the 140-hour and 196-hour piling timeframes and have requested some clarification on this. We have also outlined an alternative approach to mitigation during June (for Salmonid Smolts) and August to October (for adult Salmonids) which considers tidal states for piling, as opposed to limiting the number of hours of piling per day/week/month, which the Applicant may wish to consider.

5.2. Physical Processes

5.2.1. Having reviewed the signposting document submitted by the Applicant regarding Physical Processes, the MMO offers the following, minor comments.

5.2.2. The responses to several of the MMO comments make reference to the uncertainty of future change e.g., "*Longer-terms trends in SSC across the wider estuary are uncertain, at best…*" (comment 4.3.5 of RR-014) and "*Predicting future change over even relatively short (5-10 years) periods is highly uncertain…*" (comment 4.3.6 of RR-014), which are indeed among the reasons why we considered that the ES should consider its assessments in such a context. The responses have not quite done that in the way that we had hoped, however, the MMO has no outstanding issues in this regard.

5.2.3. The MMO has one area of interest that the Applicant has not been able to fully satisfy. This is to map the overall context and relative scope of the Immingham Ro-Ro development impacts

within the local coastal system i.e., illustrate together the extent and magnitude of 'background' and 'impacted' sediment system flows. It is the MMO's view that cumulative assessment of impacts to a specific environment should be based on a holistic view of the temporal and spatial extent of all developments affecting that environment; and that this could be achieved, for the present, by a relatively minor mapping exercise. However, the MMO recognises that this is not presently the standard practice and that present expectations of cumulative assessment are inadequate to the task of quantifying the progressive 'repeatedly negligible' degradation of overall natural status.

5.2.4. It therefore seems unlikely that the Applicant will develop this approach, particularly for a development which has little likelihood of significant effect, where it is likely to appear disproportionate. Therefore, given the responses that have been provided, we conclude that there are no remaining major concerns that require further development of the assessments.

5.2.5. In summary, the MMO does not have any immediate or definite concerns that the development impacts on coastal processes will, in themselves, result in significant coastal process change.

5.3. Water and Sediment Quality

5.3.1. Having reviewed the signposting document submitted by the Applicant regarding Water and Sediment quality, the MMO offers the following, minor comments.

5.3.2. In previous advice, the MMO raised that it was not practical to interpret the polycyclic aromatic hydrocarbons (PAHs) data as the data had been provided in PDF rather than xls format, making it un-extractable for assessment. The Applicant has not provided the data in xls format but has rather conducted the Gorham-Test (1999) (also in Long *et al* 1995 and 1998) assessment for all of the sample data. For future reference, this is not an ideal way of presenting sediment data. It is a requirement under the MMO's guidelines that Applicants submit their data in the MMO Results Template (the xls file, not a pdf version). The Applicant should bare this in mind going forward.

5.3.3. Furthermore, the Applicant states that the high molecular weight (HMW) PAHs do not exceed the Effects-range Median (ERM) in any sample, with most samples being below the Effects-range Low (ERL). This is an accurate interpretation of the results. For the low molecular weight (LMW) PAHs, along with the exceedances at sample site 1 as noted in my previous advice, the Applicant highlights an additional two sample sites (6 and 7 both at 2m depth) which exceed the ERM, then noting that no other sample exceeds the ERM, and 41% of samples being below the ERL.

5.3.4. Finally, other than samples 1, 6 and 7, most of the other samples show levels to be around the mid-point between the ERL and the ERM. The Applicant has stated that they have modified the design of the works so as to avoid these sample sites. The MMO agrees that this is an appropriate decision and would recommend that if these sites are to be dredged, that the material is to be disposed of at a land-based facility and that the dredging is conducted by enclosed (e.g., clamshell) bucket dredging to minimise the potential for contaminated material to be mobilised into the water column.

6. Notification of wish to have future correspondence received electronically

The MMO herby notifies the ExA that it requests all future correspondence to be received electronically where possible throughout the remainder of the examination period.

Yours sincerely,

[redacted]

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