



## Habitats Regulations Assessment

**Table 1: Proposed plan or project details**

<b>Title of project</b>	Liverpool Cruise Terminal
<b>Case reference</b>	MLA/2019/00012 (Marine Licence) DC10147 (Harbour Revision Order)
<b>Applicant name</b>	Liverpool City Council
<b>Type of licensable activity/ies</b>	7. To construct, alter or improve any works within the UK marine licensing area either— (a) in or over the sea, or (b) on or under the sea bed.
<b>Location of works</b>	Princes Dock, Liverpool - See Annex 1 Liverpool Bay SPA
<b>Description of proposed project</b>	<p>The proposed Cruise Terminal location is Princes Dock, Liverpool. The site is approximately 5.77 hectares (ha) in area. The main elements of the proposed Development comprise:</p> <ul style="list-style-type: none"><li>• Demolition of buildings and structures, including the controlled removal of Princes Jetty;</li><li>• Construction of a new landing stage and suspended concrete deck;</li><li>• Construction of a cruise liner terminal building, with a maximum height of 30m (AOD);</li><li>• Modification of the existing cruise liner terminal building to accommodate cruise related ancillary uses; including staff facilities and storage, on completion of the new cruise liner terminal; and</li><li>• Erection of a vehicular and pedestrian linkspan bridge (linking the new terminal building and the existing pontoons).</li></ul>

	<p>An outline sequence of the demolition and construction activities is expected to be:</p> <ul style="list-style-type: none"> <li>• Pre-commencement surveys, including structural and archaeological recording of Princes Jetty;</li> <li>• Service diversions;</li> <li>• Enabling works, including installation of perimeter hoarding and a temporary Site office with staff welfare facilities;</li> <li>• The use of barges in the Mersey Estuary to undertake the demolition of Princes Jetty including the concrete deck and wooden piles;</li> <li>• Installation of new piles upon which a new concrete deck structure would be constructed;</li> <li>• Removal and relocation of the building on Pontoon D;</li> <li>• Construction of the new concrete deck jetty;</li> <li>• Construction of the new terminal building on the new concrete deck jetty; and</li> <li>• Finishing, testing and commissioning.</li> </ul>
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**Table 2: Need for a Habitats Regulations Assessment (HRA)**

<b>2.1 - Is the proposal directly connected with, or necessary to the management of a N2K site for the purpose of conserving the habitats or species for which the site is designated?</b>	No
<b>2.2 - Is it necessary to carry out a HRA?</b>	Yes
<b>For the reasons given in section 2.1 and 2.2, this proposal is considered to require HRA.</b>	

**Table 3: Details of N2K site identified**

Consideration of the following types of N2K site should be given below, if applicable: cSAC, pSAC, SCI, pSPA, SPA and Ramsar.

<b>Name of N2K site: Liverpool Bay SPA</b>
<b>Is a licensable activity taking place within or near a N2K site:</b> Yes – directly in
<b>Conservation advice package used:</b> <a href="http://publications.naturalengland.org.uk/file/5733149452009472">http://publications.naturalengland.org.uk/file/5733149452009472</a> <a href="http://publications.naturalengland.org.uk/file/6035363693068288">http://publications.naturalengland.org.uk/file/6035363693068288</a> (citation of extension to this site) The 2012 document provides detailed evidence for the original features and the 2016 document provides high level Conservation Objectives for the extended site. The 2016 document is not currently available online but can be made available from MMO on request.
<b>Date conservation advice was last accessed:</b> 04/02/19
<b>Conservation objective(s):</b> <a href="http://jncc.defra.gov.uk/page-7507">http://jncc.defra.gov.uk/page-7507</a>
<b>Name of N2K site: Mersey Narrows &amp; North Wirral Foreshore SPA and Ramsar</b>
<b>Is a licensable activity taking place within or near a N2K site:</b> Yes, activity proposed approximately 850 m east of the designated site
<b>Conservation advice package used:</b> <a href="https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020287&amp;SiteName=nar&amp;countyCode=&amp;responsiblePerson=&amp;unitId=&amp;SeaArea=&amp;IFCAArea=">https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020287&amp;SiteName=nar&amp;countyCode=&amp;responsiblePerson=&amp;unitId=&amp;SeaArea=&amp;IFCAArea=</a>
<b>Date conservation advice was last accessed:</b> 04/02/19
<b>Conservation objective(s):</b> <a href="https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020287&amp;SiteName=nar&amp;countyCode=&amp;responsiblePerson=&amp;unitId=&amp;SeaArea=&amp;IFCAArea=#hlco">https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9020287&amp;SiteName=nar&amp;countyCode=&amp;responsiblePerson=&amp;unitId=&amp;SeaArea=&amp;IFCAArea=#hlco</a>
<b>Name of N2K site: Ribble and Alt Estuaries SPA, Ramsar</b>
<b>Is a licensable activity taking place within or near a N2K site:</b> Yes approximately 6300 m northwest of the site

<p><b>Conservation advice package used:</b>  <a href="https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9005103&amp;SiteName=ribb&amp;countyCode=&amp;responsiblePerson=&amp;eaArea=&amp;IFCAAarea=">https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9005103&amp;SiteName=ribb&amp;countyCode=&amp;responsiblePerson=&amp;eaArea=&amp;IFCAAarea=</a> (used for SPA and Ramsar)</p>
<p><b>Date conservation advice was last accessed:</b> 07/02/08</p>
<p><b>Conservation objective(s):</b>  <a href="https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9005103&amp;SiteName=ribb&amp;countyCode=&amp;responsiblePerson=&amp;eaArea=&amp;IFCAAarea=#hlco">https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9005103&amp;SiteName=ribb&amp;countyCode=&amp;responsiblePerson=&amp;eaArea=&amp;IFCAAarea=#hlco</a>  <a href="http://jncc.defra.gov.uk/pdf/RIS/UK11057.pdf">http://jncc.defra.gov.uk/pdf/RIS/UK11057.pdf</a></p>
<p><b>Name of N2K site:</b> Sefton Coast SAC</p>
<p><b>Is a licensable activity taking place within or near a N2K site:</b> Yes 6840 m northwest of the site</p>
<p><b>Conservation advice package used:</b> <a href="http://publications.naturalengland.org.uk/publication/6588974160150528">http://publications.naturalengland.org.uk/publication/6588974160150528</a> -  As there is no advice on operations available for this site, I have used those from the Dee Estuary SAC to act as guidance for the assessment of pressures against this site.</p>
<p><b>Date conservation advice was last accessed:</b> 07/02/19</p>
<p><b>Conservation objective(s):</b> <a href="http://publications.naturalengland.org.uk/file/5246658212528128">http://publications.naturalengland.org.uk/file/5246658212528128</a></p>

## Likely Significant Effect (LSE)

In formulating the LSE alone assessments, Natural England's/ JNCC's Conservation Advice Packages, as outlined in Table 3, have been consulted and the following principles applied:

- Where available, the 'Advice on Operations' (AoO) matrix to determine pressures associated with the proposed activities that may potentially harm the qualifying habitat features and/ or species of the sites has been used.
- The activities selected for the AoO matrix were Ports and Harbours – construction, maintenance and operation.
- Low risk pressures, unless there is evidence or site specific factors that increase the risk, or uncertainty on the level of pressure on a receptor, this pressure generally does not occur at a level of concern and should not require consideration as part of the assessment.

- Features deemed sensitive to pressures (medium and high risk) for both direct and indirect pathways are taken forward into the LSE assessment.
- The individual pressure/ feature interactions categorised as 'Not Sensitive' at the benchmark are not taken forward into the LSE assessment. The MMO considers that the impacts on these features as a results of the activities will be less than the benchmarks specified for these pressure/ feature interactions.
- For pressure/ feature interactions categorised as 'Not Relevant' these are not taken forward into the LSE assessment. The MMO considers that there is no interaction of concern between the pressure/ feature or the activity and the feature could not interact.
- Features deemed sensitive to pressures (medium and high risk) for both direct and indirect pathways are taken forward into the LSE assessment.
- Pressure/ feature interactions categorised as either 'Insufficient Evidence' or 'Not Assessed' have been taken forward into the LSE assessment in accordance with the precautionary principle.

## Part 1 – Alone

Liverpool Bay SPA			
Pressure	Qualifying feature or species (include sub-features and supporting habitats)	LSE?	Justification
Physical loss of supporting habitat - Removal of habitat feature (e.g. offshore development, capital dredging, „active dredging zones“)	Red-throated diver – <i>Gavia stellata</i> (non-breeding) Common Scoter – <i>melanitta nigra</i> (non-breeding) Little gull - <i>Hydrocoloeus minutus</i> (non-breeding) Little tern - <i>Sternula albifrons</i> (breeding)	Yes – for cormorant and subtidal sand	There will be piling and construction on the river bed, indicating that this will remove a small amount of subtidal sand, see Annex 2 for further justification of this. A likely significant effect on this supporting habitat cannot be ruled out.  There will be physical removal of a structure as Princes Jetty is due to be demolished. The applicant has advised us that the cormorants rest and roost on this jetty. The jetty is an artificial structure and therefore is not listed as a supporting habitat for the qualifying features of the designated site but has an ecological function as evidence from the applicants indicates the cormorants use it for resting.. A likely significant effect cannot be ruled out.

	<p>Common tern – <i>Sterna hirundo</i> (breeding) Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>		<p>Appendix 13.7 Waterman (2019) states that foraging common tern may be using the terminal construction area for feeding. However, as there are other foraging areas in the river which can be used, no LSE is predicted on the foraging common tern.</p> <p>Red throated diver, common scoter, red-breasted merganser and little gulls are out to sea therefore are too distant to be impacted by loss of habitat. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds in the area, see appendix 13.2a Waterman (2019).</p>
<p>Smothering (e.g. by artificial structures, disposal of dredge spoil)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding) Common Scoter – <i>melanitta nigra</i> (non-breeding) Little gull - <i>Hydrocoloeus minutus</i> (non-breeding) Little tern - <i>Sternula albifrons</i> (breeding) Common tern – <i>Sterna hirundo</i> (breeding) Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	<p>No</p>	<p>There will be the placement of artificial structures on the sea bed as part of this proposal. This is to reduce scour from the ships. This may smother some benthic species that bird species use for prey. However, the berth pocket and surrounding areas have been frequently dredged by the harbour authority. There is already frequent silt disturbance in this area and therefore the proposed works will not be outside typical disturbance in the area, so no likely significant effect is anticipated.</p> <p>L/2012/00459/11, L/2016/00102/3 and L/2018/00334/3 have been granted for dredging of the area.</p> <p>There could be an increase of suspended sediment and smothering due to the removal of piles for jetty demolition and drilling and installation of piles. However, the area is frequently dredged so is habituated to changes in sediment and no dredging is to occur simultaneously. Therefore, no LSE is predicted.</p> <p>Little tern breeding and feeding areas are not in proximity to the site, red-breasted merganser, red throated diver, common scoter and little gulls are out to sea therefore are too distant to be impacted by any smothering. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds near to the project area, see appendix 13.2 Waterman (2019).</p>

<p>Siltation (e.g. run-off, channel dredging, outfalls)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	<p>No</p>	<p>There will be piling associated with this project. This may disturb silt in the area which could affect the supporting habitats and prey of bird species.</p> <p>There will be no dredging associated with this proposal. However, the berth pocket and surrounding areas are frequently dredged by the harbour authority. There is already frequent silt disturbance in this area. L/2012/00459/11, L/2016/00102/3 and L/2018/00334/3 have been granted for dredging of the area.</p> <p>Little tern breeding and feeding areas are not in proximity to the site, red-breasted merganser, red throated diver, common scoter and little gulls are out to sea therefore are too distant to be impacted by any siltation. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds nearby to the project area, see appendix 13.2 Waterman (2019).</p>
<p>Abrasion (e.g. anchoring, cables )</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great</p>	<p>No</p>	<p>There will be mooring dolphins built as part of this project, however anchors may need to be used. If used, they would cause abrasion to the river bed and therefore what could be a supporting habitat. However, this berth pocket is already frequently dredged by the harbour authority, therefore removing the river bed and reducing its potential to be a supporting habitat for the SPA birds.</p>

	<p>cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>		
Selective extraction (e.g. aggregate dredging)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p> <p>Common Scoter – <i>melanitta nigra</i> (non-breeding)</p> <p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)</p> <p>Little tern - <i>Sternula albifrons</i> (breeding)</p> <p>Common tern – <i>Sterna hirundo</i> (breeding)</p> <p>Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	No	There is no selective extraction associated with this proposal.
Above water noise (e.g. boat activity, construction)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p> <p>Common Scoter – <i>melanitta nigra</i> (non-breeding)</p> <p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)</p>	Yes – for common tern and cormorant only.	<p>The noise from the construction phase may cause a disturbance and LSE on the bird species.</p> <p>There will be piling and other construction activities which cause noise. Evidence shows that only common tern and cormorant are in the vicinity of the site. Appendix 13.2 and 13.7 Waterman (2019).</p>



	<p>Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>		<p>Little tern breeding and feeding areas are not in proximity to the site, red-breasted merganser, red throated diver, common scoter and little gulls are out to sea therefore are too distant to be impacted by construction noise. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds in the project area, see appendix 13.2 Waterman (2019).</p> <p>For the operational phase of this project, there is likely to be a small increase in vessel movements which could potentially impact those species which are out at sea. However, there is already a large amount of vessel traffic visiting the surrounding area and it is not thought that the slight increase will cause LSE on those features.</p>
Under water noise (e.g.boat activity, construction)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	Yes – for common tern and cormorant only.	<p>Underwater noise changes may occur as part of the jetty demolition and construction phase and have an impact on the feeding capabilities of the common tern and cormorant, through changes to the water column.</p> <p>Little tern breeding and feeding areas are not in proximity to the site, red-breasted merganser, red throated diver, common scoter and little gulls are out to sea therefore are too distant to be impacted by construction noise. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds in the project area, see appendix 13.2 Waterman (2019).</p> <p>For the operational phase of this project, there is likely to be a small increase in vessel movements which could potentially impact those species which are out at sea, especially diving birds. However, there is already a large amount of vessel traffic visiting the surrounding area and it is not thought that the slight increase will cause LSE on those features.</p>
Visual	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)</p>	Yes – common tern and cormorant only	<p>There may be artificial light sources used as part of the construction phase for working after dark. They may disorientate or detract birds from this site. The new terminal building will be a two story structure built on an area which is currently a disused jetty therefore there is a change in visual appearance at the site. This could disorientate birds.</p>

	<p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)          Little tern - <i>Sternula albifrons</i> (breeding)          Common tern – <i>Sterna hirundo</i> (breeding)          Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>		<p>There will be an increase of lighting on the quayside once the terminal is complete. This may also disorientate or detract birds.          However, the surrounding area already has a fair amount of tall buildings and artificial light due to the city location, which the birds are likely to be habituated to.</p> <p>No LSE is predicted for the operational phase but cannot be ruled out for the construction.</p> <p>Once operational, it is not considered that there will be a visual disturbance from the cruise terminal as the surrounding area is quite built up. The new terminal building will have a large amount of glass. There could be an increase in bird strikes in the area. However, bird strikes are quite a rare occurrence and a small number of strikes is not expected to cause a likely significant effect on this site.</p> <p>The birds considered to be close enough to be impacted are common tern and cormorant. Evidence shows that the other species do not use the area surrounding the development site. Appendix 13.2 Waterman (2019) and Appendix 13.7 Waterman (2019).</p>
<p>Introduction of synthetic compounds (e.g. pesticides, TBT, PCBs)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)          Common Scoter – <i>melanitta nigra</i> (non-breeding)          Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)          Little tern - <i>Sternula albifrons</i> (breeding)          Common tern – <i>Sterna hirundo</i> (breeding)          Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great</p>	<p>No</p>	<p>The introduction of these compounds is considered unlikely due to the nature of the development. Pesticides are unlikely to be used in cruise terminals. During construction, it is unlikely that these compounds could be released into the environment. Sediment which may be disturbed during construction has been tested for contaminants.</p> <p>During operation, the introduction of these synthetic compounds is unlikely as TBT and PCBs are no longer used.</p>

	cormorant <i>Phalacrocorax carbo</i> )		
Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p> <p>Common Scoter – <i>melanitta nigra</i> (non-breeding)</p> <p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)</p> <p>Little tern - <i>Sternula albifrons</i> (breeding)</p> <p>Common tern – <i>Sterna hirundo</i> (breeding)</p> <p>Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>The pressure is related to both the birds and the supporting habitat.</p>	Yes – for all features	The introduction of these compounds is considered unlikely from this development. However, hydrocarbon based fuels may be used in the visiting cruise ships and any construction plant. The risk of fuel spills is minor and the magnitude of a spill would also change the ‘significance’ of an effect. A catastrophic spill could have devastating effects on the bird features and supporting habitats. All bird species would be considered vulnerable to this as a spill could occur from a vessel which may be in any of the areas that the birds use. LSE cannot be ruled out at this stage.
Introduction of radionuclides	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p> <p>Common Scoter – <i>melanitta nigra</i> (non-breeding)</p> <p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)</p> <p>Little tern - <i>Sternula albifrons</i> (breeding)</p> <p>Common tern – <i>Sterna hirundo</i> (breeding)</p>	No	There should be no radionuclides introduced as part of this proposal. No LSE expected.

	<p>Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>The pressure is related to both the birds and the supporting habitat.</p>		
Changes in nutrient loading (e.g. agricultural run-off, outfalls)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p> <p>Common Scoter – <i>melanitta nigra</i> (non-breeding)</p> <p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)</p> <p>Little tern - <i>Sternula albifrons</i> (breeding)</p> <p>Common tern – <i>Sterna hirundo</i> (breeding)</p> <p>Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	No	It is unlikely that there would be a change in nutrient loading, it is not related to any parts of the proposal.
Changes in organic loading (e.g. mariculture, outfalls)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)</p>	No	It is unlikely that there would be a change in organic loading, it is not related to any parts of the proposal.

	<p>Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>		
<p>Changes in thermal regime (e.g. power stations)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	<p>No</p>	<p>It is unlikely that there would be a change in the thermal regime of the area, it is not related to any parts of the proposal.</p>

	This pressure is related to the supporting habitats and prey species of the above listed birds.		
Changes in turbidity (e.g. run-off, dredging)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	No	<p>Changes to turbidity will be very localised. There is no dredging or run off associated with this proposal. There will be some piling and placing of structures on the seabed. However, it is not expected that they will have a likely significant effect on turbidity as the surrounding area already is an area of already high turbidity.</p> <p>Little tern breeding and feeding areas are not in proximity to the site, red-breasted merganser, red throated diver, common scoter and little gulls are out to sea therefore are too distant to be impacted by any turbidity. Appendix 13.7 Waterman (2019). The applicant has conducted wintering bird surveys in 2017/18 and these did not show any of these birds in the project area, see appendix 13.2 Waterman (2019).</p>
Changes in salinity (e.g. water abstraction, outfalls)	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)</p>	No	There are no activities related to this proposal which would change the salinity of the area.

	<p>Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>		
<p>Introduction of non-native species and translocation</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	<p>Yes</p>	<p>There could be a risk of non-native species being spread through visiting ships ballast waters and if construction plant is not cleaned properly if used in other areas.</p> <p>All species could be considered to be vulnerable to this pressure as the area and extent of the spread of INNS may not be known until it has caused a problem.</p>

<p>Human induced mortality of bird species (e.g. accidental turbine strike)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	<p>No</p>	<p>It is not considered likely that there will be any human induced mortality of bird species from the proposal, due to the nature of the works.</p>
<p>Human induced mortality of bird species (e.g. entanglement or by-catch)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	<p>No</p>	<p>It is not considered likely that there will be any human induced mortality of bird species from the proposal, due to the nature of the works.</p>



<p>Selective extraction and removal of prey species (e.g. commercial and recreational fishing)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p> <p>This pressure is related to the supporting habitats and prey species of the above listed birds.</p>	<p>No</p>	<p>This pressure is not related to activities included with the construction or operation of the terminal. No LSE possible.</p>

Mersey Narrows and North Wirral Foreshore SPA and Ramsar			
Pressure	Qualifying feature or species (include sub-features and supporting habitats)	LSE?	Justification
<p>Above water noise</p>	<p>Bar tailed godwit (non-breeding)  Common tern (breeding)  Common tern (non-breeding)</p>	<p>Yes – Common tern, Bar tailed godwit, Knot and</p>	<p>This pressure relates to any loud noise made onshore or offshore by construction, vehicles (including aircraft), vessels, tourism, mining, blasting etc. that may disturb birds and reduce time spent in feeding or breeding area.</p>

	<p>Knot (non-breeding) Little Gull (non breeding) Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6: Regularly supports 1% or more of a species or sub-species of waterbird</p>	<p>waterbird assemblage (redshank cormorant, grey plover, sanderling)</p>	<p>Noise from the construction period may disturb birds, particularly percussive piling if used. The demolition of the old jetty may also cause disturbance.</p> <p>Bar tailed godwit are known to roost within at Seaforth however, no significant high tide roosts have been recorded on the North Wirral Foreshore (Still et al., 2013). Daily movements occur between the intertidal feeding areas of the Mersey Narrows and North Wirral Foreshore SPA and roosting locations on the Ribble and Alt Estuaries SPA (Kirby et al., 1989), (Still et al., 2013). The Mersey Narrows and North Wirral Foreshore SPA, and in particular the intertidal mudflats of the North Wirral Foreshore, have been identified as an important low-tide feeding area for this species (Still et al., 2013). There may be some impact from above water noise on godwits which use the mudflats directly opposite the works site. No LSE on godwits cannot be ruled out.</p> <p>Common terns nest within the SPA on artificial rafts at Seaforth Nature Reserve, a 30 ha reserve managed by The Lancashire Wildlife Trust (The Wildlife Trusts, 2014). Breeding terns are also known to nest within the Liverpool and Birkenhead Docks area, outside the boundary of the SPA, including Langton Dock and East Float (Banks, 2018 Pers Comm), (Monteith, 2018). Those at East Float dock are 1.5km away from the works. They may move closer to the works site to forage on the east or west bank of the Mersey. They may be impacted by noise from the construction work. No LSE cannot be ruled out for common tern.</p> <p>The site provides an important feeding area for wintering knot. The extensive sandy and muddy intertidal habitat (predominantly along the North Wirral Foreshore) supports a diverse community of bivalves (Centre for Marine and Coastal Studies Ltd., 2011) which represent the majority of the knots winter diet (Robinson, 2005). Knots may be disturbed by some above water noise, therefore no LSE cannot be ruled out for Knots.</p> <p>Little gull mainly use this SPA during passage while migrating from their wintering grounds in southern Europe to breeding grounds in northern Eurasia and Scandinavia (BirdLife International, 2014). There are no roosts identified within the SPA (Still et al., 2013), however there is evidence to show that roosting aggregations offshore in Liverpool Bay/Bae Lerpwl SPA are linked to the birds feeding at Seaforth (Allcock et al., 2013). During</p>
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			<p>periods of harsh weather birds roosting at sea may come to Seaforth for shelter (Allcock et al., 2013). Therefore, the little gulls are not considered to be at risk from over water noise from this project.</p> <p>Other birds from the assemblage may be at risk from the works. Data in the applicant's ES Addendum 4th Issue pg. 68 states that oystercatcher and redshank were not usually found in the area during recent overwintering bird surveys. Therefore, no LSE for oystercatcher and redshank is expected. The applicant's Ornithology Desk Study, 13.2a Waterman (2019), states that Dunlins are usually found on the North Wirral foreshore. Therefore, no LSE for Dunlins are expected.</p> <p>The applicant's Ornithology Desk Study, 13.2a Waterman (2019), states that up to 400 redshank have been found in the Mersey Narrows area which is 800 m directly across the water from the works. No LSE cannot be ruled for redshank.</p> <p>Information for detailed locations of cormorant, grey plover, sanderling in this SPA cannot be found in the applicant's documents nor the conservation advice package. Therefore, they will be taken forward as no LSE cannot be ruled out due to distance.</p>
Abrasion/disturbance of the substrate on the surface of the seabed	Coastal lagoons Salicornia and other annuals colonising mud and sand Atlantic salt meadows Intertidal rock Intertidal biogenic reef: mussel beds Intertidal biogenic reef Intertidal mixed sediments Intertidal mud Intertidal sand and muddy sand	No	<p>It is considered that these static features are at least 850m from the works site, therefore too far from the works site for them to be directly or indirectly impacted by any abrasion/disturbance of the substrate on the surface of the seabed. No pathway identified.</p>

Barrier to species movement	<p>Bar tailed godwit (non-breeding)  Knot (non-breeding)  Little gull (non-breeding)  Common tern (breeding and non-breeding)  Waterbird assemblage  <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Ramsar Criterion 4 :  regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5:  Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6:  Regularly supports 1% or more of a species or sub-species of waterbird</p>	No	It is not considered that the construction of the new terminal will provide a physical barrier to species movement. The terminal building will be constructed on the banks of the river, next to an urban area. There are other buildings in the vicinity of the proposed terminal building. There would be no further barrier to migration.
Changes in suspended solids (water clarity)	<p>Common tern (breeding and non-breeding)  Little gull</p>	No	Common tern and tern species are, in general, visual foraging birds, which depends on clear water to identify and catch potential prey. Therefore they are sensitive to changes in turbidity (van Kruchten & van der Hammen 2011).

	<p>(non-breeding) Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6: Regularly supports 1% or more of a species or sub-species of waterbird</p>		<p>When assessing potential impacts of increased water turbidity on sandwich tern, van Kruchten &amp; van der Hammen (2011) pointed out the importance of considering natural background turbidity levels.</p> <p>Little gulls are primarily insectivorous when breeding, seemingly switching to small fish and marine invertebrates including zooplankton as their primary food source in the non-breeding season (winter). Turbidity could therefore impact their ability to see zooplankton and fish although no species-specific evidence was found on the relationship within turbidity levels and little gull foraging success.</p> <p>Similar impacts are predicted for Waterbird assemblage.</p> <p>It is thought that there could be a small change in suspended sediment from construction activities, for example from the piling. This would be localised to the construction site area. No dredging is proposed. The common terns and little gulls from this site may use areas of the Mersey closer to the development for feeding however, as the impacts will be localised to the construction site and unlikely to impact this SPA as it is around 850m away. The Mersey is also already an area with low water clarity. No LSE is expected.</p>
Changes in suspended solids (water clarity)	<p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Intertidal rock</p> <p>Intertidal biogenic reef</p> <p>Intertidal mixed sediments</p> <p>Intertidal mud</p>	No	<p>It is thought that there could be a small change in suspended sediment from construction activities, for example from the piling. This would be localised to the site area. No dredging is proposed.</p> <p>The features of the Mersey Narrows and North Wirral Foreshore SPA are considered to be too far from the development site to be affected.</p>

	Intertidal sand and muddy sand Water column		
Emergence regime changes, including tidal level change considerations	<p>Bar tailed godwit (non-breeding) Common tern (breeding) Common tern (non-breeding) Knot (non-breeding) Little Gull (non breeding) Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Coastal lagoons Salicornia and other annuals colonising mud and sand Atlantic salt meadows Intertidal rock Intertidal biogenic reef: mussel beds Intertidal biogenic reef Intertidal mixed sediments Intertidal mud Intertidal sand and muddy sand Water column</p>	No	<p>Structures or material placed in the marine environment associated with ports and harbours (including solid and piled structures) will change the form/profile of an area of seabed or estuary, resulting in localised changes to the tide. Construction of (large scale) ports and harbour infrastructure particularly in estuaries (and associated activities, capital dredging, land reclaim), will alter seabed/estuary profile resulting in changes in tidal flows, propagation altering the tidal curve and tidal in an area/estuary.</p> <p>There will be a small amount of new structures placed in the River Mersey but they are not considered to have an impact on tidal level changes.</p>

	<p>Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6: Regularly supports 1% or more of a species or sub-species of waterbird</p>		
Habitat structure changes - removal of substratum (extraction)	<p>Coastal lagoons</p> <p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Intertidal rock</p> <p>Intertidal biogenic reef: mussel beds</p> <p>Intertidal biogenic reef</p> <p>Intertidal mixed sediments</p> <p>Intertidal mud</p> <p>Intertidal sand and muddy sand</p> <p>Water column</p>	No	There will be no dredging as part of this proposal. No pathway identified.

Introduction of light	<p>Bar tailed godwit (non-breeding)  Knot (non-breeding)  Little gull (non-breeding)</p> <p>Common tern (breeding and non-breeding)</p> <p>Waterbird assemblage  <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Ramsar Criterion 4 :  regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5:  Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6:  Regularly supports 1% or more of a species or sub-species of waterbird</p>	No	<p>There may be artificial light sources used as part of the construction phase for working after dark. They may disorientate or detract birds from this site.</p> <p>There will be an increase of lighting on the quayside once the terminal is complete. This may also disorientate or detract birds.</p> <p>However, the terminal will be constructed around 850m away from this designated site, in an area where there is already a fair amount of artificial light due to the city location, which the birds will be habituated to. No LSE is predicted.</p>
Introduction of light	Intertidal rock	No	These features are considered too far from the construction site to be impacted from the effects of artificial lighting. No pathway identified.



	<p>Intertidal biogenic reef: mussel beds</p> <p>Intertidal biogenic reef</p> <p>Intertidal mixed sediments</p> <p>Intertidal sand and muddy sand</p> <p>Water column</p>		
<p>Penetration and/or disturbance of the substratum below the surface of the seabed, including abrasion</p>	<p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Intertidal rock</p> <p>Intertidal biogenic reef: mussel beds</p> <p>Intertidal biogenic reef</p> <p>Intertidal mixed sediments</p> <p>Intertidal sand and muddy sand</p> <p>Water column</p>	No	<p>From this development, a pressure example would be piling. However, none of the piling which will take place is directly in this SPA. No pathway identified.</p>
<p>Physical change (to another seabed type)</p>	<p>Intertidal rock</p>	No	<p>No impact is predicted to intertidal rock as there will be no construction directly in the area of intertidal rock. No pathway identified.</p>
<p>Physical change (to another sediment type)</p>	<p>Salicornia and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Intertidal biogenic reef: mussel beds</p> <p>Intertidal mixed sediments</p> <p>Intertidal mud</p>	No	<p>No impact is predicted to intertidal rock as there will be no construction directly in the area of these features. No pathway identified.</p>

	Intertidal muddy sand		
Physical loss (to land or freshwater habitat)	Coastal lagoons Salicornia and other annuals colonising mud and sand Intertidal rock Atlantic salt meadows Intertidal biogenic reef: mussel beds Intertidal mixed sediments Intertidal mud Intertidal muddy sand Water column	No	These features are 850m from the construction site, therefore there will be no construction directly in the supporting features, leading to no physical loss of habitat.
Removal of non-target species	Bar tailed godwit (non-breeding) Common tern (breeding) Common tern (non-breeding) Knot (non-breeding) Little Gull (non breeding) Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i>  Coastal lagoons Intertidal rock Atlantic salt meadows Intertidal biogenic reef: mussel beds	No	This pressure relates to these features being removed as part of fishing or hunting. There are no activities which are related to fishing or hunting for this proposal. There will be no activities which could impact the removal of the supporting habitats as they are too far from the construction site.

	<p>Intertidal mixed sediments  Intertidal mud  Intertidal muddy sand  Water column</p> <p>Ramsar Criterion 4 :  regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions</p> <p>Ramsar Criterion 5:  Regularly supports 20,000 or more waterbird species</p> <p>Ramsar Criterion 6:  Regularly supports 1% or more of a species or sub-species of waterbird</p>		
Smothering and siltation rate changes (Heavy)	<p>Coastal lagoons  Intertidal rock  Atlantic salt meadows  Intertidal biogenic reef: mussel beds  Intertidal mixed sediments  Intertidal mud  Intertidal muddy sand</p>	No	There will be the placing of some structures on the seabed which can cause siltation as part of the construction activity, however the construction site is considered to be too far from these features for them to be affected.

Smothering and siltation rate changes (Light)	Intertidal biogenic reef: mussel beds Intertidal mixed sediments Intertidal mud Intertidal muddy sand	No	There will be the placing of some structures on the seabed which can cause siltation as part of the construction activity, however the construction site is considered to be too far from these features for them to be affected.
Underwater noise changes	Common tern (breeding and non-breeding) Little gull Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i>  Atlantic salt meadows Water column  Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species Ramsar Criterion 6: Regularly supports 1% or more of a	Yes – for common tern	Underwater noise changes may occur as part of the jetty demolition and construction phase and have an impact on the feeding capabilities of the common tern and little gull, through changes to the water column.  Common tern feed on small fish within the nearby coastal and estuarine waters of Liverpool Bay/Bae Lerpwl SPA, Ribble and Alt Estuaries SPA and Mersey Estuary SPA as well as the intertidal areas of Mersey Narrows and North Wirral Foreshore SPA when inundated (Natural England (NE) et al., 2016), (Perrow et al., 2015) by plunge diving, relying on sharp vision and clear water to identify their prey (Varela et al., 1993).  Little gull mainly use this SPA during passage while migrating from their wintering grounds in southern Europe to breeding grounds in northern Eurasia and Scandinavia (BirdLife International, 2014). There are no roosts identified within the SPA (Still et al., 2013), however there is evidence to show that roosting aggregations offshore in Liverpool Bay/Bae Lerpwl SPA are linked to the birds feeding at Seaforth (Allcock et al., 2013). During periods of harsh weather birds roosting at sea may come to Seaforth for shelter (Allcock et al., 2013). Therefore, the little gulls are not considered to be at risk from under water noise from this project.

	species or sub-species of waterbird		
Vibration	Salicornia and other annuals colonising mud and sand Intertidal salt meadows Water column	Yes – common tern	Vibration from the construction of the terminal may affect the water column and therefore any fish species which birds rely on for prey. Common tern feed in the area and rely on small fish in the water column. These fish may be impacted by vibration from the drilling. No LSE cannot be ruled out. The Salicornia and other annuals colonising mud and sand and the Intertidal salt meadows are not considered to be affected.
Visual disturbance	Bar tailed godwit (non-breeding) Knot (non-breeding) Common tern (breeding) Waterbird assemblage <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i>  Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species Ramsar Criterion 6: Regularly supports 1% or more of a	No	The birds are not expected to be affected by visual disturbance, the construction of the cruise terminal is around 850m away.

	species or sub-species of waterbird		
Water flow (tidal current) changes, including sediment transport considerations	<p>Common tern (breeding and non-breeding)  Little gull (non-breeding)  Waterbird assemblage  <i>Cormorant, oystercatcher, grey plover, sanderling, knot, dunlin, bar-tailed godwit, redshank</i></p> <p>Coastal lagoons  Intertidal rock  Intertidal biogenic reef: mussel beds  Intertidal mixed sediments  Intertidal mud  Intertidal muddy sand  Water column</p> <p>Ramsar Criterion 4 : regularly supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions  Ramsar Criterion 5: Regularly supports 20,000 or more waterbird species</p>	No	It is not expected that there will be any changes to water flow from the construction or operational phase.

	Ramsar Criterion 6: Regularly supports 1% or more of a species or sub-species of waterbird		
Wave exposure changes	Intertidal rock Intertidal biogenic reef: mussel beds Water column	No	Any minor changes to wave exposure would be localised to the development site and are not expected to have any LSE on these features as they are located too far away.

<b>Ribble and Alt Estuaries SPA and Ramsar</b>			
<b>Pressure</b>	<b>Qualifying feature or species (include sub-features and supporting habitats)</b>	<b>LSE?</b>	<b>Justification</b>
Physical loss (to land or freshwater habitat)	Freshwater and coastal grazing marsh Salicornia and other annuals colonising mud and sand Atlantic salt meadows Intertidal rock Intertidal mixed sediments Intertidal mud Intertidal sand and muddy sand Water column	No	These features are approximately 6300m from the construction site, therefore there will be no construction directly in the supporting features, leading to no physical loss of habitat. However, during operation, there may be a slight increase in visitors to the area from the cruise ships on day trips to the local area. This may mean that there is a higher risk of trampling of the features. However, the increase in visitors is expected to be marginal compared to the number of visitors that the site receives in a year. No LSE is expected.

Due to the distance to this site from the works, it has been identified that there would be no pathway from any of the other pressures to the features.

**Sefton Coast SAC**

Pressure	Qualifying feature or species (include sub-features and supporting habitats)	LSE?	Justification
Abrasion (e.g. recreational activity, vehicles)	Embryonic shifting dunes Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") Fixed coastal dunes with herbaceous vegetation ("grey dunes") Dunes with <i>Salix repens</i> ssp. <i>argentea</i> ( <i>Salicion arenariae</i> ) Humid dune slacks Atlantic decalcified fixed dunes ( <i>Calluno-Ulicetea</i> ) Petalwort <i>Petalophyllum ralfsii</i>	No	During operation, there may be a slight increase in visitors to the area from the cruise ships on day trips to the local area. This may mean that there is a higher risk of trampling of the sand dunes. However, the increase in visitors is expected to be marginal compared to the number of visitors that the site receives in a year. No LSE is expected.
Noise (e.g. land/water-based recreation, marine traffic)	Great crested newt <i>Triturus cristatus</i>	No	During operation, there may be a slight increase in visitors to the area from the cruise ships on day trips to the local area. This may mean that there is a higher risk of noise in the area. However, this increase is likely to be a marginal increase compared to the number of visitors the site receives in a year. No LSE is expected on the newts.

Due to the distance to this site from the works, it has been identified that there would be no pathway from any of the other pressures to the features.



## Part 2 – In-combination

The effects which are considered to have a pathway but have concluded no LSE will be considered in combination with other projects at this stage.

Pressures taken forward for in-combination LSE assessment are listed below. These pressures are entirely related to marine environments, therefore any nearby terrestrial projects are not included here as the pressures are not compatible with this assessment.

- Smothering – supporting habitats of bird species (cormorant and common tern).
- Siltation - supporting habitats of bird species (cormorant and common tern).
- Changes in turbidity - supporting habitats of bird species (cormorant and common tern).

As identified within the LSE assessment tables above, only Liverpool Bay SPA and Mersey Narrows and North Wirral Foreshore SPA were identified to have pressures with a pathway that did not cause an LSE alone. Therefore only these two sites are included in this LSE in-combination assessment.

Cormorant and common tern were identified as features which are in the vicinity of the proposed works. Therefore they are the only species which will be considered for the above pressures as no pathway has been identified.

<b>Name of N2K site: Liverpool Bay SPA and Mersey Narrows and North Wirral Foreshore SPA</b>		
<b>Name of plan or project</b>	<b>Type of plan or project with compatible pressures</b>	<b>Other plan or project taking place within or near an N2K site?</b>
Isle of Man Ferry Terminal Project MLA/2018/00536	Port construction and operation – pressures the same as the cruise terminal development but includes capital dredging	Yes – project is in the Liverpool Bay SPA and directly adjacent to the proposed Liverpool Cruise Terminal.
Twelve Quays Ro-Ro berth Birkenhead MLA/2018/00209	This project involves 27 piles, 24 marine and 3 land based. The three pressures listed above would be compatible with the Twelve Quays.	Yes, this project takes place in the Liverpool Bay SPA. It is approximately 800m directly across the water.

<b>In combination assessment</b>		
<b>Project name</b>	<b>Potential cumulative impact with Liverpool Cruise Terminal</b>	<b>Included in appropriate assessment?</b>
Isle of Man Ferry Terminal MLA/2018/00536	Smothering, siltation and changes in turbidity will be assessed here.	Not included. No LSE is identified for smothering, siltation and changes in turbidity through an in-

	<p>There will be up to 170 marine piles installed with the LCT project. The loM Ferry Terminal only proposes two marine piles and drilling one rock socket. They are proposing a capital dredge to remove 46,560m<sup>3</sup> of material, using a cutter suction dredger.</p> <p>These activities may increase suspended sediment in the water column which could increase smothering, siltation and changes in turbidity</p>	<p>combination assessment. There is likely to be a small increase in suspended sediments from the Isle of Man ferry terminal. Sediment disturbed by the dredger would be sucked away, as they are proposing to use a cutter suction dredger. They are proposing to dispose of the dredged material offshore and in the River Mersey Mid-River site. This is classed as a beneficial re-use site so would be unlikely to negatively impact the sediment regime in the river. The installation of a rock socket and two marine piles is not considered to cause any noticeable changes to suspended sediment. Combining this very small increase with any sedimentation changes from Liverpool Cruise Terminal is not considered to require further assessment.</p>
Twelve Quays ro-ro berth Birkenhead MLA/2018/00209	This project involves 27 piles, 24 marine and 3 land based. Smothering, siltation and changes in turbidity will be assessed here.	No. The Twelve Quays project is considered to be too far (800m) away from the proposed cruise terminal to have an in combination impact for smothering, siltation and changes in turbidity.

## Likely Significant Effect Conclusion

The MMO has decided to carry out an appropriate assessment (AA) because likely significant effects from the project alone could not be ruled out. No further likely significant effects were identified at this stage following an in-combination assessment.

The Sites and the Qualifying Features for which significant effects (whether 'alone' or 'in combination') are likely or cannot be ruled out are carried into the AA.

### Liverpool Bay SPA

The project location is directly in this site.

As this plan or project is likely to have significant effects (or may have significant effects) on some or all of the Qualifying Features of the European Site(s) 'alone', further Habitats Regulations assessment of the project 'alone' is required

The pressures and features taken forward to appropriate assessment are:

- Habitat loss – for subtidal sand and displacement related to loss of ecologically linked artificial structure impacting on cormorant
- Noise (above and under water) – for cormorant and common tern only

- Visual (Light disturbance) - for cormorant and common tern only
- Introduction of non-synthetic compounds – for all birds and supporting habitats
- Introduction of non-native species and translocation – for all birds and supporting habitats

Mersey Narrows and North Wirral Foreshore SPA and Ramsar

This site is approximately 800m away from proposed cruise terminal site, it is directly across the River Mersey. The pressures and features taken forward for appropriate assessment are:

- Noise (above and under water) - Common tern, Bar tailed godwit, Knot and waterbird assemblage – redshank, cormorant, grey plover, sanderling
- Vibration – common tern

**Name of MMO officer:** Melissa Gaskell-Burnup

**Job Title:** Marine Licensing Case Manager

**Date:** 20/02/2020

## Appropriate Assessment

Below is the MMO's assessment of those aspects of the project that it was not possible to rule out the likelihood of significant effects on the designated sites listed in table 3.

### Part 1 – Alone

Name of N2K site: Liverpool Bay SPA			
Pressure	Qualifying feature or species (include sub-features and supporting habitats)	Description of impact on feature	After mitigation, can you conclude no adverse effect on site integrity?
Habitat Loss Physical loss of supporting habitat - Removal of habitat feature (e.g. offshore development, capital dredging, „active dredging zones“)	Waterbird assemblage feature - Great cormorant Phalacrocorax carbo Subtidal sand	<p>The jetty which is proposed to be demolished is where cormorants rest. The applicant conducted wintering bird surveys during 2017/18 and recorded a peak count of 12 cormorants, which represents 1.6% of the Liverpool Bay SPA cormorant population. Appendix 13.2a Waterman (2019). By permanently removing the structures where cormorants rest, these birds could be displaced. However, Liverpool Bay SPA is extensive and there are numerous alternative structures for the cormorants to use in the area.</p> <p>There will be piling and construction on the river bed, indicating that this will remove a small amount of supporting habitat, the habitat has been considered as 'subtidal sand,' see Annex 2 for further consideration.</p> <p>Most of the area where the new piles are to be installed currently is the site of an existing timber jetty, where existing piles have also been driven into the river bed.</p>	<p><b>Yes.</b> Even though there are alternative areas for cormorants to rest on, the applicant has proposed to install a floating pontoon, prior to demolition of the existing jetty and construction of the terminal. This pontoon is proposed to be permanent and will provide an alternative resting place for cormorants. The terminal design also incorporates horizontal suspended deck braces in the new dock wall which may be suitable for the cormorants to rest/roost on when cruise ships are not in the terminal. The adaptive management plan sets out an agreed programme of monitoring the cormorant use of the pontoon, the suspended deck braces and mooring dolphins.</p> <p>The applicant also proposes that, in future, monitoring will be extended to cover the operational Liverpool Cruise Terminal, which will assess the extent to which cormorants are using features of the operational terminal (e.g. deck bracing, mooring dolphins etc). Ecology Adaptive Management plan (Cormorants), Waterman (2019)</p> <p>Even though there are other areas that the cormorants can use, any potential displacement is further mitigated by the installation of the pontoon</p>

		<p>There will be a maximum of <b>172</b> piles of different diameters. There will be 169 piles with a 0.965m diameter, 2 piles with a 2.85m diameter and 1 pile with a 2m diameter. The area lost from each type of pile is:</p> <p>0.965m diameter = 0.73m<sup>2</sup> per pile, therefore <b>123.37 m<sup>2</sup> for 169 piles.</b></p> <p>2.85m diameter = 6.38m<sup>2</sup> per pile, therefore 12.76 m<sup>2</sup> for 2 piles</p> <p>2.0m diameter (1 pile only)= 3.14 m<sup>2</sup></p> <p>= 123.37 + 12.76 + 3.14 = <b>139.27 m<sup>2</sup> lost from all piles</b></p> <p>= <b>0.013927</b> hectares lost, total SPA area of subtidal sand is 149,594.94 ha.</p> <p>= .9.31x10<sup>-6</sup>% of Liverpool Bay SPA subtidal sand habitat lost.</p>	<p>and the deck bracing. No adverse effect on site integrity can be concluded.</p> <p>The installation of the pontoon will be secured as a condition on any determined marine licence.</p> <p>Most of the area where the piles are to be installed currently contains piles from the existing jetty. These piles will be removed, and the new piles will be installed. However, this will not be a like for like replacement, there will be more piles installed for the new terminal building. From checking Magic, the habitat present is subtidal sand which is a supporting habitat for features of the Liverpool Bay SPA. It can be concluded that the development area is not of a high ecological function, due to existing activity (existing use of cruise ships and dredging activity). Considering this and the loss of subtidal sand area is of a very small scale considering the availability of subtidal sand across the SPA it can be concluded that there will be no adverse effect on site integrity.</p>
<p>Noise (e.g. boat activity, construction) – above water</p>	<p>Common tern – <i>Sterna hirundo</i> (breeding) Waterbird assemblage feature - Great cormorant <i>Phalacrocorax carbo</i></p>	<p>There could be LSE on the birds from overwater noise disturbance from both the construction and operational phase of this proposal. There will be a lengthy construction phase involving jetty demolition and piling. The demolition is estimated to take 5.5 months. The methodology to extract the old piles has not yet been</p>	<p><b>Yes</b>, no adverse effect on site integrity. In this case, the applicants have moved away from percussive piling and have submitted a method statement which states that the piles will be installed by a rotary bored piling methodology. This will help minimise noise disturbance. There will also be periods of no piling.</p>

		<p>confirmed but the applicant has stated that vibro-extraction would be the worst case.</p> <p>The noise levels primarily considered in this assessment would be those generated by the vibrohammer head on the crane. . A maximum predicted noise level was 88db at 10m from the source. (Chapter 13, ES Addendum October 2019.)</p> <p>The current standard acoustic data available for the use of such machinery relates to driving steel piles into substrate with a vibro-piling head into soft substrate, rather than to remove wooden piles from bottom substrate. These noise levels are being used as a worst case scenario approach to the assessment.</p> <p>The proposal also includes installing 172 marine piles and up to 24 landward piles. The marine piles are proposed to be installed by rotary auger drilling and have a noise level 10m from source of 83 db. (Chapter 13, ES Addendum October 2019.)</p> <p>The construction phase is estimated to include 9 months of marine piling, and 2.5 months of land-based piling. There is also 9.5 months of installation of pre cast units. These construction phases are expected to overlap.</p> <p>The applicant is proposing to carry out most works between 0700-1900, Mon– Sat. However, they are proposing to work outside these times but no piling will take place after 1900. These activities may have a significant impact on the birds in the SPA, depending on the time of year when the works are carried out. In the</p>	<p>The applicant has stated that they wish to pile for approximately 11 months, it will run into the sensitive overwintering season. A severe winter weather restriction has been proposed. Works should be timed to avoid periods of severe winter weather. Any high disturbance works (including piling) must be temporarily suspended if local temperatures (as recorded by nearest Met Office data and/or available site specific measurements) are below zero degrees centigrade for a period of 7 consecutive days, and remain suspended until temperatures reach above zero degrees centigrade for a period of 3 consecutive days. The relevant nature conservation bodies should be informed of when works are suspended and re-commenced. This has been included in the applicant’s CEMP (December 2019).</p> <p>The mitigation proposals will be secured on any determined marine licence as a condition.</p> <p>For the operational phase, cruise ships have been visiting the area since 2007 so birds are likely to be habituated to their presence. The increase in visiting ships will be marginal. In the sensitive overwintering period for some bird species, less ships will be arriving than in the summer. The development is also near to a city centre and working port, birds will be habituated to higher ambient noise levels.</p>
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		<p>information provided, the applicant proposes to demolish the jetty outside of the overwintering period. However, as there will be around 11 months of land and marine piling, this would run into the overwintering period.</p> <p>Cormorants have been identified as an assemblage species which are present in the vicinity of the works area.</p> <p>Foraging common terns have been identified in the works area.</p>	
<p>Under water noise (e.g.boat activity, construction)</p>	<p>Common tern – <i>Sterna hirundo</i> (breeding) Waterbird assemblage feature - Great cormorant <i>Phalacrocorax carbo</i> (impacts to their prey)</p>	<p>The jetty demolition is estimated to take 5.5 months. The methodology to extract the old piles has not yet been confirmed.</p> <p>The noise levels primarily considered in the applicant's assessment would be those generated by the vibropiling a 0.3 m steel diameter pile. A maximum predicted noise level for underwater noise was 171 dB re 1 µPa (Peak), 155 dB re 1 µPa (RMS) and 155 dB re 1 µPa<sup>2</sup>s (SEL). (Chapter 13, ES Addendum October 2019.)</p> <p>The current standard acoustic data available for the use of such machinery relates to driving steel piles into substrate with a vibro-piling head into soft substrate, rather than to remove wooden piles from bottom substrate. These noise levels are being used as a worst case scenario approach to the assessment.</p> <p>The development also includes installing 172 marine piles which are proposed to be installed by rotary auger drilling. The noise levels have been predicted to be 163.3 dB re 1 µPa at</p>	<p><b>Yes</b>, no adverse effect on site integrity. In this case, the applicants have moved away from percussive piling and have submitted a method statement which states that the piles will be installed by a rotary bored piling. This will help minimise noise disturbance. There will also be periods of no piling. Less underwater noise will mean that there is less impact on the birds' prey species.</p> <p>A severe winter weather restriction has been proposed. Works should be timed to avoid periods of severe winter weather. Any high disturbance works (including piling) must be temporarily suspended if local temperatures (as recorded by nearest Met Office data and/or available site specific measurements) are below zero degrees centigrade for a period of 7 consecutive days, and remain suspended until temperatures reach above zero degrees centigrade for a period of 3 consecutive days. The relevant nature conservation bodies should be informed of when works are suspended</p>

		<p>source. (Chapter 13, ES Addendum October 2019.)</p> <p>The construction phase is estimated to include 9 months of marine piling, and 2.5 months of land-based piling. There is also 9.5 months of installation of pre cast units. These construction phases are expected to overlap.</p> <p>The applicant is proposing to carry out most works between 0700-1900, Mon– Sat. However, they are proposing to work outside these time. No piling will take place after 1900. These activities may have a significant impact on the birds in the SPA, depending on the time of year when the works are carried out. In the information provided, the applicant proposes to demolish the jetty outside of the overwintering period. However, as there will be around 11 months of land and marine piling, this would run into the overwintering period.</p> <p>There could also be impacts to bird species' prey from underwater noise. Noise from piling and other construction activities may drive the prey away from the site.</p>	<p>and re-commenced. This has been included in the applicant's CEMP (December 2019).</p> <p>The mitigation proposals will be secured on any determined marine licence as a condition.</p> <p>For the operational phase, cruise ships have been visiting the area since 2007 so birds' prey in the watercolumn will be habituated to their presence. The increase in visiting ships will be marginal. In the sensitive overwintering period for some bird species, less ships will be arriving than in the summer.</p> <p>The development is also near to a city centre and working port, birds will be habituated to higher ambient noise levels.</p>
Visual – Light disturbance	Common tern – <i>Sterna hirundo</i> (breeding) Waterbird assemblage great cormorant <i>Phalacrocorax carbo</i> )	There could be disturbance to birds from artificial light sources from the demolition/construction phase or operational phase of the cruise terminal. Artificial lights would be used if any demolition/construction were to take place after dark. There will be lights from the cruise terminal building, quayside structures and the cruise liners themselves. They could disturb roosting and feeding birds depending how they are arranged.	<p><b>Yes</b>, it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed. The applicants are proposing 24hr working hours, 7 days a week.</p> <p>Directional lighting can be used during construction to ensure that light does not spill into the SPA and only illuminates the necessary areas. This would mitigate against AEol in the construction phase.</p> <p>The applicant has proposed a Light Strategy which has been designed to minimise light spillage from</p>



			<p>structures such as the terminal building and linkspan bridge. This would mitigate against any LSE during the operational phase of the project. There are already a fair amount of artificial lights on the quayside as it is at the edge of the city.</p> <p>By using the above mitigation, it is not considered that there will be an AEol on the protected features of this SPA. The mitigation proposals will be secured on any determined marine licence as a condition.</p>
<p>Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons)</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)  Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)  Little tern - <i>Sternula albifrons</i> (breeding)  Common tern – <i>Sterna hirundo</i> (breeding)  Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	<p>There is a risk of the introduction of non-synthetic compounds from potential fuel releases from construction plant and cruise liners. The significant effects from a spill would be dependent on the magnitude of a release.</p>	<p><b>Yes</b>, it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed.</p> <p>During the construction phase, use of pollution control best practice can be incorporated into the construction methodology of this proposal.</p> <p>Bunding should be used on containers of hazardous substances</p> <p>Oil spill clean-up kits should be available at all times.</p> <p>During the operational phase, pollution from cruise liners is considered to be a minimal risk given their codes of conduct and methods of operation.</p> <p>Due to the above mitigation and best practice strategies, it is not considered that there will be an AEol on the protected site and the mitigation measures proposed will be secured on any determined licence as a condition.</p>
<p>Introduction of non-native species and translocation</p>	<p>Red-throated diver – <i>Gavia stellata</i> (non-breeding)  Common Scoter – <i>melanitta nigra</i> (non-breeding)</p>	<p>There could be an introduction of non-native invasive species from cruise liner ballast water and from construction plant if it has not been correctly washed. The introduction of non-native species could have a negative impact on the prey for these bird species.</p>	<p><b>Yes</b>, it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed.</p> <p>A project-specific Biosecurity Risk Assessment has been produced 'LCT Biosecurity Risk Assessment', (Appendix 13.10a, ES addendum, October 2019).</p>

	<p>Little gull - <i>Hydrocoloeus minutus</i> (non-breeding)          Little tern - <i>Sternula albifrons</i> (breeding)          Common tern – <i>Sterna hirundo</i> (breeding)          Waterbird assemblage (Red-breasted merganser <i>Mergus serrator</i> and great cormorant <i>Phalacrocorax carbo</i>)</p>	<p>There are already records of the Chinese mitten crab in this area and the Starlet Sea Anemone. The mitten crabs are known to reproduce quickly and are considered highly invasive and are known to eat worms, small fish and small crustaceans. Their spread could mean a lack of food for the bird species.</p>	<p>which outlines numerous inherent mitigation design measures which would be incorporated into construction methods to limit the risk of introduction and the spread of existing INNS. These measures include inspecting construction vessels for INNS on arrival and controlled removal of biofouling.</p> <p>Best practice guidelines would be followed and a standard INNS protocol would be implemented by the contractor.</p> <p>For the operational phase, the risk of spread of INNS is not considered to be higher than it is now as there are already numerous cruise liners which berth in this area. The applicant has considered this in the Biosecurity Plan a risk approach that has considered vessels from different geographical locations. Measures include training staff to check for INNS and controlled removal of biofouling.</p> <p>Further measures can be reviewed in the 'LCT biosecurity risk assessment', (Appendix 13.10a, ES addendum, October 2019).</p> <p>Due to the above mitigation and best practice strategies, it is not considered that there will be an AEol on the protected site and the mitigation measures proposed will be secured on any determined licence as a condition.</p>
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<b>Name of N2K site: Mersey Narrows and North Wirral Foreshore SPA and Ramsar</b>			
<b>Pressure</b>	<b>Qualifying feature or species (include sub-features and supporting habitats)</b>	<b>Justification</b>	<b>After mitigation, can you conclude no adverse effect on site integrity?</b>
Noise – above water	Common tern, Bar tailed godwit, Knot and waterbird assemblage (redshank cormorant, grey plover, sanderling)	There could be adverse effect on site integrity on the birds from overwater noise disturbance from both the construction and operational phase of this proposal. There will be a lengthy construction phase involving jetty demolition and piling. These activities may have a significant	<b>Yes</b> , it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed, to use rotary drilling to install the piles. The existing jetty piles are proposed to be removed using vibro-extraction. As in the 'justification', the

		<p>impact on the birds in the SPA, depending on the time of year the works are carried out.</p> <p>This site is around 800m away from the construction site, however as the birds are mobile they may move closer and use the other side of the river. Therefore the justification for this pressure on Liverpool Bay SPA can be considered relevant.</p>	<p>conclusion from the Liverpool Bay SPA can be considered to be relevant, if the birds were to move closer to the works. For those birds which remain in the Mersey Narrows and North Wirral Foreshore SPA, the works are considered to be too far away from the noise to have an impact. The methodologies put forward for mitigation will be secured on any determined marine licence.</p>
Underwater noise changes	Common tern (breeding and non-breeding)	<p>There could also be impacts to common tern's prey from underwater noise. Common tern can feed in the vicinity of the works. Noise from piling and other construction activities may drive the prey away from the site.</p>	<p><b>Yes</b>, it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed. By using a less noisy piling technique than percussive piling, it can be concluded that there would be no adverse effect on the site. Underwater noise changes at approx. 800m from the site are unlikely to have an impact on the birds' prey. The methodologies put forward for mitigation will be secured on any determined marine licence.</p>
Vibration	Common tern (breeding and non-breeding)	<p>There could also be impacts to bird species' prey from vibration. Noise from piling and other construction activities may drive the prey away from the site.</p>	<p><b>Yes</b>, it can be concluded that there will be no adverse effect on site integrity due to the mitigation proposed. By switching from percussive piling, it can be concluded that the levels of vibration would be significantly reduce. There would be no adverse effect on the site. Vibration at approx. 800m from the site are unlikely to have an impact on the birds' prey. The methodologies put forward for mitigation will be secured on any determined marine licence.</p>

### In combination assessment – Appropriate Assessment

No pressures were carried through from the LSE in-combination assessment. No adverse effect on site integrity was identified following the AA on the project alone. The following residual effects from the project are now being considered for in combination adverse effects on integrity on the following sites and species:

#### Liverpool Bay SPA

- Habitat Loss – removal of artificial structure which forms resting place for *cormorant (assemblage feature)*
- Physical loss of supporting habitat - Removal of habitat feature (e.g. offshore development, capital dredging, „active dredging zones”) - *for Subtidal sand*
- Noise – under and over water (e.g. boat activity, construction) – *for common tern and cormorant (assemblage feature)*.
- Visual– Light disturbance *for common tern and cormorant (assemblage feature)*
- Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons) – *all birds*
- Introduction of non-native species and translocation - *all birds*

**Mersey Narrows and North Wirral Foreshore SPA**

- Noise – above water – for *Common tern, Bar tailed godwit, Knot and waterbird assemblage (redshank cormorant, grey plover, sanderling)*
- Underwater noise changes - *Common tern*
- Vibration - *Common tern (breeding and non-breeding)*

The first table lists the projects with compatible pressures. The subsequent tables assess each project with regard to Liverpool Bay SPA and Mersey Narrows SPA.

Name of N2K site: Liverpool Bay SPA		
Name of plan or project	Type of plan or project with compatible pressures	Other plan or project taking place within or near an N2K site?
Isle of Man Ferry Terminal Project (MLA/2018/00536)	Port construction and operation – pressures the same as the cruise terminal development but includes capital dredging.	Yes, the project is in the Liverpool Bay SPA and directly adjacent to the proposed Liverpool Cruise Terminal.
Liverpool Waters Masterplan	Redevelopment of up to 60ha of former dockland to create a mixed use development, including residential, commercial and public spaces. Compatible pressures include noise and light disturbance during the construction phases. There could also be future impacts if both schemes were built. These impacts could be from noise from increased visitors and increased light from the new	Yes, the Liverpool Waters Masterplan includes the cruise terminal and covers a large surrounding area of quayside to the north of the site and is adjacent to the Liverpool Bay SPA.

	buildings. Many of the planning applications listed below form part of this outline planning permission.	
Cruise Liner Hotel 19F/1038 Already permitted	Construction of new hotel next to the proposed cruise terminal. Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	Yes, the project is approximately 50m away from Liverpool Bay SPA.
Northern Link Road 17F/2628 Already permitted	New link road to provide access to the proposed relocation of the Isle of Man Ferry Terminal at West Waterloo Dock Waterloo Road Liverpool L3 OBH. Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 40 m away from the Liverpool Bay SPA.
The Lexington 17F/2056 Already permitted	35 storey residential tower comprising 325 apartments and 40 car parking spaces on plot A-04, Princes Dock. Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 170 m away from the Liverpool Bay SPA.
Plaza 1821 17F/0913 Already permitted	15 storey residential tower comprising 105 apartments, 2 ground floor commercial units and 26 car parking spaces on plot A-05, Princes Dock. Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 150 m away from the Liverpool Bay SPA.
Hive City Docks 17F/0456 Already permitted	31 storey residential development comprising 278 apartments and 27 car parking spaces on plot A-06, Princes Dock. Compatible pressures include noise and light from the construction phase, if built at the same time. For the	This is approximately 150 m away from the Liverpool Bay SPA.

	operational phase, there would be an increase in artificial light in this area.	
Plots C04-06 17F/1628 Already permitted	Erect part 14, part 8 storey residential block with 237 residential units, commercial space on ground floor with parking, access and works at land west of Waterloo Road.  Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 130 m away from the Liverpool Bay SPA.
Plot C02 18F/3247 Application in progress	Development of 646 apartments and 232 sq.m. of ground floor commercial space with single storey concierge pavilion building, partial dock infill, two floating timber jetties and dockside walkway. Plot C02 Liverpool Waters Central Docks Liverpool L3 OBT  Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 60 m away from the Liverpool Bay SPA.
Plot A03 18RM/1554 Already permitted	Reserved matters for plot A-03 (6 storey office development) Vacant land north of the existing multi-storey car park, Plot A-03, Princess Dock, Liverpool L3 1ED.  Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	This is approximately 150 m away from the Liverpool Bay SPA.
District Heating Network 19F/0079 Already permitted	District Heating Network consisting of a Central Docks Neighbourhood Energy Centre and a below-ground pipe network servicing Central Docks South (Liverpool Waters Neighbourhood C). Central Docks Land to the west of Waterloo Road Liverpool.  Compatible pressures include noise and light from the construction phase, if built at the same time. For the operational phase, there would be an increase in artificial light in this area.	It is unclear where the pipes will go exactly as they will service many buildings, but there are buildings in the C neighbourhood which are approximately 60m away from the Liverpool Bay SPA.

<p>South Link Road from Bath Street to Leeds Street Liverpool (18F/1419) Already permitted</p>	<p>Planning application approved to create a small section of dual carriageway and upgrade a roundabout. This will involve the demolition of five buildings. Compatible pressures would include construction noise disturbance.</p>	<p>Yes, the proposal is approximately 180m away from the cruise terminal location and Liverpool Bay SPA.</p>
<p>Everton Football Stadium MLA/2020/00109 Application in progress</p>	<p>Construction of new football stadium. Construction phases unlikely to overlap, however if both are operational there will be an increase of noise on the quayside area. The football stadium could bring around 60,000 people and there could be around 3,500 + cruise passengers in the area.</p>	<p>Yes, adjacent to the Liverpool Bay SPA. It is approximately 1.5km north of the cruise terminal site.</p>
<p>Twelve Quays Ro-Ro berth Birkenhead (MLA/2018/00209)</p>	<p>Port maintenance and construction scheme. The pressures from this are similar to those of the cruise terminal. There will be marine piling and general construction.</p>	<p>Yes, this project takes place in the Liverpool Bay SPA. It is approximately 800m directly across the water.</p>
<p>Outline permission OUT/09/06509 (Wirral Waters Scheme)</p>	<p>Demolition of existing buildings and the creation of a new city neighbourhood at East Float, including a series of new urban quarters (Northbank West, Marina View &amp; Four Bridges, Vittoria Studios and SkyCity &amp; The Point), consisting of a maximum of 13,521 residential units, a maximum of 422,757sq m office and research and development floorspace , a maximum of 60,000sq m retail uses, a maximum of 38,000sq m hotel and conference facilities, a maximum of 100,000 sq m of culture, education, leisure, community and amenity floorspace, together with the provision of car and cycle parking, structural landscaping, formation of public spaces and associated infrastructure and public realm works and including retention of and conversion works to Grade II Listed Hydraulic Tower. Cleared Site Adjacent East Float Quay, Dock Road, Seacombe</p>	<p>The closest part of this scheme is approximately 500m away from the Liverpool Bay SPA.</p>

	Compatible pressures could be disturbance to SPA birds during construction from noise and visual pressures.	
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<b>Name of N2K site: Mersey Narrows and North Wirral Foreshore SPA</b>		
<b>Name of plan or project</b>	<b>Type of plan or project with compatible pressures</b>	<b>Other plan or project taking place within or near an N2K site?</b>
Twelve Quays Ro-Ro berth Birkenhead MLA/2018/00209	This project involves 27 piles, 24 marine and 3 land based. If the piling were to take place at the same time as the LCT piling with no mitigation, there may be a large amount of noise disturbance in the estuary.	This scheme is adjacent to the Mersey Narrows and North Wirral Foreshore SPA.
ITC OUT/11/00645	Outline planning application with all matters reserved for the demolition of existing buildings and the construction of Two buildings providing an overall maximum of 111,780 sq m of floor space to be used as an International Trade Centre. Land to north of Beaufort Road, and to the East of Wallasey Bridge Road, West Float Birkenhead.  There could be noise disturbance to the SPA birds from the construction phase of the projects.	Yes, this outline scheme is directly next to the Mersey Narrows SPA.
Legacy - DLS/18/00715	Reserved Matters Application 536 apartments, associated parking, landscaping and other associated works at Northbank West, Dock Road.	This is approximately 1.5km away from the Mersey Narrows SPA.
1 Tower Road APP/18/00409	Full planning application for the construction of a three storey B1 office building, with car parking, landscaping and other associated works East Float, Birkenhead, CH41 1FN There could be noise disturbance to the SPA birds from the construction phase of the projects.	This is approximately 1km away from the Mersey Narrows SPA.
Belong APP/18/00470	Erection of a specialist care village comprising 72 care spaces incorporated into 6 household clusters, 34 apartments & 3 guest bedrooms, associated car parking and landscaping on land off Dock Road, Birkenhead. Land at Northbank, Dock Road There could be noise disturbance to the SPA birds from the construction phase of the projects.	This is approximately 1.4km away from the Mersey Narrows SPA.



Vittoria Studios DLS/18/00717	Reserved matters for office space etc. North of Corporation Road, Seacombe, Wirral, CH41 1HB. There could be noise disturbance to the SPA birds from the construction phase of the projects.	This is approximately 1.2km away from the Mersey Narrows SPA.
Egerton Village APP/18/00647	Erect 4 retail units, restaurant, visitor centre managed workspace & flexible floorspace to be occupied as either an art gallery, educational use or managed workspace, village square, improvements to public open space. Tower Road, Birkenhead, CH41 1FN There could be noise disturbance to the SPA birds from the construction phase of the projects.	This is approximately 1km away from the Mersey Narrows SPA.

<b>In combination assessment – Liverpool Bay SPA</b>		
<b>Project name</b>	<b>Potential cumulative impact with Liverpool Cruise Terminal</b>	<b>After mitigation, can you conclude no adverse effect on site integrity?</b>
Isle of Man Ferry Terminal (MLA/2018/00536)	The Isle of Man Ferry Terminal is only piling two marine piles and drilling one rock socket, any period of overlap would be brief. As such, the potential cumulative effects associated with underwater noise and vibration would be, at worst, temporary, intermittent, local and of minor adverse significance. However, there will be around 80 piles driven into the bedrock for the terminal building, these are land based. There is also a disturbance of cormorants, an assemblage feature.	<b>Yes.</b> There may be a large amount of noise if the IoM's 80 land based piles and LCT's piling takes place at the same time. It may disturb the bird features and the majority is most likely going to have to take place outside of the overwintering bird season.  There is mitigation proposed to install floating pontoons to create extra roosting areas for the cormorants..  If the works are stopped during periods of adverse winter weather and the floating pontoons are installed, no adverse effect on site integrity is concluded.
Cruise Liner Hotel 19F/1038 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects.  The mitigation for cormorants for the cruise terminal includes placing floating pontoons in Princes dock.	<b>Yes.</b> The development has conditions attached which are compatible with those from the proposed cruise terminal, for example noise reduction conditions such as 'The rating level of the noise emitted from any plant shall not exceed the existing background noise level.'

		Therefore, no adverse effect on site integrity is concluded.
Northern Link Road 17F/2628 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as there is a residential building directly next to the proposed site.  MMO will condition this proposal such that it does not interact with those already consented. Therefore, no adverse effect on site integrity is concluded.
The Lexington 17F/2056 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as there is a residential building directly next to the proposed site. MMO will condition this proposal such that it does not interact with those already consented. Therefore, no adverse effect on site integrity is concluded.
Plaza 1821 17F/0913 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as there is a residential building directly next to the proposed site. MMO will condition this proposal such that it does not interact with those already consented. Therefore, no adverse effect on site integrity is concluded.
Hive City Docks 17F/0456 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies as there is a residential building near this site.

		MMO will condition this proposal such that it does not interact with those already consented. Therefore, no adverse effect on site integrity is concluded.
Plots C04-06 17F/1628 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies given that there is a residential building near to this site. MMO will condition this proposal such that it does not interact with those already consented. Therefore, no adverse effect on site integrity is concluded.
Plot C02 18F/3247 Application in progress	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously. This involves some infill of West Waterloo Dock, where some cormorant mitigation rafts are due to be placed.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as there is a residential building near to the proposed site.  There may be some impact on the cormorant mitigation strategy for this area, if the dock is filled in. MMO will check the progress of this application to ensure that any mitigation proposed is compatible with the cruise terminal proposal.
Plot A03 18RM/1554 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as there is a residential building directly next to the proposed site.
District Heating Network 19F/0079 Already permitted	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> This project involves installing a central heating network for a number of buildings. It would be expected that there will be standard mitigation conditions on the planning permission which would include using less noisy construction methodologies and downtime as

		<p>there is a residential building directly next to the proposed site. MMO will check the progress of this application to ensure that any mitigation proposed is compatible with the cruise terminal proposal.</p>
Liverpool Waters Masterplan	<p>The majority of the works for this project are to the north of the terminal and many parts of this scheme have not had planning permission submitted. Cumulative effects would include noise and light disturbance during the construction phase. There could also be future impacts if both schemes were built. These impacts could be from noise from increased visitors and increased light from the new buildings. There is also a loss of area for cormorants, an assemblage feature.</p>	<p><b>Yes.</b> From the construction phases of these projects, there may be a cumulative impact on the features of the SPA as the works are potentially very extensive. Impacts could be from noise, light and loss of areas for birds. However, by securing mitigation in the form of less noisy construction techniques and floating pontoons, no adverse effect on site integrity is predicted.</p>
South Link Road from Bath Street to Leeds Street Liverpool 18F/1419 Already permitted	<p>Potential impacts would include noise disturbance during construction phases of both projects. There will be five buildings demolished to make way for the road.</p>	<p><b>Yes.</b> The applicants for the cruise terminal will be minimising noise by using different construction techniques. Mitigation conditions are attached to the licence and include measures to control noise and to avoid harm to breeding birds. The buildings for demolition are set back from the river banks and the borders of the SPA. Birds which are displaced from the cruise terminal area during the construction phase are more likely to move to other areas along the Mersey rather than inland, towards the road development.  No adverse effect on site integrity is concluded.</p>
Everton football stadium MLA/2020/00109 Application in progress	<p>A marine licence application has been submitted for this but not determined. It is not likely that the two projects will be built at the same time. Operational impacts could include noise disturbance when the stadium is in use. There could be 60,000 seats in the stadium and there could be a large amount of noise and light pollution from this.</p>	<p><b>Yes.</b> The noise disturbance from the operational stadium is unlikely to have an in-combination effect with the cruise terminal. Football matches are likely to be once-twice a week between August-April/May. There may be some overlap when the cruise ships visit and football games are on, however, any impacts from passing vessels are likely to be small as there are already many vessels which pass through here. The passengers from the cruise ships will disperse</p>

		throughout the city and further afield. There should be little added noise from cruise passengers.  No adverse effect on site integrity is concluded.
Twelve Quays Ro-Ro berth Birkenhead (MLA/2018/00209)	This project involves 27 piles, 24 marine and 3 land based. If the piling were to take place at the same time as the LCT piling with no mitigation, there may be a large amount of noise disturbance in the estuary.	<b>Yes.</b> The Twelve Quays marine licence has a condition to use soft start piling, this will allow the birds in the SPA to move away from the site. The SPA is large so there will be other areas in the site that the birds can move to. The piling from the cruise terminal is approximately 800m away and they are using rotary drilling. It has been noted in the LSE that there may be impacts to the birds' prey from underwater noise. However as both projects are 800m apart, there will be areas in the estuary which will not be affected by underwater noise.  No adverse effect on site integrity is concluded.
Wirral waters scheme	Compatible pressures with the cruise terminal would include any noise and artificial lights from construction. Some construction of this scheme has already started and it is thought that the remaining elements will be staggered over the next few years. As the majority of the construction is more than 1.5km from the cruise terminal, it is not thought that there would be an adverse impact on site integrity.  As a fair amount of the proposal is outside of the SPA, 500m (inland) away, it is not thought that there would be any in combination effects during the operational phase. There wouldn't be any lighting directed into the SPA as this proposal seems to be around an area of dockland which is further inland.	<b>Yes.</b> The closest part of the Wirral waters scheme is 1.3km away from the proposed cruise terminal. Considering that the council are using methods to reduce their noise levels during construction, it is not thought that there would be an in combination impact from the construction of the terminal and the Wirral Waters scheme.  No adverse effect on site integrity is concluded.

<b>Name of N2K site: Mersey Narrows SPA and North Wirral Foreshore SPA</b>		
<b>Project name</b>	<b>Potential cumulative impact with Liverpool Cruise Terminal</b>	<b>After mitigation, can you conclude no adverse effect on site integrity?</b>
Twelve Quays Ro-Ro berth Birkenhead (MLA/2018/00209)	This project involves 27 piles, 24 marine and 3 land based. If the piling were to take place at the same time	<b>Yes.</b> The Twelve Quays marine licence has a condition to use soft start piling, this will allow the birds in the SPA

	as the LCT piling with no mitigation, there may be a large amount of noise disturbance in the estuary.	to move away from the site. The SPA is large, therefore there will be other areas in the site that the birds can move to. The piling from the cruise terminal is approximately 800m away from Twelve Quays and the cruise terminal applicants propose to use rotary drilling. It has been noted in the LSE that there may be impacts to the birds' prey from underwater noise. However as both projects are 800m apart, there will be areas in the estuary which will not be affected by underwater noise. No adverse effect on site integrity is concluded.
ITC OUT/11/00645	Potential impacts would include noise disturbance during demolition and construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in the outline planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.
Legacy - DLS/18/00715	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in this planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.
1 Tower Road APP/18/00409	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in this planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.

Belong APP/18/00470	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in this planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.
Vittoria Studios DLS/18/00717	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in this planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.
Egerton Village APP/18/00647	Potential impacts would include noise disturbance during construction phases of both projects, if both were to take place simultaneously.	<b>Yes.</b> The cruise terminal is proposing to use rotary drilling techniques to reduce noise impact. The proposed cruise terminal is also over 800m away from the Mersey Narrows and North Wirral Foreshore SPA and the works in this planning permission are around 500m away from the SPA. Because of the mitigation and distance to the site it can be concluded that there will be no adverse effect on site integrity.

## Appropriate Assessment Conclusion

This is a record of the appropriate assessment required by regulation 63 of The Conservation of Habitats and Species Regulations 2017 and undertaken by the Marine Management Organisation in respect of the proposed project outlined in table 1.

The LSE alone assessment concluded that the proposed project would be likely to have a significant effect on the following N2K site:

- Liverpool Bay SPA – for all species and supporting habitats
- Mersey Narrows and North Wirral Foreshore SPA and Ramsar – for common tern, bar tailed godwit, knot and waterbird assemblage – redshank, cormorant, grey plover, sanderling

An alone and in combination appropriate assessment has been undertaken of the implications of the proposal in consideration of the applicable conservation objectives.

It can be ascertained that this plan or project will not have an adverse effect on the integrity of the following site(s), either alone or in combination with other plans and projects:

- Liverpool Bay SPA
- Mersey Narrows and North Wirral Foreshore SPA and Ramsar

This conclusion is dependent on mitigation measures being secured in the project methodology and on any determined marine licence.

- The use of rotary drilling to install piles
- No piling or noisy activities between 1900-0700
- The installation of floating pontoons for birds to rest on
- The incorporation of structures for birds to rest on in the terminal design
- Severe winter weather working restriction
- Lighting strategy
- Biosecurity management plan

Natural England was consulted on the appropriate assessment and gave final advice on 6 March 2020, to which the MMO has had regard. The conclusions of this appropriate assessment are in accordance with the advice and recommendations of Natural England.

Natural England was consulted again on updated the appropriate assessment (addendum) on 9 October 2020 and NE gave final advice on 14 October 2020 to which MMO had had regard. The conclusions of this appropriate assessment are in accordance with the advice and recommendations of Natural England.

**Name of MMO officer:** Daniel Jose

**Job Title:** Marine Licensing Case Officer

**Date:** October 2020

## References



Liverpool Cruise Terminal ES Addendum (Fourth Issue) October 2019

Waterman., (2019). *Liverpool Cruise Terminal ES Addendum (Fourth Issue) October 2019*- Manchester: [Viewed 20 Feb 2020]. Available from:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/797015/Liverpool\\_Cruise\\_Terminal\\_ES\\_Addendum\\_Third\\_issue\\_Mar\\_2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/797015/Liverpool_Cruise_Terminal_ES_Addendum_Third_issue_Mar_2019.pdf)

### **Secondary references from conservation advice packages:**

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Van Kruchten, T. and van der Hammen, Y. 2011 Case Study Sandwich Terns – a probabilistic analysis of the ecological effects of dredging: IMARES - Institute for Marine Resources & Ecosystem Studies. [<http://edepot.wur.nl/169542b>]

## **Annex 1**

Full location information (including site coordinates) is available on the MMO's Public Register. A map detailing the proposed project site(s) is below.



Figure 1 Site Location

## Annex 2

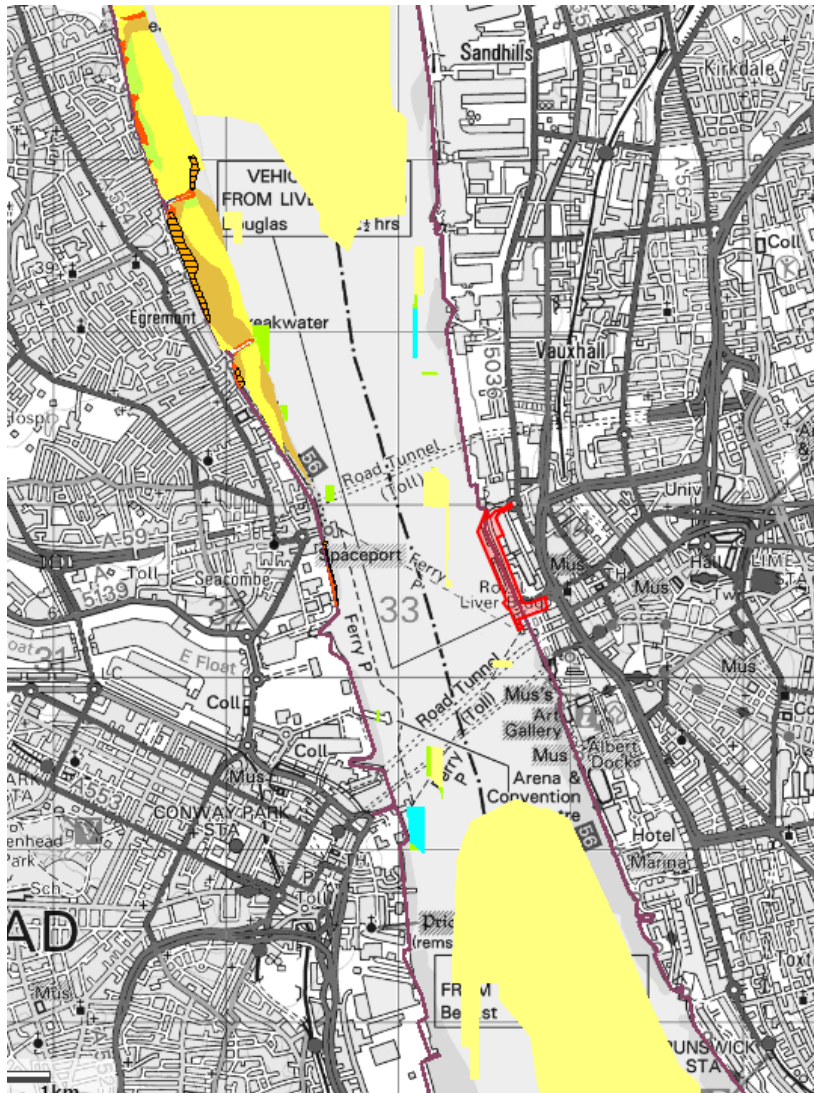


Figure 2 Marine Protected Area Habitats Locations

In figure 2, the 'Marine Protected Area Features' layer on Magic Maps has been selected, with all options turned on. In the immediate vicinity of the works, there are no designated features. However, there are areas of yellow polygons close by. These areas are designated as:

- SPA Subtidal sand
- Ramsar Subtidal sand

There are also blue and green polygons nearby, these are:

- SPA reefs
- Ramsar reefs

There is an abundance of the 'Subtidal sand' habitat in the estuary. There is no designated habitat in the area where the piling is to take place. However given the proximity of the yellow polygons to the proposed works, for the purposes of this assessment it has been concluded that there may be 'subtidal sand' in the area where piling is to take place.

## Addendum

Due to recent changes to a nearby proposal following final advice from Natural England on this HRA, but before formal determination, this addendum has been created to assess the potential in-combination effects of the two projects together as required by regulation 63 of the Conservation of Species and Habitats Regulations 2017.

<b>Name of N2K site: Liverpool Bay SPA</b>		
<b>Name of plan or project</b>	<b>Type of plan or project with compatible pressures</b>	<b>Other plan or project taking place within or near an N2K site?</b>
Isle of Man Ferry Terminal Project (MLA/2018/00536)	This project has been previously consented, but a variation has been submitted to add an additional 400 marine piles. All impacts previously assessed will not be reassessed, only impacts caused by the increase of 400 marine piles will be considered. These piles have compatible pressures of above water noise, under water noise, and vibration.	Yes, the project is in the Liverpool Bay SPA and directly adjacent to (approx 300 - 500m) the proposed Liverpool Cruise Terminal.

<b>Name of N2K site: Mersey Narrows and North Wirral Foreshore SPA and Ramsar</b>		
<b>Name of plan or project</b>	<b>Type of plan or project with compatible pressures</b>	<b>Other plan or project taking place within or near an N2K site?</b>
Isle of Man Ferry Terminal Project (MLA/2018/00536)	This project has been previously consented, but a variation has been submitted to add an additional 400 marine piles. All impacts previously assessed will not be reassessed, only impacts caused by the increase of 400 marine piles will be considered. These piles have compatible pressures of above water noise, under water noise, and vibration.	The project is located on the other side of the estuary from the site, approximately 750m East of the SPA

<b>In combination assessment – Liverpool Bay SPA</b>		
<b>Project name</b>	<b>Potential cumulative impact with Liverpool Cruise Terminal</b>	<b>After mitigation, can you conclude no adverse effect on site integrity?</b>
Isle of Man (IOM) Ferry Terminal (MLA/2018/00536)	The addition of 400 marine piles to the IOM project represents a significant increase in potential noise, both under water and over water from what was initially	Yes

	<p>licensed. However the IOM project proposes to use vibrational piling in the first instance, thus reducing the potential noise levels. Percussive piling will only be used in instances where a pile cannot be driven any further, therefore these events should be by exception.</p> <p>In relation to under water noise, the IOM works are to be carried out in a dock which is separated from the River Mersey by dock walls and a solid dock gate. It is not expected that noise from the additional piling will have an in-combination under water noise impact as the works are taking place inside the dock.</p> <p>In relation to above water noise, noise contour maps have been provided which display the expected noise levels relative to the proposed cormorant pontoon. The map shows that the expected noise level at the pontoon during simultaneous works (during the use of vibropiling by the IOM project) is below 70 decibels – the assumed threshold for disturbance to cormorants. However as displayed on the noise contour maps the percussive piling method will create noise at levels which will disturb cormorants. However for a number of reasons it can be concluded that this does not represent an adverse impact on site integrity.</p> <p>Primarily, the installation of the cormorant pontoon is a permanent feature providing for resting space for cormorants, while the construction activities of both projects are only temporary. As mentioned above percussive piling will only be used as a last resort by the Isle of Man, meaning that impacts will also be temporary in the context of the construction process and the cormorants will still be able to benefit from the platform for the remaining construction time as well as post construction.</p> <p>Second, the designated sites (including the Liverpool Bay SPA, Mersey Narrows and North Wirral Foreshore</p>	<p>It has been concluded that no additional mitigation measures will be required for the Liverpool Cruise Terminal project as the activities in their current form do not represent an adverse effect on site integrity.</p> <p>With the cold weather restriction mitigation measure (secured as a condition) in place impacts to waterbird assemblages while they are at their most vulnerable are minimised to a level which would not cause an adverse impact on site integrity. Common tern are also known to use a range of areas across the SPA and disturbance in one area should not result in the inability to nest or forage such that there is an adverse effect on site integrity.</p>
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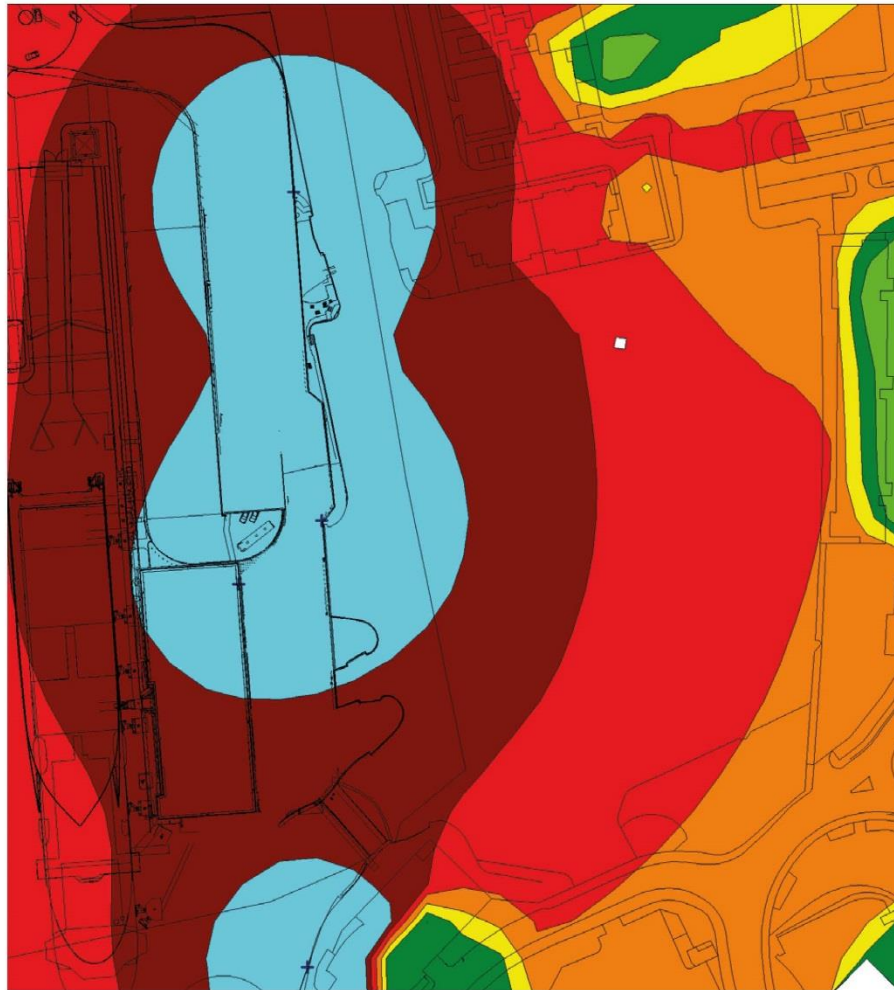
	<p>SPA and Ramsar) for which cormorant are a qualifying feature cover an extensive range (Liverpool Bay - It covers an area of c. 2,528 km<sup>2</sup> and Mersey Narrows and North Wirral foreshore SPA area: 2078.36 hectares). This means that during any worst case scenario, this is a very localised, temporary disturbance event in what is already a busy developed port area and there is a range of other resting sites for the birds to use within the sites or associated functionally linked habitat.</p> <p>Finally the Liverpool Cruise Terminal project does not contribute towards a cumulative effect which could impact the cormorant platform, as shown by noise contour map 3. Liverpool Cruise terminal will employ rotary drilling with noise impacts not adding in combination to the effects alone from IOM project (see fig 5 below).</p> <p>Common tern also have the potential to be impacted to changes in noise levels, however given the chosen methods of piling for both projects (vibrational and rotary) noise impacts will be localised. Despite the potential for local impacts to the species there are many other known nesting and foraging sites for common tern within the SPA. Given the availability of foraging and nesting areas, as well as the proposed mitigation (piling methods) there is not expected to be any adverse effect on site integrity.</p>	
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<b>Name of N2K site: Mersey Narrows and North Wirral Foreshore SPA and Ramsar</b>		
<b>Project name</b>	<b>Potential cumulative impact with Liverpool Cruise Terminal</b>	<b>After mitigation, can you conclude no adverse effect on site integrity?</b>
Isle of Man Ferry Terminal (MLA/2018/00536)	The addition of 400 marine piles to the represents a significant increase in potential noise, both under water and over water. However the ferry terminal propose to use vibrational piling in the first instance, thus reducing the potential noise levels. Percussive piling will only be used in instances where a pile cannot be driven any	<p><b>Yes</b></p> <p>It has been concluded that no additional mitigation measures will be required for the Liverpool Cruise Terminal Project as the activities in their current form do not represent an adverse effect on site integrity.</p>

	<p>further, therefore these events should only occur by exception.</p> <p>In relation to under water noise, the works are to be carried out in a dock which is separated from the River Mersey by dock walls and a solid dock gate. It is not expected that noise from the additional piling will have an in-combination under water noise impact as the works are taking place inside the dock.</p> <p>However as displayed on the noise contour maps the percussive piling method will create noise at levels which will disturb any cormorants which may use the area if they come over from resting sites in the Mersey Narrows and North Wirral Foreshore SPA and Ramsar.</p> <p>In relation to above water noise, noise contour maps have been provided which display the expected noise levels relative to the proposed cormorant pontoon. The map shows that the expected noise level at the pontoon during simultaneous works (during the use of vibropiling for the Isle of Man project) is below 70 decibels – the assumed threshold for disturbance to cormorants. However for a number of reasons it can be concluded that this does not represent an adverse impact on site integrity.</p> <p>Primarily, the installation of the cormorant pontoon is a permanent feature, while the construction activities of both projects are only temporary. As mentioned above percussive piling will only be used as a last resort meaning that impacts will also be temporary in the context of the construction process and the cormorants will still be able to benefit from the platform for the remaining construction time as well as post construction.</p> <p>Second, the designated sites (including the Liverpool Bay SPA, Mersey Narrows and North Wirral Foreshore</p>	<p>With the cold weather restriction mitigation measure (secured as a condition) in place impacts to waterbird assemblages while they are at their most vulnerable are minimised to a level which would not cause an adverse impact on site integrity. Common tern are also known to use a range of areas across the SPA and disturbance in one area should not result in the inability to nest or forage such that there is an adverse effect on site integrity.</p>
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	<p>SPA and Ramsar) for which cormorant are a qualifying feature cover an extensive range (Liverpool Bay - It covers an area of c. 2,528 km<sup>2</sup> and Mersey Narrows and North Wirral foreshore SPA area: 2078.36 hectares). This means that during any worst case scenario, this is a very localised, temporary disturbance event in what is already a busy developed port area and there is a range of other resting sites for the birds to use within the sites or associated functionally linked habitat.</p> <p>Finally the Liverpool Cruise Terminal project does not contribute towards a cumulative effect which could impact the cormorant platform, as shown by noise contour map 3. Liverpool Cruise terminal will employ rotary drilling with noise impacts not adding in combination to the effects alone from IOM project (see fig 5 below).</p> <p>Common tern and waterbird assemblages also have the potential to be impacted to changes in noise levels, however given the chosen methods of piling for both projects (vibrational and rotary) noise impacts will be localised. Despite the potential for local impacts to the species there are many other known nesting and foraging sites for common tern within the area. Given the availability of foraging and nesting areas, as well as the proposed mitigation (piling methods) there is not expected to be any adverse effect on site integrity.</p> <p>Finally, as the site is approximately 750m from the works the most significant impacts on the birds in the site boundary will have diminished in intensity, further reducing the potential for an adverse effect on site integrity.</p>	
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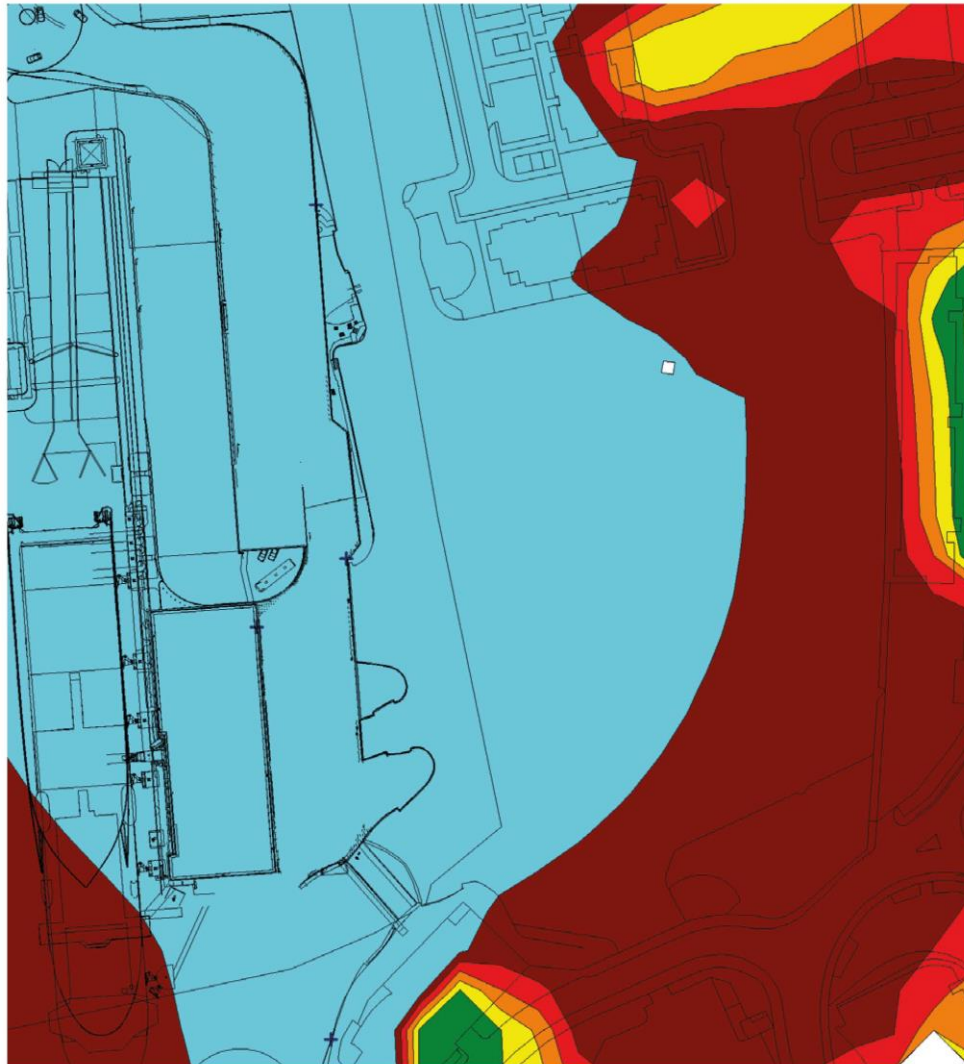
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Project Details | WIE13897-102: Isle of Man Ferry Terminal  
 Figure Title | Figure 4: Noise Contour Plot Cormorant Pontoon – Sheet Piling (Telescopic Leader Rig) Dock Infill + IoM Terminal Building (BG28) + LCT Piling  
 Figure Ref | WIE13897-102\_GR\_AC\_4A  
 Date | 2020  
 File Location | W:\mcs\water\project\WIE13897\102\gr\ac\issued\figures  
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Figure 3: Copy of noise contour map relative to the cormorant pontoon (white square) for MLA/2018/00536 vibro-piling works and Liverpool Cruise Terminal rotary drilling works.



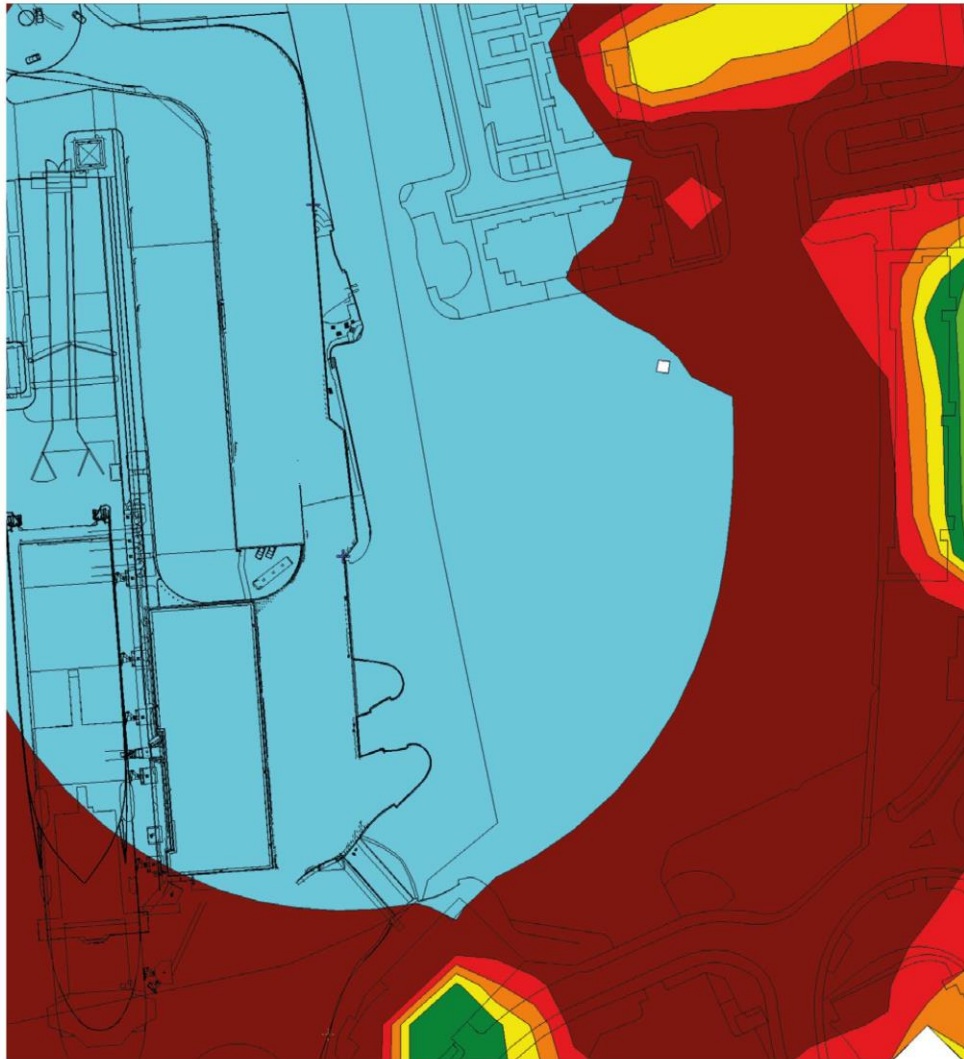
- <=50 dB LAeq,T
- >50 dB LAeq,T
- >55 dB LAeq,T
- >60 dB LAeq,T
- >65 dB LAeq,T
- >70 dB LAeq,T
- >75 dB LAeq,T



Project Details | WIE13897-102: Isle of Man Ferry Terminal  
 Figure Title | Figure 5: Noise Contour Plot Cormorant Pontoon – Sheet Piling (SL30) Dock Infill + IoM Terminal Building (BG28) + LCT Piling  
 Figure Ref | WIE13897-102\_GR\_AC\_5A  
 Date | 2020  
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Figure 4: Copy of worst-case scenario (IoM percussive piling and Liverpool Cruise Terminal rotary drilling)



- <=50 dB LAeq,T
- >50 dB LAeq,T
- >55 dB LAeq,T
- >60 dB LAeq,T
- >65 dB LAeq,T
- >70 dB LAeq,T
- >75 dB LAeq,T



Project Details WIE13897-102: Isle of Man Ferry Terminal

Figure Title Figure 2: Noise Contour Plot Cormorant Pontoon – Sheet Piling (SL30) Dock Infill

Figure Ref WIE13897-102\_GR\_AC\_2A

Date 2020

File Location W:\Incs\wief\project\wief\13897\102\graph\hatched\issued figures

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Figure 5: Noise contour map of percussive piling from IoM without any LCC piling taking place