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Proposed Redevelopment of Dundee East

Habitats Regulations Appraisal Screening for Likely Significant Effects

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	Name	**Position**	**Date**
Originated	Steven Betts	Partner	23 September 2019
Reviewed	Dr Roger Buisson	Director	26 September 2019
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Contents

1 Introduction

Overview

1.1 The applicant (Port of Dundee Ltd) is submitting an EIA and HRA Screening Request to Dundee City Council and Marine Scotland for a proposed Offshore Wind Assembly, Storage and Decommissioning Area, along with various quayside works which include the proposed construction of a Ro-Ro facility, new quay and dredging at the Port of Dundee as shown on Drawing Number 130143/8003. The central Ordnance Survey grid reference for the Site is NO43493085. A location plan is provided in Section 7 (Figure 1).

1.2 Further to correspondence in July 2019 between Ian Kerr (Port of Dundee), David Gray (Dundee City Council) and Anni Mäkelä (Marine Scotland), it was agreed that a single Screening Request would be submitted to Dundee City Council and Marine Scotland to cover the entire project, covering elements that are both above and below Mean High Water Springs (MHWS). This Screening Request, therefore, covers the entire project and an identical copy of this Screening Request has also been submitted to Anni Mäkelä at Marine Scotland.

1.3 BSG Ecology was appointed by Fairhurst on 16 September 2019 to undertake a Habitats Regulations Appraisal (HRA) 'screening assessment for likely significant effects' for the proposed development. The results of the screening assessment are presented in this Screening Report, the purpose of which is to determine the requirement and scope for an Appropriate Assessment.

1.4 There are a number of European sites within 10 km of the Site (see Section 3 for information on the extent of the study area). These are:

- Firth of Tay and Eden Estuary SAC (the proposed development extends into the SAC);
- Firth of Tay and Eden Estuary SPA (2.9 km east);
- Firth of Tay and Eden Estuary Ramsar (2.9 km east);
- Outer Firth of Forth and St Andrews Bay Complex proposed SPA (adjacent to part of the Site).

1.5 In addition to the above sites the assessment has also considered impacts on highly mobile qualifying features (species) that may use the Firth of Tay adjacent to the Site. For this reason the following additional sites have been included in the assessment:

- River Tay SAC (due to the presence of migratory fish species);
- Moray Firth SAC (due to the presence of bottlenose dolphin in the Firth of Tay, which may be linked to the Moray Firth population).

1.6 The locations of the European sites are shown on Figure 2 in Section 7.

1.7 This document presents the results of a shadow Habitat Regulations Appraisal[1] screening assessment, which will provide information to assist Dundee City Council and Marine Scotland to discharge their duties as the 'competent authority' as defined under Regulation 48(1) of the Conservation (Natural Habitats, &c.) Regulations 1994 (hereafter referred to as the 'Habitats Regulations').

[1] Under the Conservation (Natural Habitats, &c.) Regulations 1994 the 'competent authority' is responsible for completing a Habitats Regulations Appraisal (HRA). If an HRA is carried out by a third party with the objective of it being adopted by the competent authority, this is often referred to as a shadow HRA.

Likely Significant Effect

1.8 The term 'likely significant effect' comes from Regulation 48(1) of the Habitats Regulations and its interpretation has been shaped by case law and guidance (e.g. European Commission, 2001; European Commission, 2018). In this context 'likely' is defined as whether or not a significant effect can objectively be ruled out. Where a plan or project could influence whether or not a European site's conservation objectives can be attained, the effects on the site must be considered to be significant. This judgement will need to take into account the specific characteristics of the development and the ecological requirements of the European site(s).

Site description

1.9 The application site is located on land at the Port of Dundee, which is operated by the Port of Dundee. To the north of the application site is Stannergate Road, to the east is a rocky foreshore fronting the Firth of Tay, to the south is the Firth of Tay and operational berths associated with the use of Prince Charles Wharf and the Prince Charles Wharf Extension. To the west of the application site is further land owned and operated by the Port of Dundee. The application boundary and existing uses on-site are shown on Drawing Number 130143/8002. Vehicular access is from Stannergate Road.

1.10 The Port of Dundee provides services for the North Sea oil and gas industry, construction industry, paper pulp and forest products sectors, and also a wide range of general and bulk cargoes. The Port of Dundee comprises 1,600m of quayside and currently has 6 working berths. Recently, there has been £10 million invested into various redevelopments, which have included a new quayside to support the decommissioning and offshore wind farm industry, which the Port of Dundee has a strong presence in due to its strategic location.

1.11 As shown on Drawing Number 130143/8002, the application site currently contains a range of buildings and land uses common to an operational port. There is an existing dredge pocket to the front of the existing quay. The existing Prince Charles Wharf and Prince Charles Wharf Extension also lie within the site.

The proposed works

1.12 The proposed development is shown on Drawing Number 130143/8003 and consists of the following main elements:

- Demolition of all existing buildings;
- Creation of suitable areas of land associated with decommissioning works for the offshore oil and gas industry and tenants associated with marshalling the pre-assembly of offshore wind turbines (delivery of components to the Port, some assembly, then export for installation). The works will result in a predominantly unsealed gravel surface across the site with the retention of some small areas of sealed hardstanding;
- Use of land to the east of the application site for the segregating, sorting and processing of predominantly recyclable waste materials;
- The widening of the existing dredged berth associated with the Prince Charles Wharf Extension from 200m x 40m to 200m x 60m. The depth of the adjacent berth would increase to -10.0mCD;
- Slab thickening to the existing Prince Charles Wharf will increase quay capacity;
- A proposed suspended quay on land to the west of Prince Charles Wharf to accommodate Ro-Ro Vessels; and
- Creation of a new berth pocket to the south of the proposed suspended quay (the proposed berth pocket would be 170m x 30m in size and it is proposed to be dredged to a depth of -9.0mCD).

1.13 The construction works involved for the suspended quay and land reclamation works, as well as the strengthening and repair work to the existing quays, will consist of the following:

- Installation of (tubular) piling (by vibro and / or hammer);
- Installation of (sheet) piling (by vibro and / or hammer);
- Strengthening / repairs to steel pile through the installation of steel plating;
- Earthworks (including earth moving, ground improvement works and placement of granular 'pavement');
- Revetment, including general filling and placement of rock armour;
- Reinforced concrete slabbing / decking, including drilling and dowelling into existing slabs forming the existing quay / wharf;
- Concrete patch repairs;
- Drainage works; and
- Utility and lighting installations.

1.14 Some new hardstanding will be created through the proposed suspended quay and the metal processing facility (shown on Drawing 130143/8003). However, overall the demolition of existing buildings and installation of an unsealed gravel surface across the majority of the site will lead to a reduction in areas of hardstanding, from approximately 45,000m^2 as existing to approximately 16,000m^2 as proposed.

1.15 Sediment sampling has been undertaken which confirms that the sediment in the vicinity of the development site comprises of sandy silt and silty sand with some samples presenting gravel fractions. Whilst there are elevated concentrations of some metals and PAHs within the dredged material, these are consistent with historic industrial discharges to the Firth of Tay.

1.16 A report detailing the Best Practicable Environmental Option (BPEO) for the disposal of the sediments is submitted with this shadow HRA (ERM, 2019). The report confirms that disposal of sediments offshore to a licensed sea disposal site (the preferred option being the Middle Bank disposal site) is the BPEO.

Source-receptor-pathway Model

1.17 The spatial scope of this HRA has been determined by application of the source-pathway-receptor model, which highlights whether there is any potential pathway that connects development to any European sites. In this case the spatial scope of the assessment is informed by identifying the impacts that could potentially arise as a result of the development, assessing the spatial and temporal scope of those impacts and understanding the effects on sensitive receptors that might arise.

1.18 The following definitions have been adopted for the purposes of the screening process when applying the source-pathway-receptor model to each relevant designated site and its qualifying features:

- The **source** of the impact is the process that generates the identified impact (e.g. piling during construction works);
- The **pathway** for the impact is the route the source takes to reach the ecological receptor (e.g. noise related disturbance that affects birds on nearby intertidal mudflats);
- The **receptor** is the ecological feature that may be subject to an impact via an identified pathway (e.g. birds as in the previous example).

1.19 For a 'likely significant effect' to occur, an impact must have a source and also a clear linking pathway and a negative impact upon the receptor.

2 Habitats Regulations Assessment

Legislation

2.1 The Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations') transpose the requirements of two European Directives in to UK legislation:

i. Council Directive on the conservation of natural habitats and of wild fauna and flora of 21st May 1992 (92/43/EEC) (the 'Habitats Directive); and

ii. Council Directive on the conservation of wild birds of 2nd April 1979 (70/409/EEC) consolidated by Council Directive on the conservation of wild birds 2009 (2009/147/EC (the 'Birds Directive').

2.2 The Habitats Directive aims to protect plants, habitats and animals other than birds, and this is achieved in part through the creation of Special Areas of Conservation (SACs).

2.3 The Birds Directive aims to protect rare and vulnerable birds and the habitats that they depend upon and this is achieved in part through the classification of Special Protection Areas (SPAs).

2.4 The measures in the Directives required to protect these sites are transposed in to UK legislation as the assessment process set out in the Habitats Regulations (see below).

2.5 The UK is also a contracting party to the Convention on wetlands of international importance especially as waterfowl habitat, Ramsar, Iran, 1971 (the 'Ramsar Convention') which seeks to protect wetlands of international importance, especially those wetlands utilised as waterfowl habitat. It is Scottish Government policy that all competent authorities should treat Ramsar sites in their decision making processes as if they are SACs or SPAs. This policy also brings candidate SACs (cSACs) and potential SPAs (pSPAs) within the requirement for HRA.

2.6 In this report the term 'European Sites' is used to refer collectively to SACs, SPAs and Ramsar sites.

2.7 In line with the UK's proposed departure from the European Commission at the end of October 2019, the following legislation is expected to come into force: The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019. Beyond this date the Habitats Directive and Birds Directive will no longer have a direct effect on UK law.

Habitats Regulations Assessment process

2.8 The requirements of the Habitats Regulations with regard to the implications of plans or projects are set out within Regulation 48. The step-based approach implicit within this regulation is referred to as a 'Habitats Regulations Assessment', which is the term that has been used throughout this report.

2.9 It is a requirement of any public body (referred to as a competent authority within the Habitats Regulations) to carry out a Habitats Regulations Assessment when they are proposing to carry out a project, implement a plan or authorise another party to carry out a plan or project. Competent authorities are required to record the process undertaken, ensuring that there will be no adverse effects on the integrity of any European Site as a result of a plan or project whether alone or in combination with other plans or projects.

Assessment stages

2.10 The assessment of a plan or project goes through a number of stages, with guidance having been published to aid competent authorities fulfil their responsibilities (e.g. European Commission 2001; DCLG, 2006; European Commission 2008). Those stages are summarised in Table 1 below.

Table 1: Stages in the Habitats Regulations Assessment process (Source: The Conservation (Natural Habitats, &c.) Regulations 1994

Stage	Description	Legislative Context
Purpose	Determines if the purpose of the plan or project is directly connected with, or necessary, to the management of a European Site. If it is, then no further assessment is necessary	Regulation 48(1)
Scoping	The identification of any European Site that might be within scope of a HRA, i.e. those European Sites should be taken forward to the screening stage based on a wide consideration of spatial and ecological factors. Such European Sites may be located within the plan or project area but may also include sites located in neighbouring authority areas.	Regulation 48(1)(a) – assessment of 'in combination' effects
Screening	Assessment of whether a plan or project, either alone or in combination with other plans or projects, is likely to have a significant effect on any European Sites' qualifying features (habitats and species) and the achievement of the European Site's conservation objectives. This is also known as the 'test of likely significant effect' (ToLSE).	Regulation 48(1)(a)
Appropriate Assessment	Consideration of the impacts of the proposals to determine whether or not it is possible to conclude with certainty that the development will not result in any adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects and with reference to the European Site's conservation objectives. This is also known as the test of 'adverse effect on integrity' (AEoI). At this stage consent may be granted for the plan or project if it is possible to conclude with certainty that the proposal will not result in any adverse effect on the integrity of any European Site, either alone or in combination with other plans or projects.	Regulation 48(1)
If it cannot be concluded with certainty that the proposal will not result in any adverse effect on the integrity of any European Site then proceed to:		
Assessment of alternative solutions	Assess whether there is an alternative solution to the plan or project, i.e. one that better respects European Sites. If no such alternative solution exists, the process continues to an assessment of whether there are 'imperative reasons of overriding public interest' (IROPI) for the plan or project to proceed.	Regulation 49(1)
Assessment of IROPI	Assess whether a plan or project can be justified as being needed for 'imperative reasons of overriding public interest' (IROPI).	Regulation 49(1)
Compensatory measures	Identify and secure any necessary compensatory measures to ensure that the overall coherence of the European Site network is protected.	Regulation 52

Case law on the HRA process

2.11 The Court of Justice of the European Union (CJEU) and UK Court judgements have identified that in the HRA process the assessment may not have 'lacunae' (gaps or omissions) and must contain complete, precise and definitive findings capable of removing all reasonable scientific doubt as to the effects of the proposed works on the European Site concerned. Court judgements have identified that in the HRA process all aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the conservation objectives of European Sites concerned must be identified in the light of the best scientific knowledge available in the field.

2.12 A recent CJEU judgment (People Over Wind and Sweetman, 12 April 2018, C-323/17) has provided clarification as to when avoidance or reduction (i.e. mitigation) measures can be considered within the HRA process. The headline for the case is:

> "*In the light of all the foregoing considerations, the answer to the question referred is that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site*".

2.13 This case means that a competent authority cannot rely on avoidance or reduction measures that allow a conclusion of 'no likely significant effect' to be reached: instead it is necessary to accept that there is a 'likely significant effect' in the absence of these measures, and move to the next stage, i.e. appropriate assessment, at which point such mitigation measures can be considered. This recent judgement is accounted for in this report.

2.14 A further CJEU judgment (Holohan & Ors. v An Bord Pleanála, 7 November 2018, C - 461/17) provides further clarification about the HRA process, requiring that all habitats and species associated with a European Site (irrespective of whether or not they are qualifying features) must be considered in the assessment if impacts on those non-qualifying habitats or species are liable to affect the conservation objectives of the European Site through, for instance, effects on ecological processes or food chains. This recent judgement is also accounted for in this report.

3 Scope of the Assessment

3.1 The Zone of Influence (ZoI) for the proposed development is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This may extend beyond the Site boundary. The ZoI has been used to determine the extent of the desk study and baseline ecological surveys.

3.2 During the construction stage of the development the ZoI is considered to be the area around the Site where impacts might arise during the construction, operation and decommissioning phases of the development. The extent of the ZoI necessarily varies depending upon the sensitivity of the ecological receptors being considered and the impact mechanism being considered. In this assessment a 10 km ZoI has been adopted, which is based on the following considerations:

- Habitat loss and disturbance arising from construction work will be limited to the Site itself, with dust related impacts potentially extending to 50 m beyond the Site boundary (see below). Pollution effects may be wider ranging if pollutants enter the adjacent Firth of Tay, and dredging related effects may also extend further than the area where dredging takes place. Nevertheless, Bates *et al* (2004) reports that the Firth of Tay is 'characterised by powerful tidal currents and a high suspended sediment load', and dredging already takes place at the port, so dredging related impacts are unlikely to be wide ranging. A precautionary 1 km ZoI has been applied to take account of such impacts.
- Disturbance related impacts on mobile species, such as birds, are potentially wider ranging. The Outer Firth of Forth and St Andrews Bay Complex pSPA is located adjacent to the Site and so any qualifying species using the Firth of Tay near the Site may be disturbed by the proposed works. Whilst disturbance related impacts on birds are unlikely to extend as far as the nearest part of the Firth of Tay and Eden Estuary SPA, which is 2.9 km to the east, it is possible that there may be disturbance of birds using 'functionally linked areas' (see below). Published information indicates that those birds that could potentially be present in the vicinity of the Site are unlikely to be disturbed at distances exceeding 1 km from a source (Ruddock & Whitfield, 2007; Laursen, Kahlert & Frikke, 2005).
- Research shows that the maximum effect distance of piling related noise on marine mammals was 14 km at an offshore wind farm site where noise mitigation systems were employed (Brandt & Diederichs, 2018). Dahl (2015) notes that intense sound impulses from impact piling are likely to disrupt the behaviour of marine mammals at ranges of many kilometres and have the potential to induce hearing impairment at close range. As marine piling is proposed a precautionary 14 km ZoI is considered to be appropriate when assessing impacts on marine mammals.
- Experimental research shows that in a contained situation Atlantic salmon did not perceive pile driving playback noise as a stressor. One explanation that is provided centres on Atlantic salmon hearing ability: this species is particularly sound insensitive lacking specialist hearing mechanisms (Harding et al, 2016). The author's also observe that 'the lack of such mechanisms reduces the fish's sensitivity and bandwidth to detect a noise stimulus, resulting in a poorer ability to distinguish specific acoustic cues from background noise'.

3.3 Current guidance (Holman *et al*, 2014) advises that construction related dust impacts only need to be considered for important ecological features within 50 m of the development boundary. As the nearest European site is considerably further away than this, dust arising from the construction and decommissioning phases of the development is not likely to migrate as far as any European site.

3.4 Consideration also needs to be given to areas that are not subject to a European designation but which may be 'functionally linked' to a European site if it serves a function for the interest features of that site. Functional linkage has been defined as follows (Chapman & Tyldesley, 2016):

3.5 '*the term 'functional linkage' refers to the role or 'function' that land or sea beyond the boundary of a European site might fulfil in terms of ecologically supporting the populations for which the site was designated or classified. Such land is therefore 'linked' to the European site in question because it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status*.'

3.6 In summary, the following potential types of adverse effect have been considered in this assessment:

- Physical habitat loss – land take by the works and indirect effects from dredging (and impact arising from disposal of dredge spoil), whilst noting that the site is operational port land and dredging does already occur at the site;
- Physical habitat damage – from on-site activities (which may include functionally-linked areas), albeit this is expected to be limited to the increased dredge areas;
- Disturbance – e.g. noise from working machinery or visible presence of people, whilst noting that the site is operational port land.
- Changes in water quality – from the release of water-borne pollutants, whilst noting that the site is operational port land and dredging does already occur at the site.
- Changes in air quality – from the release of airborne pollutants, whilst noting that the site is operational port land.

3.7 Taking into account all impact mechanisms and the ZoIs that have been adopted for the assessment, the HRA considers impacts on the following European sites:

- Firth of Tay and Eden Estuary SAC;
- Firth of Tay and Eden Estuary SPA;
- Firth of Tay and Eden Estuary Ramsar;
- Outer Firth of Forth and St Andrews Bay Complex pSPA;
- River Tay SAC (due to functionally-linked habitat);
- Moray Firth SAC (due to potentially functionally-linked habitat).

3.8 No impact mechanisms have been identified for any other European sites that are located more than 10 km from the Site and so they have been scoped out of this assessment. Although Barry Links SAC is located 8.2 km to the east of the proposed development, it has been excluded for the HRA as there is no mechanism by which an impact could occur (the SAC is noted for coastal dune heathland, dunes and dune slacks).

4 Information on the Relevant European Sites

4.1 Set out below is information relating to the following parameters for each of the European Sites within the scope of the assessment:

- Site name
- Site code
- Year classified/designated/listed
- Area
- Qualifying interest features
- Conservation objectives
- Distance between nearest component of European Site and the proposed development
- Sources of information

4.2 The European Sites that have been considered are Firth of Tay and Eden Estuary SAC, SPA and Ramsar, Outer Firth of Forth and St Andrews Bay Complex pSPA, the River Tay SAC and Moray Firth SAC (see Figure 2 in Section 7).

Table 1

Site name: Firth of Tay and Eden Estuary SAC
Site code: UK0030311
Year designated: 2005
Area: 15441.63 ha
Qualifying interest features: Annex I habitats that are a primary reason for selection of this site: • Estuaries Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide Annex II species that are a primary reason for selection of this site: • Harbour seal *Phoca vitulina*
Conservation objectives: To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitats that the following are maintained in the long term: • Extent of the habitat on site; • Distribution of the habitat within site; • Structure and function of the habitat; • Processes supporting the habitat; • Distribution of typical species of the habitat; • Viability of typical species as components of the habitat; • No significant disturbance of typical species of the habitat.

Site name: Firth of Tay and Eden Estuary SAC
Distance: The SAC is adjacent to the proposed development Site.
Sources of information: Site citation - https://sitelink.nature.scot/site/8257 JNCC Natura 2000 Data Form - http://archive.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030311.pdf Conservation Objectives - https://sitelink.nature.scot/site/8257 Supplementary advice on condition of features - https://www.environment.gov.scot/data/data-analysis/protected-nature-sites/?pagenumber=1&resetmap=true&siteid=8257 Site Improvement Plan – n/a

Table 2

Site name: Firth of Tay and Eden Estuary SPA
Site code: UK9004121
Year listed: 2005
Area: 6,947.62 ha
Qualifying interest features: The Firth of Tay and Eden Estuary SPA qualifies under Article 4.1 by regularly supporting populations of European importance of the Annex I species: • Marsh harrier *Circus aeruginosus*; little tern *Sternula albifrons* and bar-tailed godwit *Limosa lapponica*. The Firth of Tay and Eden Estuary SPA further qualifies under Article 4.2 by regularly supporting populations of European importance of the migratory species: • redshank *Tringa totanus*; greylag goose *Anser anser* and pink-footed goose *Anser brachyrhynchus*. The Firth of Tay and Eden Estuary SPA also qualifies under Article 4.2 by regularly supporting in excess of 20,000 individual waterfowl. During the period 1990/91 to 1994/95 a winter peak mean of 48,000 individual waterfowl was recorded, comprising 28,000 wildfowl and 20,000 waders, including nationally important populations of the following species: velvet scoter *Melanitta fusca*. Qualifying species: bar-tailed godwit *Limosa lapponica*; black-tailed godwit *Limosa limosa islandica*; common scoter *Melanitta nigra*; cormorant *Phalacrocorax carbo*; dunlin *Calidris alpina alpine*; eider *Somateria mollissima*; goldeneye *Bucephala clangula*; goosander *Mergus merganser*; grey plover *Pluvialis squatarola*; greylag goose *Anser anser*; little tern *Sternula albifrons*; long-tailed duck *Clangula hyemalis*; marsh harrier *Circus aeruginosus*; oystercatcher *Haematopus ostralegus*; pink-footed goose *Anser brachyrhynchus*; red-breasted merganser *Mergus serrator*; redshank *Tringa tetanus*; sanderling *Calidris alba*; shelduck *Tadorna tadorna*; and velvet scoter *Melanitta fusca*.

Site name: Firth of Tay and Eden Estuary SPA
Conservation objectives: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • Population of the species as a viable component of the site; • Distribution of the species within site; • Distribution and extent of habitats supporting the species; • Structure, function and supporting processes of habitats supporting the species; • No significant disturbance of the species.
Distance: The SPA is 2.9 km from the proposed development site
Sources of information: Site Citation - https://sitelink.nature.scot/site/8501 JNCC Natura 2000 Data Form – http://archive.jncc.gov.uk/pdf/SPA/UK9004121.pdf Conservation Objectives – https://sitelink.nature.scot/site/8501 Supplementary advice on condition of features – https://www.environment.gov.scot/data/data-analysis/protected-nature-sites/?pagenumber=1&resetmap=true&siteid=8501 Site Improvement Plan – n/a

Table 3

Site name: Firth of Tay and Eden Estuary Ramsar site
Site code: UK13018
Year designated: 2000
Area: 6918.42 ha
Qualifying interest features: Ramsar criterion 5: • Assemblages of international importance: Species with peak counts in winter: 27,028 waterfowl Ramsar criterion 6: • Species/populations occurring at levels of international importance. Qualifying Species/populations with peak counts in winter: pink-footed goose *Anser brachyrhynchus*; greylag goose *Anser anser anser*; bar-tailed godwit *Limosa lapponica lapponica*
Conservation objectives: No specific Ramsar conservation objectives are available. It is assumed that SAC and SPA conservation objectives will apply by default.
Distance: The Ramsar site is 2.9 km from the proposed development site.

Site name: Firth of Tay and Eden Estuary Ramsar site
Sources of information: Site citation - https://sitelink.nature.scot/site/8425 Ramsar Site Information Sheet - https://sitelink.nature.scot/site/8425 Conservation Objectives – n/a Supplementary advice on condition of features – https://www.environment.gov.scot/data/data-analysis/protected-nature-sites/?pagenumber=1&resetmap=true&siteid=8425 Site Improvement Plan – n/a

Table 4

Site name: Outer Firth of Forth and St Andrews Bay Complex pSPA
Site code: UK9020316
Year designated: proposed
Area: 272068.1 ha
• Breeding: Arctic tern, Atlantic puffin, common guillemot, common tern, European shag, herring gull, kittiwake, Manx shearwater, Northern gannet; • Non-breeding: black-headed gull, common eider, common goldeneye, common guillemot, common gull, common scoter, European shag, herring gull, kittiwake, little gull, long-tailed duck, razorbill, red-breasted merganser, red-throated diver, Slavonian grebe, velvet scoter.
The conservation objectives for the Outer Firth of Forth and St Andrews Bay Complex proposed SPA are: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.
Distance: The pSPA is adjacent to part of the proposed development site.
Sources of information: Site citation - https://www.nature.scot/outer-firth-forth-and-st-andrews-bay-complex-proposed-marine-spa-supporting-documents JNCC Natura 2000 Data Form – n/a Conservation Objectives – https://www.nature.scot/sites/default/files/2017-11/Marine%20Protected%20Area%20%28Proposed%29%20-%20Advice%20to%20support%20management%20-%20Outer%20Firth%20of%20Forth%20and%20St%20Andrews%20Bay%20Complex.pdf Supplementary advice to support management – https://www.nature.scot/outer-firth-forth-and-st-andrews-bay-complex-proposed-marine-spa-supporting-documents Site Improvement Plan – n/a

Table 5

Site name: River Tay SAC
Site code: UK0030312
Year designated: 2005
Area: 9461.63 ha
Qualifying interest features: Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* Annex II species that are a primary reason for selection of this site: • Atlantic salmon *Salmo salar* Annex II species present as a qualifying feature, but not a primary reason for site selection • Sea lamprey *Petromyzon marinus* • Brook lamprey *Lampetra planeri* • River lamprey *Lampetra fluviatilis* • Otter *Lutra lutra*
Conservation objectives: To avoid deterioration of the qualifying habitat thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitat that the following are maintained in the long term: • Extent of the habitat on site; • Distribution of the habitat within site; • Structure and function of the habitat; • Processes supporting the habitat; • Distribution of typical species of the habitat; • Viability of typical species as components of the habitat; • No significant disturbance of typical species of the habitat.
Distance: The downstream limit of the SAC is 26 km to the west of the proposed development Site.
Sources of information: Site citation - https://sitelink.nature.scot/site/8366 JNCC Natura 2000 Data Form - http://archive.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0030312.pdf Conservation Objectives - https://sitelink.nature.scot/site/8366 Supplementary advice on condition of features - https://www.environment.gov.scot/data/data-analysis/protected-nature-sites/?pagenumber=1&resetmap=true&siteid=8366 Site Improvement Plan – n/a

Table 6

Site name: Moray Firth SAC
Site code: UK0019808
Year designated: 2005
Area: 151273.99 ha
Qualifying interest features: Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time Annex II species that are a primary reason for selection of this site: • Bottlenose dolphin *Tursiops truncatus*
Conservation objectives: To avoid deterioration of the qualifying habitat thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and To ensure for the qualifying habitat that the following are maintained in the long term: • Extent of the habitat on site; • Distribution of the habitat within site; • Structure and function of the habitat; • Processes supporting the habitat; • Distribution of typical species of the habitat; • Viability of typical species as components of the habitat; • No significant disturbance of typical species of the habitat.
Distance: The nearest part of the SAC is 138 km to the north of the proposed development Site.
Sources of information: Site citation - https://sitelink.nature.scot/site/8327 JNCC Natura 2000 Data Form - http://archive.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0019808.pdf Conservation Objectives - https://sitelink.nature.scot/site/8327 Supplementary advice on condition of features - https://www.environment.gov.scot/data/data-analysis/protected-nature-sites/?pagenumber=1&resetmap=true&siteid=8327 Site Improvement Plan – n/a

Site condition

Firth of Tay and Eden Estuary SAC

4.3 The Scotland's Environment website indicates that the habitats 'Intertidal mudflats and sandflats' and 'Subtidal sandbanks' are in favourable condition. The habitat 'Estuaries' has not been assessed. The harbour seal population is described as being in unfavourable condition.

Firth of Tay and Eden Estuary SPA

4.4 The Scotland's Environment website indicates that some bird species are in favourable condition whilst some species are in unfavourable condition. Species populations that are identified as being in unfavourable condition are: common scoter; goldeneye; greylag goose; little tern; long-tailed duck; red-breasted merganser; shelduck; velvet scoter.

Firth of Tay and Eden Estuary Ramsar

4.5 The Scotland's Environment website indicates that the bird assemblage that the Ramsar is noted for is in favourable condition.

Outer Firth of Forth and St Andrews Bay pSPA

4.6 This site is currently only proposed and so no information is available on current condition.

River Tay SAC

4.7 The Scotland's Environment website indicates that all qualifying features are in favourable condition.

Moray Firth SAC

4.8 The Scotland's Environment website indicates that all qualifying features are in favourable condition.

5 Identification of any Likely Significant Effects

5.1 The following section of this report carries out the screening of likely significant effects. This fulfils the requirement of Regulation 63 of the Habitats Regulations that a proposed project is assessed to determine whether or not it is likely to have a significant effect on the qualifying features (species and habitats) of any European Site, either alone or in combination with other plans or projects.

5.2 The proposed development is not directly connected with or necessary to the management of any European Site.

5.3 The following European Sites are screened for any likely significant effects (see Figure 2 in Section 7):

- Firth of Tay and Eden Estuary SAC;
- Firth of Tay and Eden Estuary SPA;
- Firth of Tay and Eden Estuary Ramsar site;
- Outer Firth of Forth and St Andrews Bay pSPA;
- River Tay SAC; and
- Moray Firth SAC.

5.4 The following types of potentially adverse activity are screened in as a source of any likely significant effects in accordance with the requirements of Regulation 63 of the Habitats Regulations:

- Physical habitat loss – Impacts on habitats, i.e. the loss or destruction of habitats, arising from the proposed development including habitats within European site boundaries and habitats outside European sites that have the potential to be 'functionally linked'. This includes consideration of the indirect effects of dredging;
- Physical habitat damage – Impacts on habitats, i.e. temporary / short-term disturbance, arising from the proposed development including habitats within European site boundaries and habitats outside European sites that have the potential to be 'functionally linked';
- Disturbance – Impacts on sensitive species, such as birds and harbour seal, due to, for example, noise from working machinery or visible presence of people.
- Changes in water quality which may arise from the following: potential pollution of surface water from fuel spills; potential release of suspended solids/sediment into the Firth of Tay as a result of the development; the potential release of suspended solids within the coastal environment as a result of dredging at the extraction site; potential release of sediment contamination as a result of seabed disturbance.

5.5 The following types of potentially adverse activity have been screened out as a source of any likely significant effects in accordance with the requirements of Regulation 63 of the Habitats Regulations:

- Changes in air quality (dust): Guidance indicates that dust related impacts are only likely to extend 50m from the working area (Holman *et al*, 2014) and so the spatial extent of dust-related impacts is likely to be very limited. Dust falling into the marine environment is likely to be rapidly dispersed.

- Changes in air quality (emissions): Changes in air quality arising from machinery are not likely to have a significant effect on most marine habitats due to rapid mixing and dispersal and the influence of other chemical sources. Published data (http://www.apis.ac.uk, accessed 22 September 2019) indicates that most of the qualifying features of the Firth of Tay and Eden Estuary SAC are not sensitive to aerial pollutants, with the exception of saltmarsh which may be sensitive to increase nitrogen deposition (saltmarsh also supports a number of SPA qualifying species). The results of a previous survey (Royal Haskoning DHV, 2012) indicate that there is no saltmarsh in the vicinity of the proposed development and so effects from nitrogen deposition are not likely. Source attribution data indicate that a significant proportion of nitrogen deposition is derived from agricultural, non-agricultural abatable, non-agricultural non-abatable and transport related sources as well as contributions from Europe. The proposed development will not result in an increase in either road traffic visiting the development site, or in ships using the dock. This is because the Port has permitted development rights to undertake as much activity as they need to meet operational demands, which can therefore increase with or without the proposed development. For this reason significant air quality impacts are unlikely.

5.6 Each European Site is assessed in turn with reference to the potentially adverse activity, first considering the site alone and then, if necessary, considering the site in-combination with other plans and projects.

5.7 In accordance with the People Over Wind and Sweetman judgement (12 April 2018, C-323/17), the screening for likely significant effects has not relied on avoidance or reduction measures that allow a conclusion of 'no likely significant effect' to be reached. Instead it is accepted that there may be a 'likely significant effect' in the absence of these measures, which triggers the need to move to the next stage, i.e. appropriate assessment.

Testing for likely significant effects of the project alone

5.8 The screening of each European Site against each potentially adverse activity is set out below in Tables 7 to12.

Table 7

Site:	**Interest features:**
Firth of Tay and Eden Estuary SAC	Qualifying interest features: Annex I habitats that are a primary reason for selection of this site: • Estuaries Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time • Mudflats and sandflats not covered by seawater at low tide Annex II species that are a primary reason for selection of this site: • Harbour seal *Phoca vitulina*
Potentially adverse activity:	**Assessment:**
Physical habitat loss	The proposed development will involve works within the boundary of the SAC, including: the widening of the existing dredged berth associated with the Prince Charles Wharf Extension from 200m x 40m to 200m x 60m, where the depth of the berth would increase to -10.0mCD; a proposed suspended quay on land to the west of Prince Charles Wharf; and creation of a new berth pocket to the south of the proposed suspended quay. The proposed berth pocket would be 170m x 30m and is proposed to be dredged to a depth of -9.0mCD. This work will necessarily impact on intertidal and benthic habitats adjacent to the Site. Bates *et al* (2004) reports that the Firth of Tay is 'characterised by powerful

	tidal currents and a high suspended sediment load. It is overwhelmingly dominated by sediment biotopes. The subtidal sediments of the main river channels tend to be mobile with a relatively impoverished fauna.' In the vicinity of the proposed development site Bates et al (2004) observe that 'natural shores are completely replaced by the vertical stone and wood wharfs of Dundee docks'. Published data show that the benthic habitat that will be affected by the proposed development is Eunis A5.326 'Oligochaetes in variable or reduced salinity infralittoral muddy sediment'. Previous work undertaken by SLR (SLR, 2015) noted that '*the current maintenance dredging activities at the Site are typically carried out in the summer / autumn months, subject to dredger availability, and last for approximately three to five 24-hour working days with the dredged material deposited at the Middle Bank spoil ground*'. Current dredging activity is therefore limited in its duration and only impacts on sediments that support low biotic diversity. A similar impact is anticipated for the proposed future dredging. It is expected that a similar dredging requirement will apply to the proposed development. As set out in the ERM (2019) BPEO Report, the proposal includes the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. The proposed dredging schedule will be dependent on the licence award date, dredger availability and construction periods. The length of the campaign will be largely dependent on when the dredger is available, and it is possible that dredging could take place at different times depending on the work required to create the berths. It is therefore concluded that the proposed work will impact on baseline conditions that are already subject to the effects of on-going dredging activities. However, as dredging is only likely to be required for a limited period of time (and for a fixed volume of dredged material), the impact on the Firth of Tay is expected to be negligible.
Conclusion	No likely significant effect.
Physical habitat damage	The proposed development will involve works within the boundary of the SAC. Whilst this will result in some habitat loss there is also the potential for habitat damage or disturbance to occur. The scope for such impacts are reduced by the existing alignment of the port and quay walls, the port having previously been expanded southwards into the Firth of Tay to provide access to deeper water. Consequently the shoreline area mostly consists of rock armour, sheet piling, concrete slabs etc that are covered and uncovered by the flooding and ebbing tides respectively. The assessment presented for habitat loss (see above) is also relevant when considering habitat damage and disturbance. In summary the proposed works will only impact on the subtidal sediments of the main river channels, which tend to be mobile with a relatively impoverished fauna.
Conclusion	No likely significant effect.
Disturbance	Harbour seal is a qualifying feature of the SAC and the proposed works, including the widening of the existing dredged berth; slab thickening to the existing Prince Charles Wharf to increase quay capacity; a proposed suspended quay on land to the west of Prince Charles Wharf to accommodate Ro-Ro Vessels; and creation of a new berth pocket to the south of the proposed suspended quay may result in the disturbance of the species, if present. The JNCC (https://sac.jncc.gov.uk/species/S1365/, accessed 22 October 2019) reports that the European population of harbour seal has shown a marked recovery after being reduced by a viral epidemic in the late 1980s.

	Thompson *et al* (2019) report that their study results indicate that the current UK harbour seal population is similar to estimates from the late 1990s, but there were significant declines in some subpopulations and increases in others. Harbour seals have previously been reported to be numerous in the Middle Tay, and have not been observed at Stannergate, i.e. in the vicinity of the development site, but have preferred haul-outs in Invergowrie Bay, My Lords Bank, Naughton Bank and Middle Bank (Royal Haskoning DHV, 2013). The total numbers observed at low tide have previously been in excess of 100 individuals with a peak of 58 recorded on the Naughton Bank. Whilst previous survey indicates that harbour seal have been present in the Middle Tay, the current status at the local level is not known. SNH[2] reports that harbour seals on the east coast of Scotland have seen a serious decline since the mid-1990s, but the reason why is not clear. Several factors may be to blame, including predation, pollution and the effect of climate change on the harbour seal's prey. In 2012, the Sea Mammal Research Unit began a major programme of research to investigate the decline and the Natural Environment Research Council (NERC) appointed the Special Committee on Seals (SCOS) to formulate advice to Government taking into account this research. As part of this research population counts have been carried out and advice published[3]. The harbour seal count for the Firth of Tay and Eden Estuary SAC in 2017 was 29, equalling the lowest count (in 2014) for this SAC. This count represents a 95% decrease from the mean counts recorded between 1990 and 2002 (641). Previous work undertaken by SLR (SLR, 2015) concluded that significant effects on breeding harbour seal are unlikely because of the location of the development in relation the seal's breeding area, which is on the exposed sandbanks at Tentsmuir, over 7 km east of the Port of Dundee. Whilst seals forage throughout the outer Firth of Tay, including the area near the Site, it was concluded that '*The very small temporary loss of benthic habitat through the proposed capital dredging is not likely to affect the foraging resource for harbour seals. Similarly suspended sediment concentrations are not likely to be significantly different from current levels so prey resources for harbour seals will not be significantly affected.*' Piling works and works to the quay walls may result in some underwater noise. There is evidence that underwater noise can impact on harbour seal: for example, a study conducted at an offshore wind farm found that during piling, seal usage (abundance) was significantly reduced up to 25 km from the piling activity; within 25 km of the centre of the wind farm, there was a 19 to 83% (95% confidence intervals) decrease in usage compared to during breaks in piling (Russell *et al*, 2016). Consequently underwater noise arising from the proposed development may result in the displacement of harbour seal (the nearest haul-out is approximately 3 km to the west, which is close enough for noise impacts to occur based on published research). In the absence of mitigation it is considered that underwater noise is likely to have a significant effect on harbour seal.
Conclusion	Likely significant effect.
Changes in water quality	The Firth of Tay is described as being relatively shallow and partially mixed to well-mixed (Bates *et al*, 2004; Royal Haskoning DHV, 2013). The significant freshwater influence and macro-tidal (more than 4m tidal range)

[2] https://www.nature.scot/plants-animals-and-fungi/mammals/marine-mammals/seals, accessed 25 October 2019.
[3] http://www.smru.st-andrews.ac.uk/research-policy/scos/, accessed 25 October 2019 (SCOS Report 2018).

	nature of the Firth, means that the residence time of water in the Firth is relatively short (2-15 days). This means that any material discharged to the Firth is rapidly diluted and discharged to sea (Royal Haskoning DHV, 2013). Changes in water quality can potentially occur as a result of potential pollution of surface water from fuel spills, the mobilisation of suspended solids within the coastal environment as a result of dredging (leading to impacts on turbidity and potentially dissolved oxygen levels), and release of sediment contamination as a result of seabed disturbance. Whilst it is likely that the proposed dredging will re-suspend sediment within the water column, there are already high existing levels of suspended sediments as a result of natural processes of sediment suspension and transport within the Firth of Tay (Bates *et al*, 2004). On-going maintenance dredging and other port activities contribute to this. ERM (2019) sampled the sediments within Caledon East Wharf and Prince Charles Wharf in June 2019. Analysis of the sediments found that there are elevated concentrations of some metals and Polycyclic Aromatic Hydrocarbons (PAHs) within the dredged material above Action Level 1[4], consistent with historic industrial discharges to the Firth of Tay. No samples recorded concentrations of contaminants above Marine Scotland Action Level 2. The proposed development will involve the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. As dredging will take place intermittently within an environment that is characterised by powerful tidal currents and a high suspended sediment load, it is considered that this is not likely to have a significant effect on the SAC.
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will have a likely significant effect on this European Site and its interest features. Appropriate Assessment is therefore required.

Table 8

Site:	**Interest features:**
Firth of Tay and Eden Estuary SPA	Qualifying interest features: Article 4.1: • Marsh harrier, little tern and bar-tailed godwit. Article 4.2: • redshank; greylag goose and pink-footed goose Article 4.2 assemblage: 48,000 individual waterfowl
Potentially adverse activity:	**Assessment:**
Physical habitat loss	The nearest part of the SPA is 2.9 km to the east, which is sufficiently distant to make the direct loss of habitats from the SPA highly unlikely. Habitat loss arising from the proposed development is only likely to impact

[4] Action Levels for metals, PCBs, TBT and PAHs are used by Marine Scotland to assess the suitability for disposal of sediments at sea.

	on the SPA if the area in the vicinity of the Site is 'functionally linked' to the SPA, i.e. it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status. During the construction and operation phases of the development, habitat loss will be limited to benthic material (primarily as a result of dredging work) and small areas of intertidal habitats (the shore area adjacent to the Site mostly consists of rock armour, sheet piling, concrete slabs etc.). It is unlikely that these areas will be used by the qualifying species of the SPA as the habitat is not suitable.
Conclusion	No likely significant effect.
Physical habitat damage	The disturbance and damage of habitats during the construction and operation phases are expected to have similar impacts as those described above when considering the impacts arising from habitat loss.
Conclusion	No likely significant effect.
Disturbance	Disturbance related impacts on the SPA qualifying features, i.e. birds, are likely to extend beyond the Site boundary. Whilst disturbance related impacts on birds are unlikely to extend as far as the nearest part of the Firth of Tay and Eden Estuary SPA, which is 2.9 km to the east, it is possible that disturbance of birds using 'functionally linked areas' may occur (see for example Ruddock & Whitfield, 2007; Laursen, Kahlert & Frikke, 2005). The intensity, frequency and duration of a disturbance event will determine whether or not it has the potential to result in the disturbance of birds (SLR, 2015). For example, infrequent, high-intensity activities are more likely to result in disturbance than continuous low-intensity activities. Large amplitude 'startling' noise components are more likely to result in disturbance effects; however, it is also reported that some birds may become habituated to continual noises. A previous noise assessment (Ethos Environmental Ltd, 2012) concluded that the background noise background level is 49.1 dB L_{A90} at the representative residential location. The study also found that L_{AMAX} peaked at 76 B, indicating that occasional louder noises do occur (this assessment considers noise within terrestrial areas only). Birds may respond to visual disturbance, particularly in situations where such disturbance is rare. Vehicles and vehicle-movements may be tolerated to a greater extent than people (SLR, 2015). Disturbance may result in birds being displaced into alternative habitat further from the source of disturbance. Whilst this may have no discernible effect on the population of the species concerned, interruption of feeding can potentially affect a bird's ability to maintain their energy reserves and therefore an individual's chances of surviving poor weather (SLR, 2015). A previous survey (ECOS Countryside Services LLP, 2011) has revealed that the development site and surrounding area support a range of species, some of which are qualifying species for the Firth of Tay and Eden SPA and Ramsar site. Whilst most species have been recorded in low numbers the surveys have shown that the area is used regularly by moderate numbers of oystercatcher (peak count of 116 in January 2010), turnstone (peak count of 69 in August 2012) and redshank (peak count of 28 in February 2010). Other qualifying species that have been recorded include eider, red-breasted merganser, cormorant and dunlin. The survey data indicate that SPA birds are present, but the relatively small numbers that are present and the frequency of bird presence do not indicate that the area is functionally linked to the SPA and Ramsar, i.e. it is unlikely that the habitat provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status (taking

	into account the area of the SPA / Ramsar, which is over 6,900 ha). Noise disturbance is most likely during works involving loud, irregular noise such as piling. Noise disturbance is also possible during dredging (from the operating equipment), though some tolerance may reasonably be expected taking into account current levels of baseline disturbance and existing dredging activities (the Port of Dundee currently has an average of 746 vessel movements per annum (ERM, 2019), as well as permitted development rights to increase operations on an unrestricted basis). There are no known high tide wader roosts on the north shore of the Tay between the Tay Bridge and Broughty Ferry (SLR, 2015). There are no inter-tidal mudflats within the port area, with the closest inter-tidal mudflats used by wading birds located to the east of the site, between Stannergate and Broughty Ferry (SLR, 2015). Survey in 2013 (Royal Haskoning DHV, 2013) indicates that the intertidal area to the east of the Site comprises mudflats, scattered boulders and cobbles/pebbles. These habitats are used by some SPA qualifying birds, although most are present in relatively small numbers and infrequently. Disturbance impacts to waterbirds are therefore possible for birds using the water adjacent to the site or using inter-tidal habitats to the east of the port; however, the numbers that may be affected are likely to be small. Overall it is considered that the proposed development is not likely to have a significant effect on SPA qualifying birds as the area supports moderate numbers of a limited range of species. The area already experiences high levels of disturbance associated with the operation of the Port.
Conclusion	No likely significant effect.
Changes in water quality	The Firth of Tay is relatively shallow and partially mixed to well-mixed (Bates *et al*, 2004; Royal Haskoning DHV, 2013). The significant freshwater influence and macro-tidal (more than 4m tidal range) nature of the Firth, means that the residence time of water in the Firth is relatively short (2-15 days). This means that any material discharged to the Firth of Tay is rapidly diluted and discharged to sea (Royal Haskoning DHV, 2013). Changes in water quality can potentially occur as a result of potential pollution of surface water from fuel spills, the mobilisation of suspended solids within the coastal environment as a result of dredging (leading to impacts on turbidity and potentially dissolved oxygen levels), and release of sediment contamination as a result of seabed disturbance. Whilst it is likely that the proposed dredging will re-suspend sediment within the water column, there are already high existing levels of suspended sediments as a result of natural processes of sediment suspension and transport within the Firth of Tay (Bates *et al*, 2004). On-going maintenance dredging and other port activities contribute to this. ERM (2019) sampled the sediments within Caledon East Wharf and Prince Charles Wharf in June 2019. Analysis of the sediments found that there are elevated concentrations of some metals and Polycyclic Aromatic Hydrocarbons (PAHs) within the dredged material above Action Level 1, consistent with historic industrial discharges to the Firth of Tay. No samples recorded concentrations of contaminants above Marine Scotland Action Level 2. The proposed development will involve the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would reduce the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. As dredging will take place intermittently within an environment that is characterised by powerful tidal currents and a high

	suspended sediment load, it is considered that this is not likely to have a significant effect on birds or on the prey species upon which those birds depend.
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will not have a likely significant effect on this European Site and its interest features. In light of this it is necessary to carry out an 'in combination' assessment to see if there is any potential for the effects of this project, when combined with other projects, to give rise to likely significant effects on this designation.

Table 9

Site:	**Interest features:**
Firth of Tay and Eden Estuary Ramsar	Qualifying interest features: Ramsar criterion 5: • Assemblages of 27,028 waterfowl Ramsar criterion 6: • Internationally important populations of pink-footed goose, greylag goose and bar-tailed godwit
Potentially adverse activity:	**Assessment:**
Physical habitat loss	See Table 7 – the screening assessment for likely significant effects on the Ramsar site is the same as reported for the Firth of Tay and Eden Estuary SPA.
Conclusion	No likely significant effect.
Physical habitat damage	See Table 7 – the screening assessment for likely significant effects on the Ramsar site is the same as reported for the Firth of Tay and Eden Estuary SPA.
Conclusion	No likely significant effect.
Disturbance	See Table 7 – the screening assessment for likely significant effects on the Ramsar site is the same as reported for the Firth of Tay and Eden Estuary SPA.
Conclusion	No likely significant effect.
Changes in water quality	See Table 7 – the screening assessment for likely significant effects on the Ramsar site is the same as reported for the Firth of Tay and Eden Estuary SPA.
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will not have a likely significant effect on this European Site and its interest features. In light of this it is necessary to carry out an 'in combination' assessment to see if there is any potential for the effects of this project, when combined with other projects, to give rise to likely significant effects on this designation.

Table 10

Site:	**Interest features:**
Outer Firth of Forth and St Andrews Bay pSPA	Qualifying interest features: • Breeding: Arctic tern, Atlantic puffin, common guillemot, common tern, European shag, herring gull, kittiwake, Manx shearwater, Northern gannet; • Non-breeding: black-headed gull, common eider, common goldeneye, common guillemot, common gull, common scoter, European shag, herring gull, kittiwake, little gull, long-tailed duck, razorbill, red-breasted merganser, red-throated diver, Slavonian grebe, velvet scoter.
Potentially adverse activity:	**Assessment:**
Physical habitat loss	The nearest part of the pSPA is adjacent to the south-east corner of the proposed development Site. Habitat loss arising from the proposed development is only likely to impact on the pSPA if the area in the vicinity of the Site is used by any qualifying features (birds). Information published by SNH (SNH, 2006) indicates that the outer Firth of Tay (including the area in the vicinity of the Site) is used by red-throated diver, red breasted merganser, common eider, and potentially common scoter and long-tailed duck. A survey in 2011 (ECOS Countryside Services LLP, 2011) has revealed that the development site and surrounding area support some qualifying species for the pSPA. The qualifying species that have been recorded are eider (peak count of 14 in December 2010 and March 2011) and red-breasted merganser (peak count of 17 in February 2011). During the construction and operation phases of the development, habitat loss will be limited to benthic material (primarily as a result of dredging work) and small areas of intertidal habitats (the intertidal area adjacent to the Site mostly consists of rock armour, sheet piling, concrete slabs etc). It is unlikely that these areas will be used by the qualifying species listed above taking into account current levels of disturbance.
Conclusion	No likely significant effect.
Physical habitat damage	The disturbance and damage of habitats during the construction and operation phases are expected to have similar impacts as those described above when considering the impacts arising from habitat loss.
Conclusion	No likely significant effect.
Disturbance	Disturbance related impacts on the SPA qualifying features, i.e. birds, are likely to extend beyond the Site boundary. Information published by SNH (SNH, 2006) indicates that the outer Firth of Tay (including the area in the vicinity of the Site) is used by red-throated diver, red breated merganser, common eider, and potentially common scoter and long-tailed duck. The intensity, frequency and duration of a disturbance event will determine whether or not it has the potential to result in the disturbance of birds (SLR, 2015). For example, infrequent, high-intensity activities are more likely to result in disturbance than continuous low-intensity activities. Large amplitude 'startling' noise components are more likely to result in disturbance effects; however, it is also reported that some birds may become habituated to continual noises. In the absence of baseline noise data for the Site it is assumed that the proposed development will result in potentially disturbing noise events. Birds may respond to visual disturbance, particularly in situations where such disturbance is rare. Vehicles and vehicle-movements may be tolerated much better than people (SLR, 2015).

	Disturbance may result in birds being displaced into alternative habitat further from the source of disturbance. Whilst this may have no discernible effect on the population of the species concerned, interruption of feeding can potentially affect a bird's ability to maintain their energy reserves and therefore an individuals' chances of surviving poor weather (SLR, 2015). Noise disturbance is most likely during works involving loud, irregular noise such as piling. Noise disturbance is also possible during dredging (from the operating equipment); however, as this is of a similar noise level to existing vessels using the site some tolerance may reasonably be expected as the continual vessel presence is likely to be regular in character and therefore less likely to cause significant disturbance. A survey undertaken in 2013 (Royal Haskoning DHV, 2013) indicates that the intertidal area to the east of the Site comprises mudflats, scattered boulders and cobbles/pebbles. These habitats are used by some pSPA qualifying birds (eider, goldeneye and red-breasted merganzer) albeit in small numbers. The purpose of the pSPA is to protect the feeding grounds and sheltered waters on which the birds depend: whilst some pSPA birds have been recorded in the area the small numbers indicate that this is not an important feeding area. Significant disturbance impacts to pSPA birds are therefore considered unlikely for birds using the water adjacent to the site or using inter-tidal habitats to the east of the port.
Conclusion	No likely significant effect.
Changes in water quality	The Firth of Tay is described as being relatively shallow and partially mixed to well-mixed (Bates *et al*, 2004; Royal Haskoning DHV, 2013). The significant freshwater influence and macro-tidal (more than 4m tidal range) nature of the Firth, means that the residence time of water in the Firth is relatively short (2-15 days). This means that any material discharged to the Firth is rapidly diluted and discharged to sea (Royal Haskoning DHV, 2013). Changes in water quality can potentially occur as a result of pollution of surface water from fuel spills, the mobilisation of suspended solids within the coastal environment as a result of dredging (leading to impacts on turbidity and potentially dissolved oxygen levels), and release of sediment contamination as a result of seabed disturbance. Whilst it is likely that the increased dredging will re-suspend sediment within the water column, there are already high existing levels of suspended sediments as a result of natural processes of sediment suspension and transport within the Firth of Tay (Bates *et al*, 2004). On-going maintenance dredging and other port activities contribute to this, although their contribution is likely to be small. ERM (2019) sampled the sediments within Caledon East Wharf and Prince Charles Wharf in June 2019. Analysis of the sediments found that there are elevated concentrations of some metals and Polycyclic Aromatic Hydrocarbons (PAHs) within the dredged material above Action Level 1[5], consistent with historic industrial discharges to the Firth of Tay. No samples recorded concentrations of contaminants above Marine Scotland Action Level 2. The proposed development will involve the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. As dredging will take place intermittently within an

[5] Action Levels for metals, PCBs, TBT and PAHs are used by Marine Scotland to assess the suitability for disposal of sediments at sea.

	environment that is characterised by powerful tidal currents and a high suspended sediment load, it is considered that this is not likely to have a significant effect on birds or on the prey species upon which those birds depend.
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will not have a likely significant effect on this European Site and its interest features. In light of this it is necessary to carry out an 'in combination' assessment to see if there is any potential for the effects of this project, when combined with other projects, to give rise to likely significant effects on this designation.

Table 11

Site:	**Interest features:**
River Tay SAC	Qualifying interest features: Annex I habitats (not a primary reason for selection of this site): • Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea Annex II species (primary reason for selection of this site): • Atlantic salmon Annex II species (not a primary reason for site selection0 • Sea lamprey • Brook lamprey • River lamprey • Otter
Potentially adverse activity:	**Assessment:**
Physical habitat loss	The nearest part of the River Tay SAC is 26 km to the west of the proposed development Site and consequently there is no mechanism by which direct habitat loss can occur. Habitat loss arising from the proposed development is only likely to impact on the SAC if the area in the vicinity of the Site is 'functionally linked' to the SAC, i.e. it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status. The qualifying features of the SAC include three migratory fish species that use the Firth of Tay when moving between the freshwater and marine environments: Atlantic salmon, river lamprey and sea lamprey. Whilst otter is a highly mobile species it is unlikely that the estuarine habitat in the vicinity of the Site is functionally linked to the SAC. During the construction and operation phases of the development, habitat loss will be limited to benthic material (primarily as a result of dredging work) and small areas of intertidal habitats (the intertidal area adjacent to the Site mostly consists of rock armour, sheet piling, concrete slabs etc). It is unlikely that these areas provide important habitat for migratory fish species taking into account the current levels of disturbance associated with the operating port. As set out in the ERM (2019) BPEO Report, the proposal includes dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively'. 'The proposed dredging schedule will be dependent on the licence award date, dredger availability and construction

	periods. The length of the campaign will be largely dependent on when the dredger is available, and it is possible that dredging could take place at different times depending on the work required to create the berths. The scale of the proposed dredging and its' intermittent nature lead to the conclusion that significant disturbance of migratory fish is unlikely. The Site is located adjacent to the Firth of Tay at a point where it is 1.4 km wide. Consequently the predicted habitat loss is not likely to impact on the ability of fish to migrate upstream and downstream through the Firth.
Conclusion	No likely significant effect.
Physical habitat damage	The disturbance and damage of habitats during the construction and operation phases are expected to have similar impacts as those described above when considering the impacts arising from habitat loss.
Conclusion	No likely significant effect.
Disturbance	Underwater noise, e.g. from driven piling, could affect migratory fish by causing disturbance, which may result in increased mortality or displacement of animals. Levels of noise and vibration in close proximity to marine piling activities may cause traumatic hearing damage to fish (SLR, 2015). Displacement effects can potentially be wide ranging due to the propagation of noise through water. Piling will be required as part of the proposed development, which will be a source of noise within the marine environment. Experimental research shows that in a contained situation Atlantic salmon did not perceive pile driving playback noise as a stressor. One explanation that is provided centres on Atlantic salmon hearing ability: this species is particularly sound insensitive lacking specialist hearing mechanisms (Harding et al, 2016). The author's also observe that 'the lack of such mechanisms reduces the fish's sensitivity and bandwidth to detect a noise stimulus, resulting in a poorer ability to distinguish specific acoustic cues from background noise'. Salmon can detect and respond to underwater noise and their audiograms have been well documented (Nedwell et al., 2004). Salmon are considered to be hearing generalists that are able to hear frequencies in the low to infrasound ranges at threshold levels of around 95 to 130 dB re 1µPa in the region of 10Hz to 380Hz. Small fish i.e. smolts and exceptionally small grilse are generally considered to be most vulnerable to noise impacts (Hastings and Popper, 2005). There are no reported audiograms of lamprey: however, given that they lack any specialist hearing structures, they are considered to be hearing generalists. Studies have shown that sea lamprey respond to frequencies between 20 and 100 Hz (Lenhardt and Sismour, 1995). Mickle *et al* (2018) found that sea lamprey detected tones of 50–300 Hz with equal sensitivity, but did not detect sounds above 300 Hz. In a laboratory experiment, sea lamprey responded to sound in the range of 50–200 Hz, with a general increase in swimming and a decrease in resting behaviours at both juvenile and adult stages relative to no-sound controls. This indicates that sea lamprey may respond to noise stimuli, such as that derived from marine piling. Noise impacts are also possible from increased dredging operations (from operational equipment), although these are not considered likely to be any greater than noise impacts from existing maintenance dredging and other port-related activity. The Port of Dundee currently has an average of 746 vessel movements per annum (ERM, 2019), which means that baseline disturbance levels are already high. The Site is located adjacent to the Firth at a point where it is 1.4 km wide. The predicted noise and vibration is not expected to impact significantly on

	the ability of fish to migrate upstream and downstream through the Firth; this conclusion takes into account the relatively low sensitivity of salmon and lampreys, the width of the Firth of Forth and the high levels of baseline disturbance that already occur in the absence of development.
Conclusion	No likely significant effect.
Changes in water quality	The Firth of Tay is described as being relatively shallow and partially mixed to well-mixed (Bates *et al*, 2004; Royal Haskoning DHV, 2013). The significant freshwater influence and macro-tidal (more than 4m tidal range) nature of the Firth, means that the residence time of water in the Firth is relatively short (2-15 days). This means that any material discharged to the Firth is rapidly diluted and discharged to sea (Royal Haskoning DHV, 2013). Changes in water quality can potentially occur as a result of pollution of surface water from fuel spills, the mobilisation of suspended solids within the coastal environment as a result of dredging (leading to impacts on turbidity and potentially dissolved oxygen levels), and release of sediment contamination as a result of seabed disturbance. Whilst it is likely that the proposed dredging will re-suspend sediment within the water column, there are already high existing levels of suspended sediments as a result of natural processes of sediment suspension and transport within the Firth of Tay (Bates *et al*, 2004). On-going maintenance dredging and other port activities contribute to this. ERM (2019) sampled the sediments within Caledon East Wharf and Prince Charles Wharf in June 2019. Analysis of the sediments found that there are elevated concentrations of some metals and Polycyclic Aromatic Hydrocarbons (PAHs) within the dredged material above Action Level 1[6], consistent with historic industrial discharges to the Firth of Tay. No samples recorded concentrations of contaminants above Marine Scotland Action Level 2. The proposed development will involve the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. As dredging will take place intermittently within an environment that is characterised by powerful tidal currents and a high suspended sediment load, it is considered that this is not likely to have a significant effect on the SAC.
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will not have a likely significant effect on this European Site and its interest features. In light of this it is necessary to carry out an 'in combination' assessment to see if there is any potential for the effects of this project, when combined with other projects, to give rise to likely significant effects on this designation.

[6] Action Levels for metals, PCBs, TBT and PAHs are used by Marine Scotland to assess the suitability for disposal of sediments at sea.

Table 12

Site:	**Interest features:**
Moray Firth SAC	Qualifying interest features: Annex I habitats (not a primary reason for selection of this site): • Sandbanks which are slightly covered by sea water all the time Annex II species (primary reason for selection of this site): • Bottlenose dolphin
Potentially adverse activity:	**Assessment:**
Physical habitat loss	The nearest part of the Moray Firth SAC is 138 km to the north of the proposed development Site and consequently there is no mechanism by which direct habitat loss can occur. Habitat loss arising from the proposed development is only likely to impact on the SAC if the area in the vicinity of the Site is 'functionally linked' to the SAC, i.e. it provides an important role in maintaining or restoring the population of qualifying species at favourable conservation status. The qualifying features of the SAC include bottlenose dolphin that are understood to occasionally use the Firth of Tay (Royal Haskoning DHV, 2013). Consequently it is possible that the Firth is functionally linked to the SAC. The bottlenose dolphins found in the Moray Firth SAC are part of a Scottish east coast population of approximately 200 animals that ranges south past Aberdeen to the Firths of Tay and Forth (Quick et al, 2014). A review of population data indicates that in the Tayside and Fife area dolphins were encountered more often in and around the Firth of Tay in waters less than 20 m deep and within 2 km of the coast. The Firth of Tay has consistently high encounter rates of bottlenose dolphins over the years: between 71 and 91 bottlenose dolphins from the east coast population were estimated to be using the Tay area during 2009-2013, representing approximately 35-46% of the total Scottish east coast population. The data indicate that dolphins are regularly recorded in the Firth of Tay in the vicinity of Tayport (the data do not provide any finer resolution than this). As set out in the ERM (2019) BPEO Report, the proposal includes the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. The proposed dredging schedule will be dependent on the licence award date, dredger availability and construction periods. The length of the campaign will be largely dependent on when the dredger is available, and it is possible that dredging could take place at different times depending on the work required to create the berths. During the construction and operation phases of the development, habitat loss will be limited to benthic material (primarily as a result of dredging work) and very small areas of intertidal/shoreline habitats (the intertidal area adjacent to the Site mostly consists of rock armour, concrete slabs etc.). It is highly unlikely that these areas provide important habitat for bottlenose dolphin or their prey species. The Site is located adjacent to the Firth at a point where it is 1.4 km wide. Consequently the predicted habitat loss is not likely to impact on the ability of dolphin to use the Firth.
Conclusion	No likely significant effect.
Physical habitat damage	The disturbance and damage of habitats during the construction and operation phases are expected to have similar impacts as those described

	above when considering the impacts arising from habitat loss.
Conclusion	No likely significant effect.
Disturbance	Underwater noise, e.g. from driven piling, could affect bottlenose dolphin by causing disturbance, which may result in increased mortality or displacement of animals. Levels of noise and vibration in close proximity to marine piling activities may cause traumatic hearing damage (SLR, 2015). Displacement effects can potentially be wide ranging due to the propagation of noise through water. Marine piling will be required as part of the proposed development, which will be a source of marine noise. Graham *et al* (2017) found that bottlenose dolphins were not excluded from sites in the vicinity of impact piling or vibration piling; nevertheless, some small effects were detected. Bottlenose dolphins spent a reduced period of time in the vicinity of construction works during both impact and vibration piling. The probability of occurrence of this species was also slightly less during periods of vibration piling. David (2006) notes that pile driver-generated noise has the potential to affect dolphin populations adversely as it is detectable up to 40 km from the source. At 9 kHz, this noise is capable of masking strong vocalisations within 10–15 km and weak vocalisations up to approximately 40 km. Similarly Bailey *et al* (2010) report that for bottlenose dolphins, auditory injury would only have occurred within 100 m of pile-driving works and behavioural disturbance, defined as modifications in behaviour, could have occurred up to 50 km away. Noise impacts are also possible from the dredging operations (from the operation of equipment), although these are not considered likely to be any greater than noise impacts from existing maintenance dredging and other port-related activity. The Port of Dundee currently has an average of 746 vessel movements per annum (ERM, 2019), which will result in high baseline disturbance. The Site is located adjacent to the Firth at a point where it is 1.4 km wide. The predicted noise and vibration may impact on dolphin resulting in their displacement from the Firth; in the absence of noise data (and discounting any proposed mitigation measures) a precautionary approach has been adopted and the proposed work is assumed to result in a likely significant effect. As mentioned in Paragraph 3.7 of this Report the Moray Firth SAC has only been assessed due to the potentially functionally-linked habitat. Therefore, whilst a likely significant effect has been identified, it is reasonable to say the likelihood is low and this conclusion has only been reached by applying the precautionary principle.
Conclusion	Likely significant effect.
Changes in water quality	The Firth of Tay is described as being relatively shallow and partially mixed to well-mixed (Bates *et al*, 2004; Royal Haskoning DHV, 2013). The significant freshwater influence and macro-tidal (more than 4m tidal range) nature of the Firth, means that the residence time of water in the Firth is relatively short (2-15 days). This means that any material discharged to the Firth is rapidly diluted and discharged to sea (Royal Haskoning DHV, 2013). Changes in water quality can potentially occur as a result of pollution of surface water from fuel spills, the mobilisation of suspended solids within the coastal environment as a result of dredging (leading to impacts on turbidity and potentially dissolved oxygen levels), and release of sediment contamination as a result of seabed disturbance. Whilst it is likely that the proposed dredging will re-suspend sediment within the water column, there are already high existing levels of suspended sediments as a result of natural processes of sediment suspension and

	transport within the Firth of Tay (Bates *et al*, 2004). On-going maintenance dredging and other port activities contribute to this. ERM (2019) sampled the sediments within Caledon East Wharf and Prince Charles Wharf in June 2019. Analysis of the sediments found that there are elevated concentrations of some metals and Polycyclic Aromatic Hydrocarbons (PAHs) within the dredged material above Action Level 1[7], consistent with historic industrial discharges to the Firth of Tay. No samples recorded concentrations of contaminants above Marine Scotland Action Level 2. The proposed development will involve the dredging and disposal of a maximum of 75,000 m^3 of dredged material as part of a capital dredge within Caledon East Wharf and Prince Charles Wharf. This dredge would increase the depth within the wharves to 9.5 m and 10 m below Chart Datum respectively. As dredging will take place intermittently within an environment that is characterised by powerful tidal currents and a high suspended sediment load, it is considered that this is not likely to have a significant effect on the qualifying features of the SAC (bottlenose dolphin).
Conclusion	No likely significant effect.
Overall conclusion	The development of the Site alone will have a likely significant effect on this European Site and its interest features. Appropriate Assessment is therefore required.

Summary of Likely Significant Effects

5.1 The assessment of the project alone has concluded that the proposed development will have a likely significant effect on various European sites and their interest features. A summary of the assessment of likely significant effect is presented in Table 13. This assessment has been carried out in the absence of mitigation measures and is therefore compliant with the requirements of the judgement People Over Wind and Sweetman (12 April 2018, C-323/17). The conclusion that the proposed work will result in likely significant effects means that this HRA needs to progress to the next stage, which is the appropriate assessment.

[7] Action Levels for metals, PCBs, TBT and PAHs are used by Marine Scotland to assess the suitability for disposal of sediments at sea.

Table 13: Summary of the assessment of likely significant effect

European site	**Is the proposed development likely to have a significant effect on the qualifying features through these impact mechanisms?**				
	Habitat loss	**Habitat damage**	**Disturbance**	**Water Quality**	**Air Quality**
Firth of Tay and Eden Estuary SAC	No	No	Yes	No	No
Firth of Tay and Eden Estuary SPA	No	No	No	No	No
Firth of Tay and Eden Estuary Ramsar	No	No	No	No	No
Outer Firth of Forth and St Andrews Bay pSPA	No	No	No	No	No
River Tay SAC	No	No	No	No	No
Moray Firth SAC	No	No	Yes	No	No

In-combination assessment

5.2 Regulation 48(1)a of the Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations') requires that the screening assessment considers the effects of a development alone and in combination with other plans and projects. In this section the impacts of the development are considered in combination with other plans and projects for those impact mechanisms where a conclusion of 'no likely significant effect alone' has been reached. The only impact mechanism where an 'in combination' effect is likely relates to marine noise resulting from piling work.

5.3 A search has been carried out on the Dundee City Council planning website[8] for planning applications that have been submitted for works that have the potential to impact on the Firth of Tay. No active applications or consented activities that have yet to be completed have been identified.

5.4 A search has also been carried out of Marine Scotland[9] active licences and current licence applications and there are none within the Firth of Tay that have the potential to have an in-combination effect with the proposed development. The in-combination assessment has also considered other existing potential sources of marine noise. There is existing vessel traffic associated with the Port of Dundee, which is the main port in the Firth of Tay.

5.5 In conclusion, the in-combination assessment has not identified any plans or projects that, when considered alongside the proposed development at the Port of Dundee, are likely to have a significant effect on a European site. Consequently the summary assessment presented in Table 13 remains unchanged.

[8] http://idoxwam.dundeecity.gov.uk/idoxpa-web/, accessed 23 October 2019.
[9] http://marine.gov.scot/marine-projects, accessed 23 October 2019.

Conclusion

5.6 The screening assessment, which has been carried out in accordance with Regulation 48(1)a of the Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations'), has concluded that, in the absence of mitigation, the proposed development is likely to have a significant effect on two sites of European importance:

- Firth of Tay and Eden Estuary SAC – the proposed development is likely to have a significant effect on harbour seal as a result of noise related disturbance from marine piling.
- Moray Firth SAC – the proposed development is likely to have a significant effect on bottlenose dolphin as a result of noise related disturbance from marine piling. However, as mentioned in Paragraph 3.7 of this Report the Moray Firth SAC has only been assessed due to the potentially functionally-linked habitat. Therefore, whilst a likely significant effect has been identified, it is reasonable to say the likelihood is low and this conclusion has only been reached by applying the precautionary principle.

5.7 As the proposed development is not directly connected with or necessary to the management of either European site (Regulation 48(1)b) it is concluded that it is necessary to make an appropriate assessment of the implications for the site in view of that site's conservation objectives (Regulation 48(1)).

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7 Figures

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LEGEND

Site boundary

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PROJECT TITLE

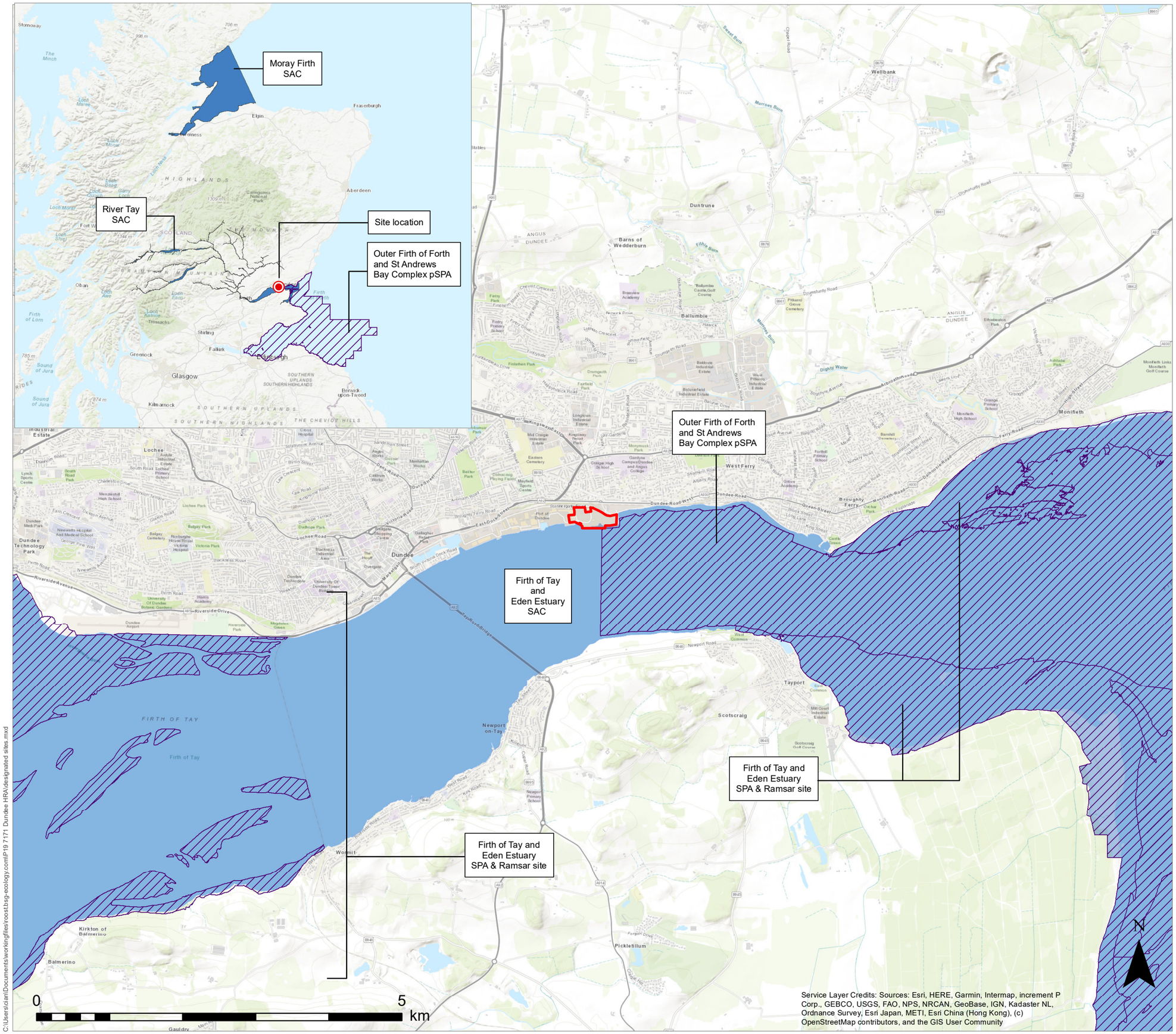
DUNDEE EAST REDEVELOPMENT HRA SCREENING

DRAWING TITLE

Figure 1: Location plan

DATE: 25.09.2019 CHECKED: SB SCALE: 1:20,000

DRAWN: COH APPROVED: SB VERSION: 1.0



LEGEND

- Site boundary
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

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JOB REF: P19-717

PROJECT TITLE

DUNDEE EAST REDEVELOPMENT HRA SCREENING

DRAWING TITLE

Figure 2: European sites

DATE: 26.09.2019 CHECKED: SB SCALE: 1:50,000

DRAWN: COH APPROVED: SB VERSION: 1.2