Natura Impact Statement

East Meath – North Dublin Grid Upgrade

March 2024

EirGrid

Contents

Glossary of Terminology, Abbreviations and Acronyms

Term, Abbreviation or Acronym	Description
AA	Appropriate Assessment
AESI	Adverse Effects on Site Integrity
AIS	Air Insulated Switchgear
B	Breeding
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology And Environmental Management
CO	Conservation Objectives
cSAC	Candidate Special Area of Conservation
DHLGH	Department Of Housing, Local Government and Heritage
DoEHLG	Department Of Environment, Heritage and Local Government
EC	European Commission
EEA	European Environment Agency
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
GIS	Gas Insulated Switchgear
HDD	Horizontal Directional Drilling
HVAC	High-Voltage Alternating Current
IFI	Inland Fisheries Ireland
IROPI	Imperative Reasons of Overriding Public Interest
kV	Kilovolt
LSE	Likely Significant Effects
MIFI	Member Of The Institute Of Fisheries Management
MRSB	Member Of The Royal Society Of Biology
NBDC	National Biodiversity Data Centre
NIS	Natura Impact Statement
NPAD	National Planning Application Database
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
OPR	Office of The Public Regulator
pSPA	Potential Special Protection Area
RC	Reinforced Concrete
QI	Qualifying Interest
SAC	Special Areas of Conservation
SPA	Special Protection Areas
TCC	Temporary Construction Compound
TII	Transport Infrastructure Ireland
UGC	Underground Cable
W	Wintering
WFD	Water Framework Directive
ZoI	Zone of Influence

1. Introduction

1.1 Background

East Meath – North Dublin Grid Upgrade (hereafter referred to as the Proposed Development) will reinforce the electricity network between East Meath and North Dublin. The Proposed Development will help meet the growing demand for electricity in the east while also facilitating the transmission of increasing amounts of renewable electricity generated by windfarms. This growth of demand in the east is due to increased economic activity and the planned connection of new data centres and other industrial users in the region. The Proposed Development will strengthen the electricity network in the east of Meath and the north of Dublin to improve the transfer of power across the existing transmission network.

The Proposed Development includes approximately 37.5 kilometres (km) of new 400 kilovolt (kV) underground cable circuit (also referred to as the proposed cable route) between the existing Woodland Substation in the townland of Woodland in County Meath, and the existing Belcamp Substation in the townlands of Clonshagh and Belcamp in Fingal, County Dublin. The Proposed Development will also involve works in the substations to facilitate the connection of the underground cable circuit to the electrical grid.

EirGrid appointed Jacobs as Consultants for the Proposed Development. As part of this appointment, Jacobs was required to produce a Screening Report for Appropriate Assessment (AA) of the Proposed Development (included as a standalone document in the planning application pack). The conclusion of the Screening for AA is that in the absence of mitigation measures it cannot be excluded on the basis of objective evidence, that there will be Likely Significant Effects (LSEs) from the Proposed Development, alone or in-combination with other plans or projects, on the following 14 European sites in view of the conservation objectives of those sites: Malahide Estuary Special Area of Conservation (SAC), Baldoyle Bay SAC, Malahide Estuary Special Protection Area (SPA), Baldoyle Bay SPA, North-West Irish Sea SPA, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Rogerstown Estuary SPA, Ireland's Eye SPA, Lambay Island SPA, Skerries Islands SPA, River Nanny Estuary and Shore SPA, Boyne Estuary SPA, and Dundalk Bay SPA. Therefore, progression to AA was required to assess the implications of the Proposed Development, individually or in combination with other plans or projects, against the conservation objectives of the European sites identified in the Screening for AA stage and the potential for adverse effects on the integrity of these European sites. The scientific assessment in support of the AA is documented within this Natura Impact Statement (NIS) which contains the information required for the competent authority (in this instance An Bord Pleanála) to undertake an AA in respect of the Proposed Development. The location of the Proposed Development is shown in Image 1.1.

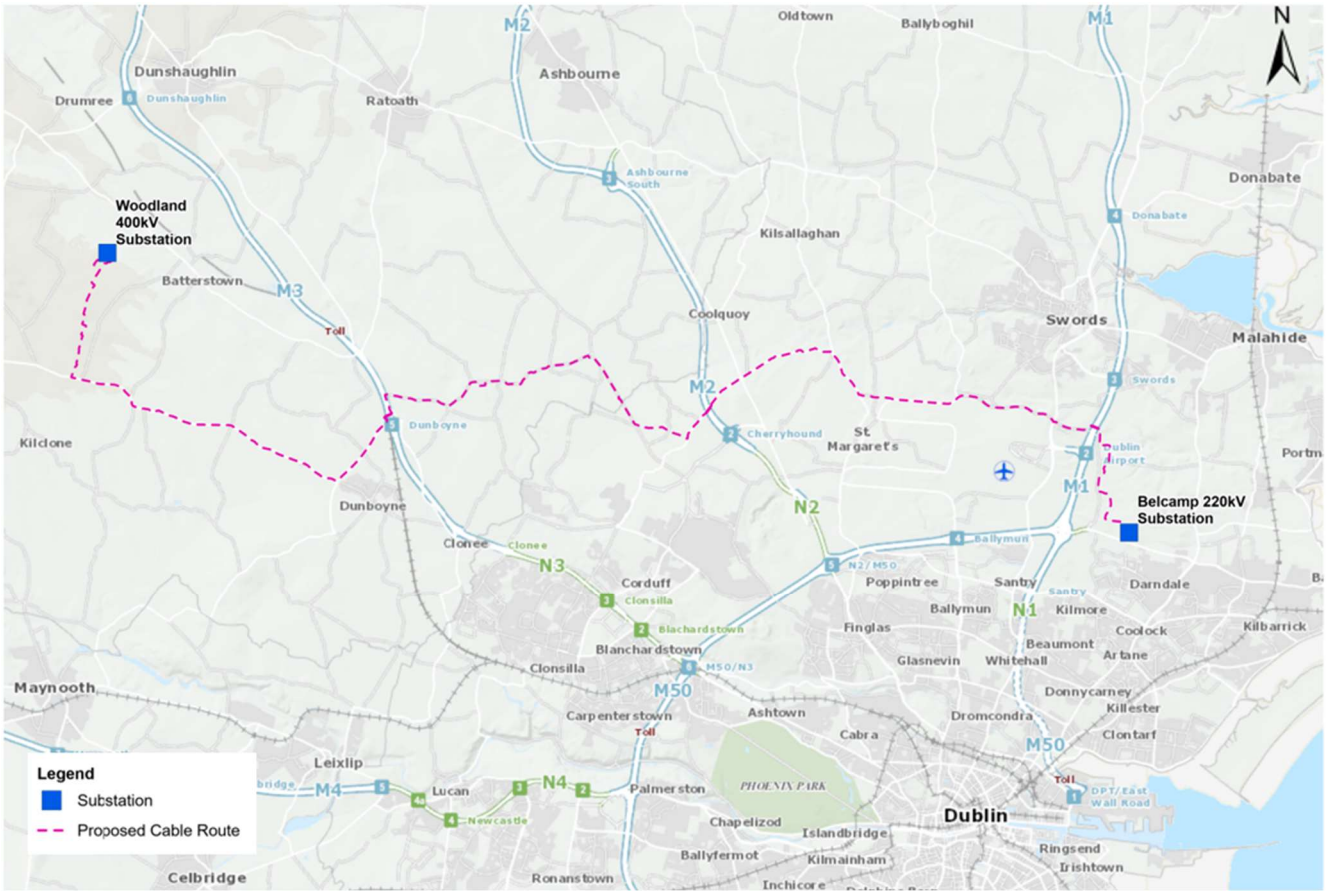

Image 1.1: Location of the Proposed Development

1.2 Description of the Proposed Development

1.2.1 Project Description

The Proposed Development consists of the following principal elements:

A. Installation of an underground cable circuit, approximately 37.5km in length, connecting Woodland Substation (400kV) in the townland of Woodland in County Meath, and Belcamp Substation (220kV) in the townlands of Clonshagh and Belcamp in Fingal. The development of the underground cable circuit will include the following:
   - Construction of a trench of approximately 1.5m (metre) in width and approximately 1.3m in depth in the public road (approximately 26km) and approximately 1.8m in depth in private lands (approximately 11.5km) in which the underground cable circuit is laid in flat formation, with associated above ground route marker posts. Route marker posts will be located at field boundaries where the proposed underground cable circuit is laid in private land, at regular intervals in road verges when the proposed underground cable circuit is in-road, in road verges where the proposed underground cable circuit crosses any roads, and at Horizontal Directional Drilling (HDD) crossing locations;
   - Construction of 49 Joint Bays (on average every 750m), primarily in the public roads, each approximately 10m in length, 2.5m in width and 2.5m in depth, with adjacent communication chambers and link boxes, along the full alignment of the underground cable circuit. Where the Joint Bays are located off-road, permanent hardstanding areas will be created around the Joint Bays;
   - The laying of communication links and fibre optic cables between both substations, running in the same trench as the underground cable circuit;

- The provision of seven Temporary Construction Compounds (TCCs) located along the proposed cable route and adjacent to substations – sizes for each of the seven TCCs ranging from approximately 0.8ha to 1.6ha;
- The provision of a Temporary HDD Compound at both the reception and launch locations for three HDD motorway crossings, (i.e., six temporary HDD Compounds in total), and associated laydown area for each HDD crossing (i.e., three laydown areas in total) - sizes for each of the six HDD Compounds (plus laydown area where applicable) ranging from approximately 0.15ha to 0.45ha;
- The provision of temporary Passing Bays during construction at certain Joint Bay locations, each approximately 95m in length and 5.5m in width;
- The laying of unbound temporary access tracks, 5m wide in private lands (approximately 12km in total length);
- The laying of 12 unbound, permanent access tracks, 4m wide in private land (approximately 4km in total length);
- All associated water, rail, road, and utility underground crossings using either trenchless drilling or open cut techniques as appropriate for the particular crossing; and
- All associated and ancillary above and below-ground site development works, including works comprising or relating to permanent and temporary construction and reinstatement, roadworks, utility diversions and site and vegetation clearance.

B. Upgrades to the existing 400kV Woodland Substation in the townland of Woodland in County Meath. This will include:
   - Installation of a 400kV feeder bay and associated electrical shunt reactor (approximately 8m in height);
   - Installation of insulators, instrument transformers, overhead conductors, disconnectors, circuit breakers, surge arrestors (up to 12.6m in height) in order to connect the bay to the busbar;
   - Installation of two gantries, 25m in height, with one 3m tall lightning rod on top of each gantry; and
   - All ancillary site development works including site preparation works, underground cabling, drainage and earthgrid, as required to facilitate the Proposed Development.

C. Upgrades to the existing 220kV Belcamp Substation in the townlands of Clonshagh and Belcamp in Fingal. This will include:
   - Construction of a new steel framed and clad building (73m long, 17.8m wide by 16m high) to house new 400kV Gas Insulated Switchgear (GIS) Hall, plus eight lightning rods on the roof of the GIS Hall (each 3m in height);
   - Installation of 400kV switchgear to facilitate the connection of the new underground cable circuit to the existing substation;
   - Installation of associated electrical shunt reactor (approximately 8m in height) with insulators, instrument transformers, overhead conductors, disconnectors, circuit breakers, surge arrestors (up to 12.8m in height) in order to connect the reactor to the cable circuit;
   - Installation of two lightning masts (each 15m in height);
   - Installation of a new 400/220kV transformer adjacent to the new GIS Hall and connections to the existing 220kV substation via cable circuit;
   - Internal access road; and
   - All ancillary site development works including site preparation works, site clearance and levelling, drainage, access tracks, and use of existing access points off Stockhole Lane and the R139.

1.2.2 Underground Cable

1.2.2.1 Overview

There are three key elements of the underground cable:

- **Cable Trench** - approximately 1.5m in width, 1.3m in depth in the public road and 1.8m in depth in private lands in which the underground cable is laid (see Image 1.2);
- **Joint Bay** - the cable will be delivered in lengths and will need to be connected (jointed) together. This will happen at the Joint Bays which are underground chambers located at various points on the route. Joint Bays are used as locations to pull the cables into the pre-installed ducts and to connect ('joint') together the individual cables and create a single, overall continuous circuit; and
- **Passing Bay** – a temporary traffic lane to allow traffic flow around Joint Bays while construction works are ongoing.

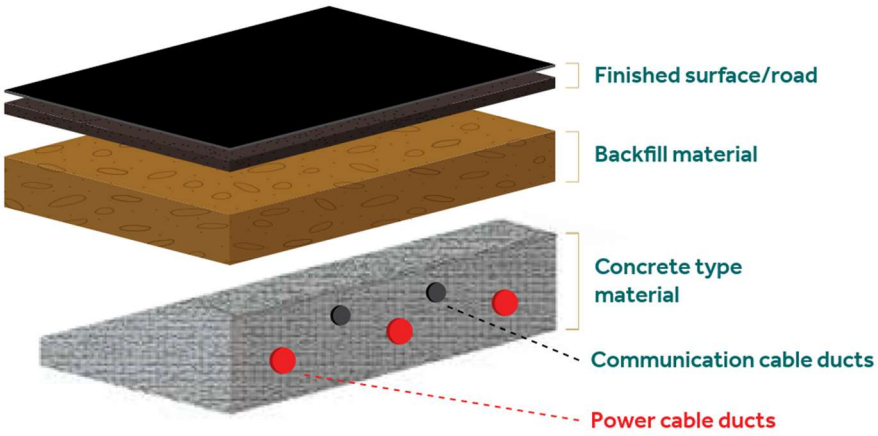

Image 1.2: Proposed Cable Trench

The width and depth of the cable trench can vary for crossing of watercourses or utilities and for other technical reasons.

The proposed underground cable will be delivered to site in individual lengths on cable drums. These lengths will be installed along the proposed cable route by using 'Joint Bays'.

Smaller buried chambers ('manholes') will be installed alongside various Joint Bay locations. There are two types:

- C2 chambers, which are used to join the fibre optic communication cables pulled into the pre-installed communications ducts; and
- Link box chambers, which are used to accommodate the link box (a device which earths the outer sheaths of the power cables).

As with any telecommunications facilities, these chambers will be provided with removable covers to facilitate access for ongoing maintenance and commissioning works. While the Joint Bays will not require ongoing maintenance, access from the surface is still required in the unlikely event of a cable failure needing replacement.

A Joint Bay under construction is shown in Image 1.3. An image of a reinstated road after Joint Bay construction is shown in Image 1.4. Passing Bays to facilitate road traffic management will be provided in 14 locations, where the Joint Bays are to be located in the road carriageway. There will be 33 Joint Bays along the public road / verge and 16 Joint Bays in off road sections where the Joint Bays will be in the road carriageways. A Passing Bay is shown in Image 1.5.

Image 1.3: Example of a Joint Bay During Construction

Image 1.4: Example of a Reinstated Road Over a Joint Bay (Darker Asphalt) with the C2 Chamber Cover Visible

Image 1.5: Example of a Passing Bay (Ensuring Road Traffic Continues Around a Working Area)

EirGrid has carefully considered the previous investments made by Meath and Fingal County Councils in maintaining and upgrading their road surfaces. The Electricity Supply Board (ESB) will establish key principles and agree appropriate methodologies with the County Councils for road reinstatement, where cable and associated infrastructure has been constructed. This could include reinstatement of road surfacing wider than the underground cable trench and Joint Bays, subject to planning approval by the planning authorities. This will be in accordance with the accepted standard for underground cable development; The Guidelines for Managing Openings in Public Roads (also known as The Purple Book) (Department of Transport, Tourism and Sport 2017). This can also be assured by way of an appropriate Condition of planning approval.

It is noted that, the specific location and design of Joint Bays and Passing Bays are subject to refinement at the detailed design stage, within the parameters set out in this planning application.

1.2.3 Substations

1.2.3.1 Woodland Substation

The Proposed Development at Woodland Substation will consist of the provision of new electricity transmission infrastructure, comprising the elements outlined Point B in Section 1.2.1 (refer to Figure 4.1 (Sheet 2) in Volume 4 of the Environmental Impact Assessment Report (EIAR), included in the planning application pack, for a graphic of the proposed works at Woodland Substation).

This infrastructure will be located within the extension to the hardstand compound at Woodland Substation which forms part of a planning application which has been recently granted permission (in April 2023) by Meath County Council (planning reference 221550).

1.2.3.1.1 Woodland Substation Construction Phase Activities

The proposed works at Woodland Substation will be undertaken in parallel with the proposed underground cable works ongoing between Woodland and Belcamp Substations. Proposed construction access for the works at Woodland Substation will be via the existing substation access road (i.e., Redbog Road, off Red Road). A TCC (TCC0) will be set up in the south-east corner of the substation and will provide site office and welfare facilities as well as material and plant storage for the substation works. There will be no access to the proposed cable route easement from this TCC.

The area for the proposed works in Woodland Substation will be cleared and shallow founded reinforced concrete bases will be installed for the new Air Insulated Switchgear (AIS) plant, as well as a Reinforced Concrete (RC) bund for the reactor. The AIS plant will be installed on the RC base slabs and associated connections installed. The reactor will be delivered to site as an abnormal load, with the appropriate measures to minimise any potential impacts to local traffic outlined in Appendix B (Construction Traffic Management Plan) of the Construction Environmental Management Plan (CEMP) (included as standalone documents in the planning application pack). The reactor will be slid into place on its bund off the delivery trailer. A mobile crane will be used to lift the new AIS plant into place. The proposed underground cable will be trenched across the substation from the south-west corner to connect to the new cable sealing end. Once the proposed underground cable has been installed, and the works at Belcamp and Woodland Substations have been completed, the whole system will be tested and commissioned.

1.2.3.2 Belcamp Substation

The Proposed Development, at Belcamp Substation, will consist of the provision of new electricity transmission infrastructure, comprising the elements outlined in Point C in Section 1.2.1 (refer to Figure 4.1 (Sheet 48) in Volume 4 of the EIAR, included in the planning application pack, for a graphic of the proposed works at Belcamp Substation).

This infrastructure will be located within the extension to the hardstand compound at Belcamp Substation which forms part of a planning application that has been recently granted permission (in December 2023) by Fingal County Council (planning reference F23A/0040).

1.2.3.2.1 Belcamp Substation Construction Phase Activities

The works at Belcamp Substation will be undertaken in parallel with the proposed underground cable construction works. A TCC (TCC6) will be established to the west of the substation accessed along a temporary access track off Stockhole Lane. This access track was recently constructed as part of the Belcamp to Shellybanks 220kV project. Construction materials will be delivered to site via the existing substation main entrance off the R139 Regional Road.

The area for the proposed works at Belcamp Substation will be prepared to install the new in-situ reinforced concrete bases for the proposed GIS hall, transformers and other miscellaneous AIS plant. The steel frame of the proposed HIS hall will be erected and then the roof and wall cladding added to make weather tight. A mobile crane will be used for the erection of the steel frame and cladding. The GIS equipment will be craned into place inside the proposed GIS hall using the gantry crane within the proposed GIS hall, and then the proposed GIS hall will be fitted out with all associated protection and control equipment, Low Voltage Alternating Current (LVAC) equipment etc. At the same time, the external AIS equipment will be installed and associated connections installed. The reactor and transformers will be delivered to site as abnormal loads with all the relevant traffic management requirements / restrictions in place for such abnormal loads (refer to Appendix B (Construction Traffic Management Plan) of the CEMP, which are included as standalone documents in the planning application pack). These will be slid into place directly from their transport trailer onto their RC bunds. The new 400kv cable will be trenched into the substation and under the RC perimeter wall to connect up to the AIS cable sealing end outside the proposed GIS hall. Once the new 400kV cable has been installed and tested, and the works at Woodland Substation completed, the whole system will be connected together, tested and then commissioned.

1.2.4 Cable Construction Phase Activities

The following sections describe the proposed Construction Phase activities associated with the installation of the new proposed underground cable. The laying of the new proposed underground cables is a standard construction technique undertaken by a range of utility and other services providers. The proposed underground cables will be installed in a flat formation in the following phases:

- Phase 1 – Installation of Joint Bays and Passing Bay structures;
- Phase 2 – Excavation and installation of cable ducts; and
- Phase 3 – Installation and jointing of cables.

Duct and Joint Bay installation are the most construction-intensive and invasive elements of cable route installation, as digging of a trench is required. For in-road cable laying, this phase will have the largest potential impact on traffic, including the potential need for rolling road closures (to through traffic) and diversions.

While the specifics of any cable-laying schedule are dependent upon the appointed contractor and the nature and location of the development, it is anticipated that the cable ducts will be laid in a road at a rate of 40m to 50m per day, although a reduced rate of 10m to 20m per day is anticipated in constrained sections of the proposed cable route, for example where existing utilities are present.

Joint Bays are proposed to be located at typical intervals of 750m along the proposed cable route of the Proposed Development. However, intervals between Joint Bays will vary (approximately 550m to 900m) depending on complexity of route alignment, site conditions and technical constraints. Joint Bays are anticipated to be installed in three days. Road reinstatement along the proposed cable route trench will follow the completion of the trenching and ducting, moving in sequence along the proposed cable route.

Cable pulling and jointing, which will commence when the trenching and ducting is well advanced along the proposed cable route, will be executed from the Joint Bay locations. Where this activity is likely to require a road closure, the provision of a Passing Bay at the location of the Joint Bay, where possible, will facilitate movement of traffic along the road by means of a signal-controlled lane adjacent to the Joint Bay.

Image 1.6 shows an example of a cable trench in a public road after installation of ducts and prior to backfilling. Marker boards can be seen within the trench prior to final reinstatement. Image 1.7 presents a reinstated road following laying of the underground cable circuit.

Image 1.6: Example of a Cable Trench In-Road with Cables in Flat Formation

Image 1.7: Example of a Reinstated Road Following the Laying of Underground Cables

1.2.5 Joint and Passing Bays

Joint Bays will consist of precast concrete walls and bases located below-ground. The Joint Bays will be 10m long x 2.5m wide x 2.5m deep overall. Lean mix concrete (blinding) will be used as a regulating layer to the underside of the chamber. The ducts will be installed to each end of the chamber, then checked, cleaned and sealed. The open concrete chamber will temporarily support the retained ground on the outside of the chamber during the ducting activities. Once these activities are completed, the open chamber will be temporarily backfilled with appropriate material and the road temporarily reinstated until cable installation. During cable installation, the Joint Bay will be reopened, and material within the chamber will be removed and replaced following completion of the cable installation.

The proposed Joint Bay locations are provided in Table 1.1.

Table 1.1. Proposed Joint Bay Locations

Joint Bay Number	Approximate Chainage	Approximate Distance from Previous Joint Bay	Passing Bay Provision	Side of Road Passing Bay to be Located	Maintenance Hardstanding Provision
1	812	812	Not required	-	Yes
2	1,560	748	Not required	-	Yes
3	2,382	822	Not required	-	Yes
4	3,083	701	Not required	-	Yes
5	3,807	724	Yes	South	Not required
6	4,587	780	Not required	-	Yes
7	5,390	803	Not required	-	Yes
8	6,022	632	Not required	-	Yes
9	6,821	799	Passing Bay not provided	-	Not required
10	7,646	825	Yes	North	Not required
11	8,358	712	Passing Bay not provided	-	Not required
12	9,088	730	Not required	-	Yes
13	9,936	848	Not required	-	Yes
14	10,771	835	Not required	-	Yes
15	11,577	806	Not required	-	Yes
16	12,417	840	Not required	-	Yes
17	13,163	746	Not required	-	Yes
18	13,764	601	Not required	-	Not required
19	14,549	785	Passing Bay not provided	-	Not required
20	15,327	778	Passing Bay not provided	-	Not required
21	15,920	593	Not required	-	Yes
22	16,719	799	Passing Bay not provided	-	Not required
23	17,518	799	Passing Bay not provided	-	Not required
24	18,366	848	Yes	South	Not required
25	19,037	671	Yes	South	Not required
26	19,749	712	Not required	-	Yes
27	20,613	864	Yes	South-west	Not required
28	21,393	780	Not required	-	Yes
29	22,036	643	Not required	-	Yes
30	22,593	557	Not required	-	Yes
31	23,349	756	Not required	-	Yes
32	24,215	866	Passing Bay not provided	-	Not required
33	25,100	885	Yes	South	Not required
34	25,875	775	Yes	South	Not required
35	26,481	606	Yes	North	Not required
36	27,111	630	Not required	-	Yes
37	27,929	818	Not required	-	Yes
38	28,767	838	Not required	-	Yes
39	29,484	717	Yes	North	Not required
40	30,187	703	Yes	North	Not required
41	30,940	753	Yes	North	Not required

Joint Bay Number	Approximate Chainage	Approximate Distance from Previous Joint Bay	Passing Bay Provision	Side of Road Passing Bay to be Located	Maintenance Hardstanding Provision
42	31,651	711	Yes	North	Not required
43	32,531	880	Yes	North	Not required
44	33,088	557	Not required	-	Yes
45	33,838	750	Yes	South	Not required
46	34,657	819	Not required	-	Yes
47	35,424	767	Not required	-	Yes
48	36,172	748	Not required	-	Yes
49	36,960	788	Not required	-	Yes

Passing Bays are short sections of temporary road around Joint Bays where insufficient space would otherwise have potentially resulted in closure of the road to traffic. The Passing Bays will include temporary traffic management arrangements, such as signage and traffic signals, as agreed with the relevant local authority. The proposed Passing Bay locations, of which there will be 14 in total, are outlined in Table 1.1.

The installation of a Passing Bay will require removing and temporarily storing topsoil in an area of land adjacent to the road. This material will be used for reinstatement of the ground at a later stage in the construction process. The Passing Bays will be subject to detailed design and constructed in accordance with the relevant local authority's requirements. The Passing Bay will be constructed to a similar finished road level to the existing roadway. Subject to detailed design, and site-specific conditions, this may require the placing and provision of fill material. Roadside drainage, including filter drains, drainage carrier pipes and drainage culverts, will be extended under Passing Bays using temporary measures, where required. Passing Bays will be designed to allow suitable runoff from the temporary road surface and to avoid ponding.

Image 1.8 illustrates the proposed arrangement of a Passing Bay and associated traffic management where the Joint Bay is located in the roadway. Image 1.9 illustrates the proposed arrangement of a construction platform and associated traffic management where the Joint Bay is located in the road verge. Image 1.3 shows an example of a Passing Bay that has been developed for other cable projects.

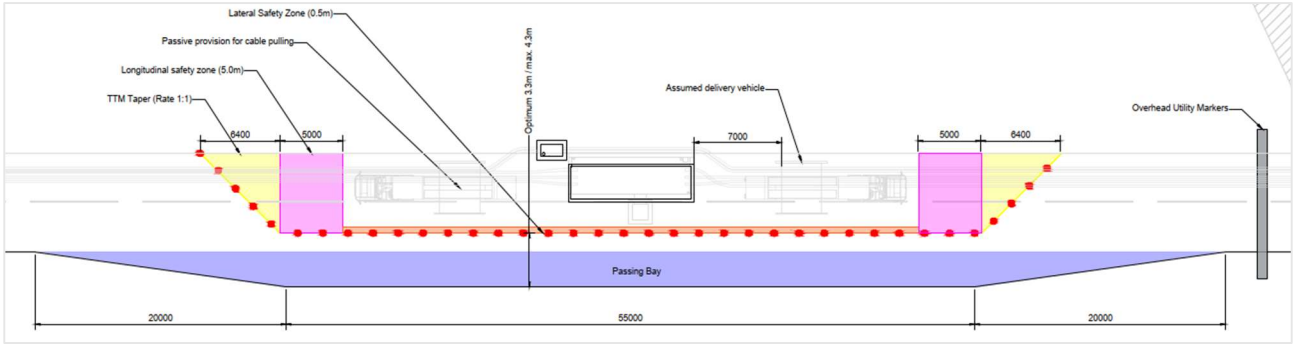

Image 1.8: Proposed Traffic Management and Passing Bay Arrangement for a Joint Bay in the Roadway (Indicative Layout)

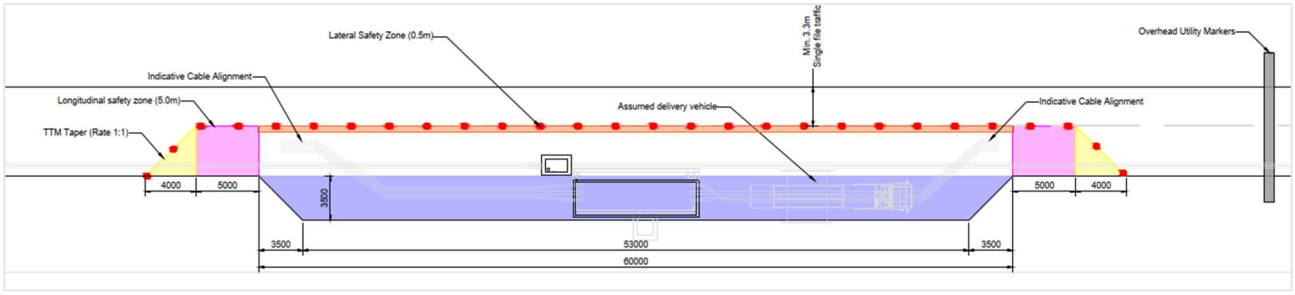

Image 1.9: Proposed Traffic Management and Construction Platform Arrangement for a Joint Bay in the Road Verge (Indicative Layout)

1.2.6 Watercourse Crossings

Where the proposed cable route is to cross rivers the open cut trenching method is planned (see Table 1.2). The rivers which are considered pathways to European sites, which have been screened in for Stage 2 Appropriate Assessment (see Section 4), are in bold. Open cut trenching is where excavation tales place through fields while in-road trenching is when excavation takes place within the existing road infrastructure rather than diverting off-road and crossing a water course. Where open cut trenching is carried out through watercourses, the water flow is temporarily diverted with pipes around the area of work and the watercourse is then reinstated after completion of works.

Table 1.2: Waterbodies and the Crossing Methodologies

Naming Convention (Waterbody WB)	Waterbody Name	Chainage	Location NGR	Proposed Crossing
WB01	TOLKA_020	1,250	N 94742 47221	Open cut
WB02	DUNBOYNE STREAM_010	2,175	N 94483 46404	Open cut / in-road
WB03	DUNBOYNE STREAM_010	10,800	O 00537 42674	Open cut / in-road
WB04	TOLKA_020	11,640	O 01119 43261	Open cut / in-road
WB05	TOLKA_020	12,550	O 01655 43968	Open cut
WB06	PINKEEN_010	16,100	O 03952 45039	N/A
WB07	PINKEEN_010	16,350	O 04095 44965	Open cut
WB08	**WARD_020**	17,750	O 05260 45264	Open cut / in-road
WB09	**WARD_010**	18,200	O 05634 45422	Open cut / in-road
WB10	**WARD_010**	18,200	O 05653 45452	Open cut
WB11	**WARD_010**	19,240	O 06599 45597	Open cut

Naming Convention (Waterbody WB)	Waterbody Name	Chainage	Location NGR	Proposed Crossing
WB12	**WARD_020**	20,450	O 07317 44650	Open cut
WB13	**WARD_020**	20,650	O 07378 44541	Open cut / in road
WB14	**WARD_020**	20,850	O 07489 44351	Open cut / in road
WB15	**WARD_030**	23,625	O 09528 44520	Open cut
WB16	**WARD_030**	24,600	O 10245 45153	Open cut / in road
WB17	**WARD_030**	24,750	O 10370 45217	Open cut / in road
WB18	**WARD_030**	25,310	O 10840 45522	Open cut / in road
WB19	**WARD_030**	26,180	O 11650 45815	Open cut
WB20	**WARD_030**	28,350	O 13141 44724	Open cut / potential in road
WB21	**WARD_030**	29,280	O 14066 44606	Open cut / in road
WB22	**SLUICE_010**	31,780	O 16415 44423	Open cut / in road
WB23	**MAYNE_010**	36,825	O 19003 42112	Open cut

A number of design options for open cut crossings were assessed; temporary watercourse diversions, fluming and over pumping. An exercise was undertaken to look at the required space needed to temporarily realign the channels during construction and this concluded that temporary realignment would not be feasible within the footprint of the Proposed Development due to the limited space available within the Planning Application Boundary and / or the presence of nearby infrastructure. Following consultation with Inland Fisheries Ireland (IFI) to-date, fluming was agreed to be the preferred option to over pumping. Where watercourses are flumed, the dry works area will be isolated by installing an impermeable barrier between the watercourse and the works area, as per consultation with IFI to-date. The impermeable barrier will be tailored to the watercourse in question. Techniques will include the use of inflatable dams, frame dams, or sandbags in smaller watercourses. For larger watercourses, water will be carried over or around the isolated dry works area. The appointed contractor will consult IFI prior to a final decision being made on water crossing techniques. The proposed fluming arrangement is illustrated in Image 1.10.

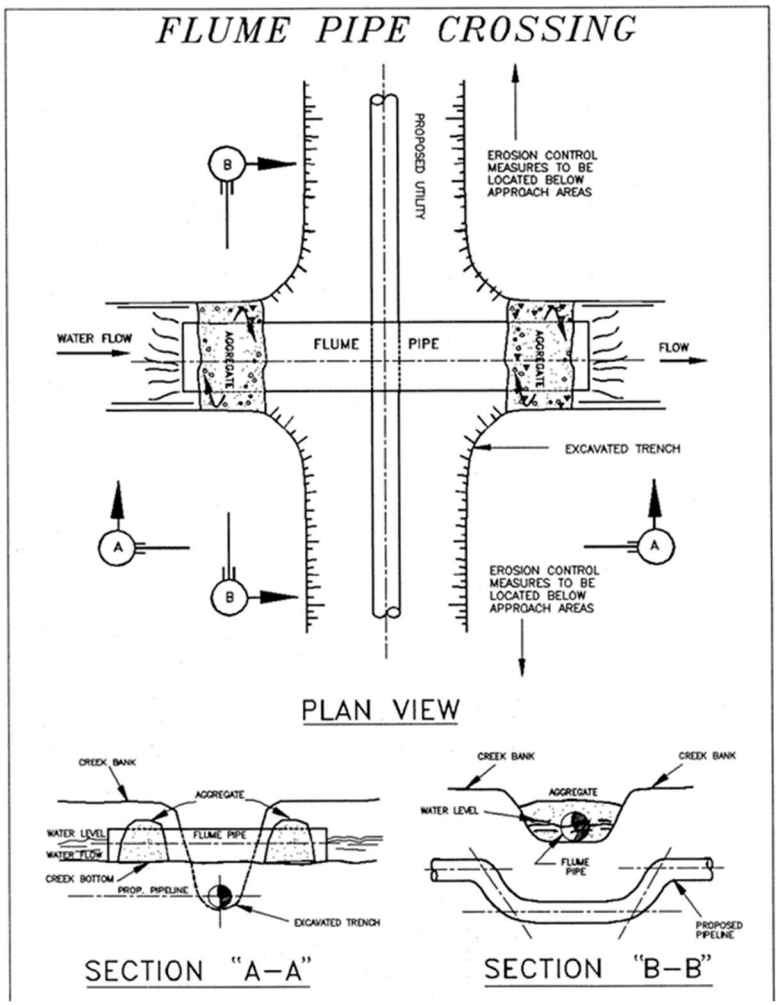

Image 1.10: Example Diagram of a Flume Pipe Crossing (Construction Industry Compliance Assistance Centre 1992)

For road trenching all works remain within the road and watercourses are not affected.

1.3 Legislative Context for Appropriate Assessment

Habitats and species of European importance are provided legal protection under the EU Habitats Directive 92/43/EEC (the Habitats Directive) and the EU Birds Directive 2009/147/EC (the Birds Directive). The Directives protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network (hereafter referred to as European sites[1]). European sites comprise Special Areas of Conservation (SACs[2]) and Special Protection Areas (SPAs[2]).

The Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) have been transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011). Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites.

1 The term Natura 2000 network was replaced by 'European site' under the EU (Environmental Impact Assessment and Habitats) Regulations 2011 S.I. No. 473 of 2011.

2 Candidate SACs (cSACs) and potential SPAs (pSPAs) are afforded the same protection as SACs and SPAs and are therefore assessed in the same manner within this report.

Article 6(3) establishes the requirement for AA:

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

Article 6(4) states:

> *"If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."*

Section 177U(4)(5) of the Planning and Development Act 2000 (as amended) sets out the AA screening test for planning applications, as follows:

> *"(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.*
>
> *(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site."*

1.4 Stages in Appropriate Assessment

The stages of AA area as follows:

- **Stage 1 Screening**: The purpose of the screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in-combination with other plans or projects, could have significant effects on a European site in view of the site's conservation objectives. All potential effects between activities associated with the plans or projects and the ecological components of European sites must be considered. This includes potential effects on mobile species, notably birds, mammals, invertebrates and migratory fish. There is no necessity to establish such an effect; it is merely necessary for the competent authority to determine that there may be such an effect. The threshold at this first stage is a very low one and operates as a trigger in order to determine whether a Stage 2 AA must be undertaken by the competent authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required. Measures intended to avoid or reduce the harmful effects of the proposed development on European sites (i.e. "mitigation measures") cannot be taken into account in the screening stage appraisal. Measures intended to avoid or reduce the harmful effects of the proposed development on European sites (i.e. "mitigation measures") or best practice measures cannot be taken into account in the screening stage appraisal; and
- **Stage 2 Appropriate Assessment:** If it cannot be excluded, on the basis of objective information, that the plan or project, individually or in combination with other plans or projects, would have a significant effect on a European site, the plan or project must be taken forward to the next stage of the process and an AA must be carried out. The competent authority must carry out a focussed and

detailed examination, analysis and evaluation of the effect of the project or plan on the integrity of the European site(s), specifically it must be determined if the project or plan will adversely affect the integrity of a European site(s) either individually or in-combination with other plans and projects in view of the conservation objectives of the site(s). Case law has established that such an Appropriate Assessment, to be lawfully conducted, in summary:

I. Must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;

II. Must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and

III. May only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where the competent authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to the next stages."

For projects, the AA process is documented within a Natura Impact Statement (NIS).

Following AA, including mitigation proposals, if Adverse Effects on Site Integrity (AESI) remain, and the project/plan is to be progressed, an Assessment of Alternative Solutions is required under the provisions of Article 6(4) of the Habitats Directive. This process examines the alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site. If no suitable alternatives exist, or all alternatives would result in adverse effects on the integrity of a European site, then the project will move on to the next stage of the process.

Where an Assessment of Alternative Solutions fails to identify any suitable alternatives, then for a project or plan to be progressed it must demonstrate that it must nevertheless be carried out for imperative reasons of overriding public interest (IROPI) in accordance with Article 6(4) of the Habitats Directive. If, following an assessment of IROPI, it is deemed that the project or plan should proceed, all compensatory measures necessary to ensure the protection of the overall coherence of the European site must be put in place in accordance with Article 6(4) of the Habitats Directive.

1.5 Statement of Authority

This report has been prepared jointly by May Higgins and Louis Peacock, and checked and reviewed by Dr Susie Coyle.

May Higgins is an Ecologist with two years' experience in ecological consultancy. She holds a first-class honours degree in Zoology from University College Dublin. She is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has authored several AA Screening Reports, Natura Impact Statements, CEMPs, and Preliminary Ecological Constraints Reports (PECR). She has carried out multiple field surveys for protected species and habitats on a variety of large and small infrastructure projects.

Louis Peacock is an Ecologist with a 2.5 years' experience in ecological consultancy and holds a 2nd class honours degree in Wildlife Biology, Munster Technological University, Tralee Campus. Louis is a Qualifying member of CIEEM and has carried out multiple field surveys for both protected species and habitats for a variety of project types ranging from large infrastructure, renewable energy and biodiversity enhancement projects. He has also authored AA screenings and Natura Impact Statements on a variety of small to large infrastructure projects.

The report was checked and reviewed by Dr Susie Coyle, a Senior Associate Director of Ecology. Susie holds a BSc (Hons) in Aquatic Bioscience and a PhD in fish biodiversity from the University of Glasgow. She is a Chartered full

Member of the Royal Society of Biology (MRSB), a full Member of CIEEM and a Member of the Institute of Fisheries Management (MIFI). Susie has coordinated Jacobs' ecologists both in Ireland and in the UK and has experience of multiple ecological survey techniques and associate reporting. She has sixteen years of consultancy experience in aquatic and terrestrial ecology with over 20 years' experience of field surveys and environmental sampling techniques. One of Susie's main roles is the check and review of reports including AA Screening Reports and Natura Impact Statements.

1.6 Purpose and Structure of this Report

This Report provides information to support An Bord Pleanála, as the relevant competent authority, in undertaking AA of the Proposed Development.

The structure of the report is as follows:

- **Section 1:** Introduction including Proposed Development Description, legislative context and the statement of authority;
- **Section 2:** Overview of the AA methodology including the guidance and consultation used in compiling this report;
- **Section 3:** Description of the baseline environment;
- **Section 4:** Summary of Screening for Appropriate Assessment;
- **Section 5**: Information for Appropriate Assessment including information on European sites, potential impacts, and mitigation measures where required;
- **Section 6**: Mitigation measures;
- **Section 7**: Assessment of in-combination effects with other plans and projects;
- **Section 8:** Conclusion in relation to adverse effects on European site integrity; and
- **Section 9:** References.

This report is to be read in full, with no excerpts to be representative of the findings. This report has been prepared exclusively for Jacobs' client and no liability is accepted for any use or reliance on the report by third parties. This report has been prepared on the basis of best scientific knowledge and data made available at the time of writing. Where assumptions have been necessary, these are clearly outlined.

2. Methodology

2.1 Desk Review

A desk-based review was conducted in June 2023, in November 2023, and in late January 2024. The desk-based assessment extended to 2km based on CIEEM guidance and professional opinion. The following resources were analysed to inform the baseline description of the Proposed Development site and surrounding environment:

- Aerial imagery (Bing, Google Earth, ESRI);
- Environmental Protection Agency (EPA) Rivers and water quality data, Water Framework Directive (WFD) status online at https://gis.epa.ie/EPAMaps/ (EPA 2024);
- Protected and invasive species data from the National Biodiversity Data Centre (NBDC) online from http://www.biodiversityireland.ie/ (NBDC 2024);
- Natura 2000 sites data as held by the National Parks and Wildlife Service (NPWS) online from www.npws.ie including: Mapping of European site boundaries, the Natura 2000 network Data Form; Site Synopsis; Generic Conservation Objective data (NPWS 2024);
- The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill from https://www.npws.ie/publications/article-17-reports/article-17-reports-2019 (NPWS 2019a);
- The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill from https://www.npws.ie/publications/article-17-reports/article-17-reports-2019 (NPWS 2019b); and
- The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill from https://www.npws.ie/publications/article-17-reports/article-17-reports-2019 (NPWS 2019c).

2.2 Field Surveys

Site walkovers, breeding bird and wintering bird surveys were undertaken by experienced Jacobs' ecologists, Dr Susie Coyle (Senior Associate Director of Ecology), Sam Warden (Ecologist), Colin Keane (Ecologist), Louis Peacock (Ecologist), Holly Clements (Graduate Ecologist), May Higgins (Graduate Ecologist) and Laura O'Neill (Graduate Ecologist) between October 2022 and August 2023. The purpose of the walkover was to record the habitat composition of the study area and collect information on potential pathways to effects on Annex I habitats and Annexed species associated with the European sites. The study area was determined following best practice guidance (CIEEM 2018) and by professional judgment, taking into account the likely significant effects from the Proposed Development on the receiving environment during the Construction and / or Operational Phases.

Survey dates are provided in Table 2.1.

Table 2.1: Ecological Surveys Informing Baseline Environment and Examining Potential Effects on Annex I Habitats and Annexed Species

Survey Methodology	Survey Date(s)
Terrestrial habitat classification (Fossitt) including incidental sightings signs of protected species	Weeks commencing: 3 April 2023, 17 April 2023, 1 May 2023, 8 May 2023, 5 June 2023, 12 June 2023, 19 June 2023, 26 June 2023, 3 July 2023, 31 July 2023, 7 August 2023, 23 October 2023
Aquatic habitat classification	Weeks commencing: 30 January 2023, 20 February 2023, 12 June 2023, 19 June 2023, 26 June 2023
Wintering bird surveys	Weeks commencing: 24 October 2022, 21 November 2022, 12 December 2022, 23 January 2023, 20 February 2023

Wintering bird surveys were carried out by Jacobs' ecologists between October 2022 to March 2023. The survey area for wintering birds extended to 800m on either side of the Proposed Development Planning Application Boundary from vantage points and drive-by methodologies. This was considered the distance in which birds

could be directly or indirectly affected by the Construction/Operational Phases. One visit per month was carried out with approximately four weeks between each of the surveys. Bird data parameters recorded during surveys included the following:

- Surveyor;
- Date;
- Time;
- BTO code of recorded species;
- Common name of species;
- Number of individuals recorded;
- Behaviour;
- Weather; and
- Other notes.

2.3 Consultation

The following consultation was carried out:

- Meath County Council consultation: 10 November 2022, 30 March 2023, 19 July 2023, 26 October 2023 and 15 November 2023 – Discussions with the Planning Department and Roads Department on M3 motorway junction crossing, disruption to traffic, floodplains, the road network and removal of hedgerows. Impacts from removal of vegetation are assessed in Section 5 and mitigation for reinstatement of land and vegetation to protect watercourses hydrologically linked to European sites is presented in 6.2.3 of this NIS. Section 6.2 details mitigation measures for pollution control;
- Fingal County Council consultation: 10 January 2023, 29 March 2023, 20 June 2023, 26 October 2023 and 16 November 2023: Discussions with the Planning Department and Roads Department on traffic disruptions, road networks and protection of hedgerows. Section 6.2 notes that vegetation will be retained where possible, however, where targeted vegetation removal is required, silt fencing will be installed in these areas under direction of the ECoW. This and further mitigation measures for pollution control in Section 6.2.3 are important to prevent pollution of functionally linked habitat of qualifying interest (QI) birds and to prevent pollution of watercourses hydrologically linked to European sites;
- NPWS consultation: 9 January 2024: Discussion on 'habitat restoration' and the use of commercial seeds, sourcing seeds and mitigation measures, dealing with badger setts, Tolka River and the matching of species to re-construction works. Impacts from removal of vegetation are assessed in Section 5 and mitigation for reinstatement of land and vegetation to protect watercourses hydrologically linked to European sites is presented in Section 6.2.3 of this NIS. Section 6.3 presents mitigation for post construction, namely, semi-natural habitats will be left to re-vegetate naturally from the seed bank within re-instated soils. Commercial seed mixes will only be used to re-instate vegetation on agricultural lands;
- Inland Fisheries Ireland (IFI) consultation: data issued 12 November 2023, consultation date 9 January 2024: Discussion on habitats located downstream, seasonal restrictions, River Tolka, open cut trenching crossing methods of water bodies and IFI presence during construction. Discussion confirmed watercourse methods for stream crossing. IFI noted that the Tolka River supports lamprey (Habitats Directive Annex II species) and that the River Ward, the Mayne River system and the Sluice River system supported salmonids. Mitigation measures to protect watercourses are presented in Section 6. This details the locations of silt fencing, duties of the EcoW, general mitigation measures for pollution control, measures to be implemented during trenching, measures to be implemented when working adjacent to watercourses and to prevent accidental pollution. These measures will prevent pollution of functionally linked habitat of QI birds and prevent pollution of watercourses hydrologically linked to European sites; and

- An Bord Pleanála pre-application consultation: 8 September 2023 and 28 November 2023. Key topics discussed were:
    - Cumulative impact assessment and the consideration that should be given projects interacting with the Proposed Development;
    - Watercourse crossing methods;
    - Construction Environmental Management Plan;
    - Consultation with IFI in relation to watercourse crossings; and
    - Biodiversity and habitat management.
- Potential for cumulative impacts arising from other plans and projects are given in Section 7 of this NIS. Watercourse crossing methodologies (i.e., open cut or in-road) are shown in Table 1.2, with mitigation for open cut trenching in Section 6.2.1 and mitigation for working adjacent to waterbodies in Section 6.2.2. A CEMP has been prepared and consultation with IFI in relation to watercourse crossing took place on 9 January 2024. Regarding biodiversity and habitat management, impacts from removal of vegetation are assessed in Section 5 and mitigation for reinstatement of land and vegetation to protect watercourses hydrologically linked to European sites is presented in Section 6.2.3 of this NIS. Section 6.3 presents mitigation for post construction.

2.4 Guidance Documents

This NIS was produced in accordance with the following guidance:

- Appropriate Assessment Screening for Development Management. Office of the Planning Regulator (OPR) Practice Note PN01 (OPR 2021);
- Appropriate Assessment of Plans and Proposed Schemes in Ireland. Guidance for Planning Authorities (Department of Environment, Heritage and Local Government (DoEHLG) 2010);
- Assessment of Plans and Projects in Relation to Natura 2000 Sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission (EC) 2021a);
- Communication from the Commission on the Precautionary Principle (EC 2000);
- Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission (EC 2007);
- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC 2018);
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive (EC 2021b);
- Guidance on the strict protection of certain animal and plant species under the Habitats Directive in Ireland (Department of Housing, Local Government and Heritage (DHLGH) 2021);
- Commission Notice: Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01);
- A Guide to Habitats in Ireland. The Heritage Council (Fossitt 2000);
- Article 17 reports (NPWS 2019a; NPWS 2019b; NPWS 2019c);
- Good Practice Guidance for Habitats and Species (Chartered Institute of Ecology and Environmental Management (CIEEM) 2021);
- Guidelines for Preliminary Ecological Appraisal. Second Edition (CIEEM 2017);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018);
- National Roads Authority (NRA) Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (NRA 2010);
- Transport Infrastructure Ireland (TII) The Management of Invasive Alien Plant Species on National Roads, Standard (TII 2020a); and

- TII The Management of Invasive Alien Plant Species on National Roads, Technical Guidance (TII 2020b).

2.5 Appropriate Assessment Methodology

Following screening and where the potential for LSEs has been identified the assessment is progressed to the next step, known as Stage 2 AA. Section 177T of the Planning and Development Act 2000 (as amended) provides the following in relation to NIS: *"(1) In this Part—*

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites."

Stage 2 AA is a focused and detailed examination, analysis and evaluation carried out by the competent authority of the implications of the plan or project, alone and in-combination with other plans and projects, on the integrity of a European site in view of that site's conservation objectives. Case law has established that such an Appropriate Assessment, to be lawfully conducted, in summary:

(5) must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;

(ii) must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and

(iii) may only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where the competent authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three and, if necessary, stage four.

The process is shown in Image 2.1.

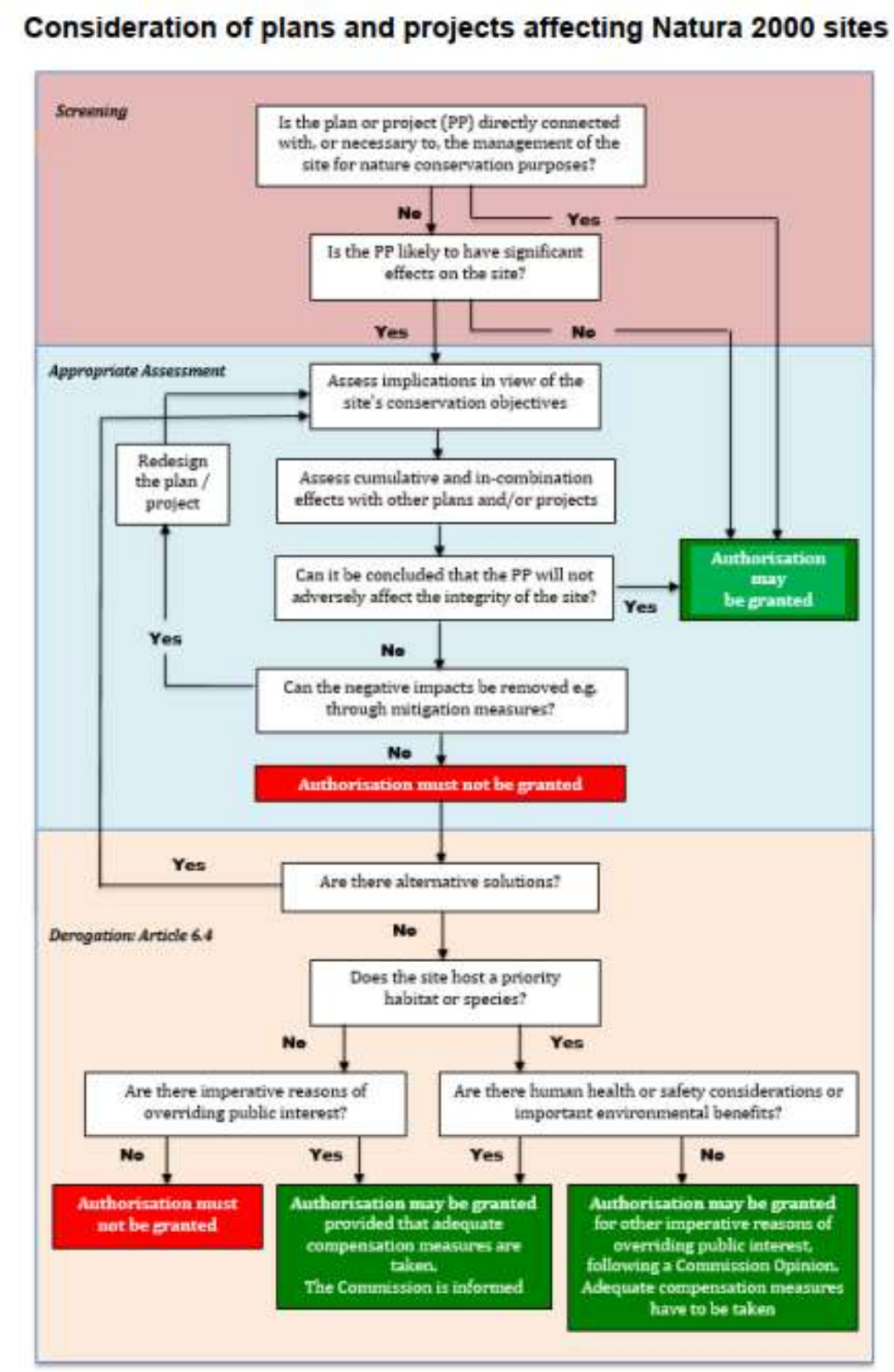

Image 2.1: Flow Chart of Article 6 (3) and (4) Procedure (EC, 2018)

3. Baseline Characterisation

3.1 Receiving Environment

The results of the desk-based review and field surveys (starting September 2022 through to and including November 2023) are presented in the following sections. Photographs taken during the field surveys and descriptions of WFD watercourses are presented in Appendix A and Appendix B of this report to give an overview of the watercourses/waterbodies within the vicinity of the Proposed Development. The Proposed Development and surrounding European sites are shown in Figures 1, 2 and 3 in Appendix C of this report (SPAs are shown on Figure 1, SACs are shown on Figure 2, with Figure 3 showing both types of European site). Descriptions below are in the past tense, to reflect their accuracy at a point in the recent past. Habitat and species data was collected within 150m to 2km of the Proposed Development depending on the potential for impacts on the Proposed Development.

3.1.1 Habitats

In addition to those associated with European sites and nationally designated sites, a small area of the Annex I habitat, Alluvial woodland [91E0] was identified along the Ward River within 2km of the Proposed Development from the desk study (NPWS 2019d).

The majority of the Proposed Development will be within roads (BL3) and adjacent to agricultural fields (BC1, BC2, BC3 and GA1). Agricultural land has the potential to support protected birds including waders, gulls and wildfowl. Treelines (WL2), hedgerows (WL1), depositing lowland rivers (FW2) and drainage ditches (FW4) were also abundant adjacent to and bisected by the Proposed Development.

Other habitats recorded in lower abundance were woodlands (WD1, WD2, WD4, WN5, WS2, WS5, WS3 and WD5), scrub (WS1), semi-natural grasslands and marsh (GS1, GS2, GS4, GM1 and GA2) and artificial habitats (BC4, BL2, ED2, ED3 and FL8).

Fossitt habitat codes are as follows:

- BC1 – Arable crops;
- BC2 – Horticultural land;
- BC3 – Tilled land;
- BC4 – Flower beds and borders;
- BL2 – Earth banks;
- BL3 – Building or Artificial;
- ED2 – Spoil and bare ground;
- ED3 – Recolonising bare ground;
- FL8 – Other artificial lakes and ponds;
- FW2 – Depositing lowland rivers;
- FW4 – Drainage ditches;
- GA1 – Improved agricultural grassland;
- GA2 – Amenity grassland;
- GM1 – Marsh;
- GS1 – Dry calcareous and neutral grassland;
- GS2 – Dry meadows and grassy verges;
- GS4 – Wet grassland;
- WD1 – (Mixed) Broadleaved woodland;
- WD2 – Mixed broadleaved / conifer woodland;

- WD4 – Conifer plantation;
- WD5 – Scattered trees and parkland;
- WL1 – Hedgerows;
- WL2 – Treeline;
- WN5 – Riparian woodland;
- WS1 – Scrub;
- WS2 – Immature woodland;
- WS3 – Ornamental / non-native shrub; and
- WS5 – Recently-felled woodland.

3.1.2 European Sites

The Zone of Influence (ZoI) was identified by applying the source-pathway-receptor model. The main source of impacts was identified as those that could travel along a watercourse or the sea to the receptor. Applying the model, 19 European sites were found to be within the ZoI of the Proposed Development due to their connectivity (proximity / ecological / hydrological connection etc) and so were brought forward for further assessment in the AA. The SACs that screened in are Malahide Estuary SAC (3.6km) and Baldoyle Bay SAC (4km). The SPAs that screened in are Malahide Estuary SPA (3.6km), Baldoyle Bay SPA (4km), North-West Irish Sea SPA (4.5km), North Bull Island SPA (4.6km), South Dublin Bay and River Tolka Estuary SPA (5.5km), Rogerstown Estuary SPA (7.8km), Ireland's Eye SPA (8.6km), Lambay Island SPA (13.4km), Skerries Islands SPA (18.5km), River Nanny Estuary and Shore SPA (26km), Boyne Estuary SPA (33km), and Dundalk Bay SPA (50km). These sites and their qualifying interests (QIs) are described below.

3.1.2.1 Summary of the Site Synopses

3.1.2.1.1 Malahide Estuary SAC

According to the site synopsis and conservation objectives (NPWS 2017; NPWS 2013a) this European site is located north of Malahide and east of Swords at the estuary of the River Broadmeadow where it flows into the Irish Sea. This European site is bisected by a railway which has a small viaduct to allow water to flow from the west most section of the estuary to the east and out into the sea. The Ward River is a tributary of this river and hydrologically links this European site with the Proposed Development (see Section 3.1.3). A spit of sand shelters the estuary from the Irish Sea allowing for the formation of dune habitats, saltmarsh habitats and intertidal mud and sandflat habitats which makes this European site of international importance. Annex I shifting dunes along the shoreline with *Ammophila arenaria* (also known as white dunes) [2120] and fixed coastal dunes with herbaceous vegetation (also known as grey dunes) [2130] occur on the spit of sand at the mouth of the estuary. East of the railway occurs extensive Annex I mudflat and sandflat habitat not covered by seawater at low tide [1140] upon which the Annex I salicornia and other annuals colonising mud and sand habitat [1310] occurs. In addition, Annex I Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] occur throughout the European site on the fringes of the estuary as it transitions to terrestrial habitats.

3.1.2.1.2 Baldoyle Bay SAC

According to the site synopsis and conservation objectives (NPWS 2013b; NPWS 2012a) the European site is located to the north and east of Baldoyle and to the south of Portmarnock in Co. Dublin. The Mayne River and the Sluice River both feed into this estuary and hydrologically link this European site with the Proposed Development, see Section 3.1.3. Baldoyle Bay SAC is a small, narrow estuary which is separated from the open sea by a large sand spit. This European site is of international importance for both its Annex I intertidal sand and mud flats exposed at low tide [1140] which are colonised by Annex I salicornia and other annuals colonising mud and sand habitat [1310] as well as the narrow stripes of saltmarsh classified as both Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] and Mediterranean salt meadows (*Juncetalia maritimi*) [1410].

3.1.2.1.3 Rockabill to Dalkey Island SAC

According to the site synopsis and conservation objectives (NPWS 2014a; NPWS 2013c) this European site is a large coastal site extending from waters off the coast of Skerries 40km south to Killiney in Co. Dublin. It is hydrologically linked to the Proposed Development through the Malahide Estuary and Baldoyle Bay. It includes a range of dynamic inshore and coastal habitats in the Irish Sea designated as Annex I reef habitat [1170]. This habitat is uncommon on the eastern seaboard of Ireland and this SAC represents the best resource of this habitat on this coastline. This Annex I habitat is also a key habitat for the Annex II harbour porpoise (*Phocoena phocoena*) [1351] which have been recorded in significant numbers in groups containing both juvenile and adult individuals year-round.

3.1.2.1.4 Lambay Island SAC

According to the site synopsis and conservation objectives (NPWS 2014b; NPWS 2013d) Lambay Island lies approximately 4km off the north Co. Dublin coastline and is separated from it by a channel of 10-13 m in depth. East of Lambay Island the water deepens rapidly into the Irish Sea basin. Lambay Island lies 6.9km northeast of the Malahide Estuary which hydrologically links it to the Proposed Development. In these waters occurs the Annex I reef habitat [1170] which occurs in both the shallow waters to the west and deeper waters to the east. On the western side of the island the land rises gently from a bedrock shoreline. Cobble storm beaches are associated with this shore and at low tide sandflats are exposed within the harbour and below a section of the rocky shore. The northern, eastern and most of the southern shorelines consist of steep cliffs varying from about 15 m to 50 m high. These are topped by the Annex I vegetated sea cliffs of the Atlantic and Baltic coasts [1230] along most of their length which occur in shallow peaty soils.

The island supports a long-established breeding colony of grey seal (*Halichoerus grypus*) [1364], a species that is listed on Annex II of the Habitats Directive. The European site is also designated for breeding harbour seal (*Phoca vitulina*), who's numbers using Lambay Island are harder to capture for breeding as pups are able to swim after birth and are highly mobile unlike grey seals (Cronin et al. 2004). A number of non-native mammals, including fallow deer and red-necked wallaby, have been introduced onto Lambay Island during the last century as the island is privately owned (NPWS 2014b).

3.1.2.1.5 Malahide Estuary SPA

According to the site synopsis and conservation objectives (NPWS 2013e; NPWS 2013f) this European site is located north of Malahide and east of Swords at the estuary of the River Broadmeadow where it flows into the Irish Sea. This European site is bisected by a railway which has a small viaduct to allow water to flow from the west most section of the estuary to the east and out into the sea. The Ward River is a tributary of this river and hydrologically links this European site with the Proposed Development, see Section 3.1.3. The intertidal flats provide high value foraging grounds to protected birds and salt marshes provide important roosts during high tide. This European site is designated for its internationally important population of light-bellied Brent goose (*Branta bernicla hrota*), and nationally important populations of great crested grebe (*Podiceps cristatus cristatus*), shelduck (*Tadorna tadorna*), pintail (*Anas acuta*), goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), oystercatcher (*Haematopus ostralegus*), golden plover (*Pluvialis apricaria*), grey plover (*Pluvialis squatarola*), knot (*Calidris canutus*), dunlin (*Calidris alpina*), bar-tailed godwit (*Limosa lapponica*), and redshank (*Tringa totanus*). The European site also has the QI of wetlands and waterbirds which include the following; breeding ringed plover (*Charadrius hiaticula*), shelduck and mallard (*Anas platyrhynchos*), wintering mute swan (*Cygnus olor*), pochard (*Aythya ferina*), ringed plover, lapwing (*Vanellus vanellus*), curlew (*Numenius arquata arquata*), greenshank (*Tringa nebularia*) and turnstone (*Arenaria interpres*), and lastly passage migrants ruff (*Philomachus pugnax*), curlew sandpiper (*Calidris ferruginea*), spotted redshank (*Tringa erythropus*) and little stint (*Calidris minuta*).

3.1.2.1.6 Baldoyle Bay SPA

According to the site synopsis and conservation objectives (NPWS 2014c; NPWS 2013g) Baldoyle Bay SPA is a small, narrow estuary which is separated from the open sea by a large sand system. The Mayne River and the

Sluice River both feed into this estuary and hydrologically link this European site with the Proposed Development (see section 3.1.3). The European site is located to the north and east of Baldoyle and to the south of Portmarnock in Co. Dublin. Intertidal sand and mud flats are exposed at low tide with narrow stripes of saltmarsh occurring near Portmarnock Bridge and at Portmarnock Point. This European site is designated for wintering bird species as it provides feeding areas and roost sites for internationally important populations of light-bellied Brent goose, and nationally important numbers of shelduck, ringed plover, golden plover, grey plover, and bar-tailed godwit. This European site also has the QI of wetlands and waterbirds which include a number of passage migrants including curlew sandpiper and a wide variety of birds which use the site for wintering and breeding in spring months.

3.1.2.1.7 North-West Irish Sea SPA

According to the site synopsis and conservation objectives (NPWS 2023a; NPWS 2023b) the North-West Irish Sea SPA comprises the estuaries and bays along with connecting coastal stretches of intertidal and shallow subtidal habitats to the more pelagic marine waters offshore of counties Louth, Meath, and Dublin. The North-West Irish Sea SPA is hydrologically linked to the Proposed Development through the Malahide Estuary and Baldoyle Bay. These habitats provide a range of feeding and roosting habitats for waterbirds during the winter and migration periods, as well as for seabirds that breed at colonies on the north-west Irish Sea's islands and headlands.

Each of the QI species for this European site have estimated abundances equalled or exceeded 1% of the total estimated size of the winter assemblage within the SPA. These species are red-throated diver (*Gavia stellata*), fulmar (*Fulmarus glacialis*), little gull (*Larus minutus*), kittiwake (*Rissa tridactyla*), black-headed gull (*Chroicocephalusgray ridibundus*), common gull (*Larus canus*), herring gull (*Larus argentatus*), great black-backed gull (*Larus marinus*), razorbill (*Alca torda*) and guillemot (*Uria aalge*). The summer abundance of the QI species manx shearwater (*Puffinus puffinus*) and common scoter (*Melanitta nigra*) within the SPA is of international importance.

3.1.2.1.8 North Bull Island SPA

According to the site synopsis and conservation objectives (NPWS, 2014d; NPWS, 2015a) this European site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The River Tolka flows into the estuary in the vicinity of this European site and hydrologically links it the Proposed Development, see Section 3.1.3. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses. Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl.

North Bull Island is one of the top sites in the country for wintering waterfowl, it is of international importance due to 20,000+ waterfowl which winter within this SPA and also, due to the international important numbers of light-bellied Brent geese, black-tailed godwit (*Limosa limosa*), and bar-tailed godwit. In addition, North Bull Island is a Ramsar Convention site and within the SPA there is a Statutory Nature Reserve and a Wildfowl Sanctuary. This SPA supports an excellent diversity of wintering wetland birds with divers, cormorants (*Phalacrocorax carbo*), dabbling ducks, sea ducks, and waders all well represented. It has several important populations of breeding birds, most notably, ringed plover and shelduck.

3.1.2.1.9 South Dublin Bay and River Tolka Estuary SPA

According to the site synopsis and conservation objectives (NPWS 2015b; NPWS 2015c) the South Dublin Bay and River Tolka Estuary SPA comprises the intertidal area between the River Liffey and Dun Laoghaire as well as Booterstown Marsh, and the estuary of the River Tolka to the north of the River Liffey. The River Tolka flows into this European site and hydrologically links it the Proposed Development (see section 3.1.3.) In the south bay, the

intertidal flats and shallow bay extend for almost 3km from the shore at their widest. The sediments are predominantly well-aerated sands. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs to the south near Dun Laoghaire. The European site includes Booterstown Marsh, an enclosed area of saltmarsh and muds that is cut off from the sea by the Dublin/Wexford railway line, being linked only by a channel to the east, the Nutley stream. Sea water incursions into the marsh occur along this stream at high tide. An area of grassland at Poolbeg, north of Irishtown Nature Park, is also included in the European site. Sandymount Strand/Tolka Estuary which are within the boundary of this SPA are designated as a Ramsar Convention site (NPWS 2015b).

The SPA supports Important populations of passage and staging common tern (*Sterna hirundo*), Roseate tern (*Sterna dougallii*) and Arctic tern (*Sterna paradisaea*) which are qIs of the European site. Over 400 breeding pairs of common terns are now breeding on the man-made breeding structure known as ESB Dolphin.

The SPA holds internationally important numbers of Brent geese, nationally important population of oystercatcher, ringed plover, grey plover, knot, sanderling (*Calidris alba*), dunlin, bar-tailed godwit, redshank and black-headed gull, but also other gulls namely common gull, herring gull and Mediterranean gull (*Larus melanocephalus*) are also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

3.1.2.1.10 Rogerstown Estuary SPA

According to the site synopsis and conservation objectives (NPWS 2014e; NPWS 2013h) Rogerstown Estuary is located 2km north of Donabate, Co. Dublin, and is the estuary of the Ballyboghill River and Ballough River. There is no hydrological link to the Proposed Development but to functionally linked habitat of this SPA. The extensive intertidal mudflats and sandflats along the estuary provide high quality foraging grounds for birds during low tide. Saltmarsh fringes provide roosting locations during high tide.

The QI of this European site that has an internationally important population within the SPA is light-bellied Brent goose. The qIs that have nationally important populations within the SPA are greylag goose *Anser anser*), shelduck, shoveler (*Spatula clypeata*), oystercatcher, ringed plover, grey plover, knot, dunlin, black-tailed godwit, and redshank.

3.1.2.1.11 Ireland's Eye SPA

According to the site synopsis and conservation objectives (NPWS 2011a; NPWS 2022a) Ireland's Eye is an uninhabited island located about 1.5km north of Howth in Co. Dublin. It is 2.5km from Baldoyle Bay which hydrologically links it to the Proposed Development. The European site encompasses Ireland's Eye, Rowan Rocks, Thulla, Thulla Rocks, Carrageen Bay and a seaward extension of 200m in the west and 500m to the north and east. The island's rocks form impressive near vertical cliffs, reaching 69m in height, along the northern and eastern sides of the island, with scattered exposures elsewhere on the island and especially in the high northern half.

Irelands eye is an important European site for breeding seabirds with 11 species recorded breeding on the island. It's QI species include wintering and breeding cormorant, herring gull, kittiwake, guillemot, and razorbill. Additionally, a gannet (*Morus bassanus*) colony is of particular importance as its only one of six in the country and one of two on the East coast. In addition, shelduck, oystercatcher and ringed plover are known to breed on the island and greylag goose, Brent geese and other waders and seabirds' winter here.

3.1.2.1.12 Howth Head Coast SPA

According to the site synopsis and conservation objectives (NPWS 2011b; NPWS 2022b) Howth Head is a rocky headland on the north side of Dublin Bay. It is 3.5km from Baldoyle Bay which hydrologically links it to the Proposed Development. The European site comprises the cliffs along the headland and extends out 500m into the sea.

The QI for this European site, kittiwake, has a nationally important population of breeding within the SPA. Other species that utilise the site but are not QI species are breeding fulmar, shag (*Phalacrocorax aristotelis*), herring gull, great black-backed gull, guillemot, black guillemot (*Cepphusgrylle*), peregrine (*Falco peregrinus*) and razorbill.

3.1.2.1.13 Lambay Island SPA

According to the site synopsis and conservation objectives (NPWS, 2011c; NPWS, 2022c) Lambay Island lies approximately 4km off the north Co. Dublin coastline and is separated from it by a channel of 10-13m in depth. Lambay Island lies 6.9km northeast of the Malahide Estuary which hydrologically links it to the Proposed Development. On the western side of the island the land rises gently from a bedrock shoreline. Cobble storm beaches are associated with this shore and at low tide sandflats are exposed within the harbour and below a section of the rocky shore. The northern, eastern and most of the southern shorelines consist of steep cliffs varying from about 15m to 50m high. These are backed by vegetated slopes along most of their length. These habitats are ideal for breeding seabirds.

This European site is of special conservation interest for holding and assemblage of over 20,000 breeding birds with three internationally important breeding populations, namely, cormorant, shag, and guillemot. There are six breeding populations of national importance, these include fulmar, lesser black backed gull (*Larus fuscus*), herring gull, kittiwake, razorbill, and puffin (*Fratercula arctica*). The site also has populations of species that are not qIs for this European site, namely breeding oystercatcher, ringed plover and shelduck.

Lambay holds nationally important numbers of greylag goose and herring gull during the winter, with an array of other waders that winter on the island.

3.1.2.1.14 Rockabill SPA

According to the site synopsis and the conservation objectives (NPWS, 2015d; NPWS, 2013k), Rockabill island lies approximately 7km off the coast of North Dublin coast. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. The SPA is two separate islands which are separated by a narrow channel and at spring tides are connected via substrate. The islands are known as the Lighthouse Island and the smaller island known as the Bill. The lighthouse island is vegetated by a scrubby sward of tree mallow (*Lavatera arborea*) and a range of other maritime plant species.

The European site is protected for three species of tern namely, Roseate, common, and Arctic, which are listed on the annex I of the EU Birds Directive and also, purple sandpiper (*Calidris maritima*) which is listed as Annex II species.

Rockabill holds the most important colony in Europe of its QI, Roseate tern, of which there were 1,093 pairs in 2010. This European site also has the largest numbers in Ireland of its QI, common tern, with 1,940 pairs in 2010. The European site is actively managed by BirdWatch Ireland and the National Parks and Wildlife Service, where a conservation project is run to maintain and improve tern numbers on the island. In winter the European site is used by national important population of purple sandpiper, which is one of its qIs, and other species which are not qIs for the site also use the island namely, cormorant, oystercatcher, and turnstone.

3.1.2.1.15 Dalkey Islands SPA

According to the site synopsis and conservation objectives (NPWS, 2015e; NPWS, 2022d) the Dalkey Islands are uninhabited islands located about 400m east of Sorrento Point, Co. Dublin. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. The European site encompasses Dalkey Island, Lamb Island and Maiden Rock, the intervening rocks and reefs and a seaward extension of 200m. The islands are low lying with a thin layer of peaty soil providing low-growing vegetation.

This SPA is an important post-breeding roosting site for tern with assemblages' of 2000 terns of various tern species using this European site before migration. It is also an important breeding site for Arctic tern, common

tern and Roseate tern. Additionally great black-backed gull, shelduck, oystercatcher and herring gull are known to nest on the islands.

3.1.2.1.16 Skerries Islands SPA

According to the site synopsis and the conservation objectives (NPWS, 2009; NPWS, 2022e), Skerries island SPA is between 0.5-1.5km off the coast of Skerries, North Dublin. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. It is comprised of three uninhabited islands known as Shenick's, St Patrick's and Colt Island. These islands are low-lying with maximum heights between 8-13m above sea level. Two of the islands have low cliffs while Shenick's comprises of extensive expanses of intertidal rocky shore and sand flats and at low tides a shingle bar connects the island with mainland. These islands became a BirdWatch Ireland reserve in 1987.

This SPA is an important wintering and breeding site for seabirds and wintering waterfowl. The European site has important breeding numbers of its QI cormorant and nationally significant numbers of its QI shag. The cormorant colony which was established in 1990's when taken together with Lambay and Irelands Eye makes up 30% of Irish population. In addition, a nationally important colony of its QI herring gull exists, and other breeding seabirds that are not QI speciesIding fulmar, lesser and great black back gull with shelduck, ringed plover and oystercatcher also, breeding.

During the winter, the islands contain internationally important numbers of its QI light-bellied Brent goose, nationally important numbers of its QIs cormorant, purple sandpiper, turnstone, herring gull and numerous other non-QI waders.

3.1.2.1.17 Boyne Estuary SPA

According to the site synopsis and the conservation objectives (NPWS 2015f; NPWS 2013l), Boyne Estuary SPA is a moderately sized coastal site situated on the border between counties Meath and Louth and is generally 500m wide while one section is 1km in width. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. Sediments vary from fine muds in the sheltered areas to sandy muds or sands towards river mouth. There are Atlantic salt marshes along the intertidal areas which contain species like sea-purslane (*Halimione portulacoides*) and many other halophytes. Part of this SPA is a Wildfowl Sanctuary.

The Boyne estuary is the second most important estuary for wintering birds on the Meath-Louth coastline. The European site has internationally important numbers of its QI black-tailed godwit and nine other species of nationally important wintering species namely, shelduck, oystercatcher, golden plover, grey plover, lapwing, knot, sanderling, redshank, turnstone, and an array of other wading bird species. The numbers of knot at this European site are of note as it is 6.8% of the Irish wintering population.

There is a little tern (*Sterna albifrons*) breeding colony at this European site which is considered of national importance and occurs at Baltray. A conservation project operates at this colony to monitor, maintain, and improve the numbers of breeding little terns. In both 2009 and 2010, there 43 pairs bred fledging 94 and 96 chicks respectively (Lynch, et al. 2017).

3.1.2.1.18 River Nanny Estuary and Shore SPA

According to the site synopsis and the conservation objectives (NPWS, 2015g; NPWS, 2012d), River Nanny any Estuary and Shore SPA comprises of the river itself and shoreline north and south of the estuary. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. The estuarine channel extends inland for 2km, is narrow and well sheltered with sections of developed saltmarsh in the eastern section of the channel. The shoreline extends to 500m at low tide and the well-developed beaches and clay cliffs provide high tide roost for birds.

The European site has nationally important numbers of its QIs golden plover, oystercatcher, ringed plover, knot, sanderling, and herring gull. This European site also has the QI of wetlands and waterbirds meaning that a range

of other waterbirds winter at this European site with the roosting area being of high importance along with intertidal flats which provide feeding habitat.

3.1.2.1.19 Dundalk Bay SPA

According to the site synopsis and conservation objectives (NPWS 2014g; NPWS 2011d) Dundalk Bay is a large open shallow bay which hosts an internationally important assemblage of over 20,000 wintering birds. There is no significant hydrological link to Proposed Development, but to functionally linked habitat of this SPA. It has extensive saltmarshes and intertidal mudflats and sandflats which provide essential foraging and roosting habitats for the protected birds.

The European site has internationally important numbers of its QIs light-bellied Brent goose, knot, black-tailed godwit, and bar-tailed godwit. The European site also has nationally important numbers of its QIs great crested grebe, greylag goose, shelduck, teal, mallard, pintail, common scoter, red-breasted merganser, oystercatcher, ringed plover, golden plover, grey plover, lapwing, dunlin, curlew, redshank, black-headed gull, common gull, and herring gull. This European site also has the QI of wetlands and waterbirds meaning that a range of other waterbirds winter and passage at this European site with the roosting area being of high importance along with intertidal flats which provide feeding habitat.

3.1.2.2 Qualifying Interest Habitats

Annex I habitats protected by these European sites are described here. The desk-based review of the NPWS shapefiles (NPWS, 2019d) returned no Annex I habitats under the footprint or within 200m of the Proposed Development. Professional opinion considered 200m to be sufficient to identify direct impacts to Annex I habitats. Alluvial woodland [91E0], an Annex I habitat, was identified along the Ward River within 2km of the Proposed Development.

3.1.2.2.1 Mudflats and Sandflats Not Covered by Seawater at Low Tide [1140]

Tidal mudflats and sandflats habitat is comprised of the intertidal section of the coastline where sands and muds dominate. They are dynamic ecosystems, dependent on the balance of natural accretion and erosion. The fundamental building block of this habitat is sediment ranging from around 1micrometre to 2mm. The finer silt and clay sediments are dominant in mudflats and the larger sand fractions are associated with areas exposed to significant wave energy. A range of physical pressures operate in these habitats including dynamic fluctuations in salinity, temperature, and immersion (NPWS, 2019b; European Commission, 2013). Diverse communities of invertebrates and algae are usually present in this habitat and eelgrass communities are included as part of this habitat.

This is QI habitat for both Malahide Estuary SAC and Baldoyle Bay SAC. The river that is crossed by the Proposed Development that is hydrologically connected to Malahide Estuary SAC is Ward_030. Mayne_010 is the river that is crossed by the Proposed Development and hydrologically links to Baldoyle Bay SPA.

3.1.2.2.2 *Salicornia* and Other Annuals Colonising Mud and Sand [1310]

Salicornia and other annuals colonising mud and sand is a pioneer saltmarsh community that may occur on muddy sediment seaward of established saltmarsh, or form patches within other saltmarsh communities where the elevation is suitable and there is regular tidal inundation. As this habitat is dominated by annuals it can be ephemeral or transient in nature and is highly susceptible to erosion. Its distribution can vary considerably from year to year, and it can move in response to changing conditions, e.g., in estuaries with shifting river channels. However, no significant pressures were identified that would affect the long-term viability of the habitat (NPWS 2019).

This is QI habitat for both Malahide Estuary SAC and Baldoyle Bay SAC. The river that is crossed by the Proposed Development that is hydrologically connected to Malahide Estuary SAC is Ward_030. Mayne_010 is the river that is crossed by the Proposed Development and hydrologically links to Baldoyle Bay SPA.

3.1.2.2.3 Atlantic Salt Meadows (*Glauco-Puccinellietalia Maritimae*) [1330]

Atlantic salt meadows occur in the widest part of saltmarsh habitat establishing in sheltered inlets along the Irish coast. Atlantic salt meadows have distinctive plant community zones from lower reaches to higher reaches with many different communities of plants being important for other wildlife, invertebrates, birds, etc. This habitat is regularly inundated by salt water from the coast at high tides, (NPWS 2019a).

This is QI habitat for both Malahide Estuary SAC and Baldoyle Bay SAC. The river that is crossed by the Proposed Development that is hydrologically connected to Malahide Estuary SAC is Ward_030. Mayne_010 is the river that is crossed by the Proposed Development and hydrologically links to Baldoyle Bay SPA.

3.1.2.2.4 Mediterranean Salt Meadows (*Juncetalia Maritimi*) [1410]

Mediterranean salt meadows occur on the upper reaches of salt marshes where the marsh system meets terrestrial habitats. Atlantic salt meadows can be present alongside Mediterranean salt meadows and are distinguished by the presences of rushes which occur in Mediterranean salt meadows. Although this habitat is on the upper zone of salt marsh, they are still regularly inundated by salt water from the coast at high tides (NPWS 2019a).

This is QI habitat for both Malahide Estuary SAC and Baldoyle Bay SAC. The river that is crossed by the Proposed Development that is hydrologically connected to Malahide Estuary SAC is Ward_030. Mayne_010 is the river that is crossed by the Proposed Development and hydrologically links to Baldoyle Bay SPA.

3.1.2.2.5 Shifting Dunes Along the Shoreline with *Ammophila Arenaria* (White Dunes) [2120]

Otherwise known as marram dunes or white dunes these dunes are partially stabilised and dominated by marram grass (*Ammophila arenaria*). Marram traps sand and stabilises it, however other vegetation is sparse so the cover of vegetation on the dune is incomplete. This means these dunes can build and erode quickly which is why they are known as shifting dunes. These dunes form further inland to embryonic dunes and form very tall dune structures (NPWS 2019a). This habitat is a QI of Malahide Estuary SAC.

3.1.2.2.6 Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes) [2130]

Otherwise known as grey dunes, fixed dunes are sheltered, stable dunes which occur behind foredune habitats. They have nearly 100% vegetation cover and sand can often be overlaid with humus. While marram grass can occur, it does not dominate and other vegetation can resemble herb-rich grasslands (NPWS 2019a). This habitat is a QI of Malahide Estuary SAC.

3.1.2.2.7 Reefs [1170]

Reefs are any marine feature made up of hard substrate which is available for colonisation by plants and animals. Their habitats range from intertidal rocky habitats to subtidal habitats to depth of 4,500m. These occur throughout the Irish coast out into the Irish Sea and the North Atlantic Ocean. This habitat is a QI of Rockabill to Dalkey Island SAC and Lambay Island SAC.

3.1.2.2.8 Vegetated Sea Cliffs of the Atlantic and Baltic Coasts [1230]

Sea cliffs are steep or vertical slopes along the coast this habitat is located on the cliff top where vegetation can grow. The cliff top is not inundated with coastal waters but are subject to influence from the sea from sea spray. Vegetation which grows on the sea cliffs are salt hardy and communities which can occur include scrub, heath, grassland, or maritime annual vegetation. This habitat is a QI of Lambay Island SAC.

3.1.2.3 Qualifying Interest Species

The desk-based review of the NBDC (NBDC 2024) returned several records of the QI species within 2km of the Proposed Development (see Table 3.1). The desk-based assessment extended to 2km based on CIEEM guidance (CIEEM 2018) and professional opinion. Information was used from site synopses and conservation objectives as part to the desk-based review. The most recent data has been used to identify likely presence of QI species. All records were bird species for the above SPAs, no QI species for the SACs described in Section 3.1.2.1 were found given the Proposed Development is terrestrial, and the QI species for the SACs were marine mammals. Where no data was returned from the desk-based review it has been assumed that the QI is not present.

Table 3.1: Results of the NBDC Desk-based Survey Showing Potential QI species Within the 2km Study Area Used for the Desk-based Review and the Relevent European Sites the Species are QI for and Which are Within the Commuting Distance for that Species

Species Name	Scientific Name	No. Records	Most Recent Record	Relevant European Site(s) for Which the Species is Designated	Designation(s)
Birds					
Arctic tern	*Sterna paradisaea*	1	14/05/2001	South Dublin Bay and River Tolka Estuary SPA. North-West Irish Sea SPA Dalkey Islands SPA Rockabill SPA	EU Birds Directive: Annex I Bird Species Birds of Conservation Concern: Amber List Wildlife Acts
Bar-tailed godwit	*Limosa lapponica*	3	04/01/2003	Malahide Estuary SPA. Baldoyle Bay SPA. South Dublin Bay and River Tolka Estuary SPA. Dundalk Bay SPA	EU Birds Directive: Annex I Bird Species Birds of Conservation Concern: Amber List Wildlife Acts
Black-headed gull	*Larus ridibundus*	5	31/12/2011	North Bull Island SPA. South Dublin Bay and River Tolka Estuary SPA. North-West Irish Sea SPA Dundalk Bay SPA	Birds of Conservation Concern: Red List Wildlife Acts
Black-tailed godwit	*Limosa limosa*	3	04/01/2003	Malahide Estuary SPA. Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Brent goose	*Branta bernicla*	4	04/01/2003	Malahide Estuary SPA. Baldoyle Bay SPA. North Bull Island SPA. South Dublin Bay and River Tolka Estuary SPA. Rogerstown Estuary SPA. Skerries Islands SPA Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Common scoter	*Melanitta nigra*	1	04/01/2003	North-West Irish Sea SPA Dundalk Bay SPA	EU Birds Directive: Annex II & Annex III Birds of Conservation Concern: Red List Wildlife Acts
Cormorant	*Phalacrocorax carbo*	5	04/01/2003	Ireland's Eye SPA. North-West Irish Sea SPA Skerries Islands SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Curlew	*Numenius arquata*	4	31/12/2011	North Bull Island SPA. Dundalk Bay SPA	EU Birds Directive: Annex II Birds of Conservation Concern - Red List

Species Name	Scientific Name	No. Records	Most Recent Record	Relevant European Site(s) for Which the Species is Designated	Designation(s)
					Wildlife Acts
Dunlin	*Calidris alpina*	3	04/01/2003	Malahide Estuary SPA. South Dublin Bay and River Tolka Estuary SPA. Dundalk Bay SPA	EU Birds Directive: Annex I Bird Species Birds of Conservation Concern: Amber List Wildlife Acts
Golden plover	*Pluvialis apricaria*	2	04/01/2003	Malahide Estuary SPA. Baldoyle Bay SPA. North Bull Island SPA. River Nanny and Shoreline SPA Boyne Estuary SPA. Dundalk Bay SPA	EU Birds Directive: Annex I, Annex II: Section II & Annex III: Section III Bird Species Birds of Conservation Concern: Red List Wildlife Acts
Goldeneye	*Bucephala clangula*	3	04/01/2003	Malahide Estuary SPA.	EU Birds Directive: Annex II: Section Bird Species Birds of Conservation Concern: Amber List Wildlife Acts
Great black-backed gull	*Larus marinus*	3	03/01/2003	North-West Irish Sea SPA	Birds of Conservation Concern : Amber List Wildlife Acts
Great crested grebe	*Podiceps cristatus*	4	04/01/2003	Malahide Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Great northern diver	*Gavia immer*	1	04/01/2003	North-West Irish Sea SPA	EU Birds Directive: Annex I Bird Species Wildlife Acts
Grey plover	*Pluvialis squatarola*	2	04/01/2003	Malahide Estuary SPA. Baldoyle Bay SPA. South Dublin Bay and River Tolka Estuary SPA. Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Guillemot	*Uria aalge*	2	03/01/2003	Ireland's Eye SPA. North-West Irish Sea SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Herring gull	*Larus argentatus*	5	18/01/2011	Ireland's Eye SPA. Lambay Island SPA. North-West Irish Sea SPA Skerries Islands SPA River Nanny and Shoreline SPA Dundalk Bay SPA	Birds of Conservation Concern: Red List Wildlife Acts

Species Name	Scientific Name	No. Records	Most Recent Record	Relevant European Site(s) for Which the Species is Designated	Designation(s)
Kittiwake	*Rissa tridactyla*	2	03/01/2003	'reland's Eye SPA. Howth Head Coast SPA. North-West Irish Sea SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Knot	*Calidris canutus*	1	06/01/2001	Malahide Estuary SPA. South Dublin Bay and River Tolka Estuary SPA. River Nanny and Shoreline SPA Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Red List Wildlife Acts
Lapwing	*Vanellus*	4	31/12/2011	Boyne Estuary SPA Dundalk Bay SPA.	EU Birds Directive: Annex II Bird Species Birds of Conservation Concern: Red List Wildlife Acts
Lesser black-backed gull	*Larus fuscus*	2	01/01/2003	Lambay Island SPA. North-West Irish Sea SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Mallard	*Anas platyrhynchos*	6	14/04/2012	Dundalk Bay SPA	EU Birds Directive: Annex II & Annex III Bird Species Wildlife Acts
Oystercatcher	*Haematopus ostralegus*	3	03/01/2003	Malahide Estuary SPA. North Bull Island SPA. South Dublin Bay and River Tolka Estuary SPA. Rogerstown Estuary SPA. River Nanny and Shoreline SPA Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Pintail	*Anas acuta*	2	04/01/2003	Malahide Estuary SPA. Dundalk Bay SPA	EU Birds Directive: Annex II: Section I B& Annex III: Section II Bird Species Birds of Conservation Concern: Red List Wildlife Acts
Razorbill	*Alca torda*	2	03/01/2003	Ireland's Eye SPA. North-West Irish Sea SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Red-breasted merganser	*Mergus serrator*	2	03/01/2003	Malahide Estuary SPA. Dundalk Bay SPA	EU Birds Directive: Annex II: Section II Bird Species Wildlife Acts
Red-throated diver	Gavia stellata	1	04/01/2003	North-West Irish Sea SPA	EU Birds Directive: Annex I Bird Species Birds of Conservation Concern: Amber List Wildlife Acts

Species Name	Scientific Name	No. Records	Most Recent Record	Relevant European Site(s) for Which the Species is Designated	Designation(s)
Ringed plover	*Charadrius hiaticula*	2	04/01/2003	Baldoyle Bay SPA. South Dublin Bay and River Tolka Estuary SPA. River Nanny and Shoreline SPA Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Redshank	*37aritimtotanus*	3	03/01/2003	Malahide Estuary SPA. South Dublin Bay and River Tolka Estuary SPA. Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Red List Wildlife Acts
Shelduck	*Tadorna*	6	04/01/2003	Malahide Estuary SPA. Baldoyle Bay SPA. Boyne Estuary SPA. Dundalk Bay SPA	Birds of Conservation Concern: Amber List Wildlife Acts
Teal	*Anas crecca*	4	04/01/2003	North Bull Island SPA. Dundalk Bay SPA	EU Birds Directive: Annex II: Section I & Annex III: Section II Bird Species Birds of Conservation Concern: Amber List Wildlife Acts

The wintering bird surveys between 2022 and 2023 found several QI species using agricultural fields adjacent to the Proposed Development and other habitats within the surveyed area of 800m to either side of the Proposed Development Planning Application Boundary (see Table 3.2).

Table 3.2: Winter Bird Peak Counts Jacobs Survey Data 2022/2023 with QI Species in Bold

Species Name	October 2022	November 2022	December 2022	January 2023	February 2023	March 2023
Black-headed Gull	197	394	172	52	114	3
Black-tailed Godwit	23	0	0	0	0	1
Brent Goose	0	240	231	200	0	0
Buzzard	0	0	0	0	9	2
Common Gull	2	33	7	5	3	0
Coot	0	2	0	2	0	0
Fieldfare	0	0	65	0	212	68
Golden Plover	0	0	137	0	2	0
Great Black-backed Gull	0	2	2	0	0	0
Herring Gull	113	192	74	96	91	154
Lapwing	0	0	99	0	0	0
Lesser Black-backed Gull	0	0	7	21	7	7
Little Egret	1	2	1	1	0	0
Little Grebe	0	0	0	1	1	0
Mallard	0	8	2	2	1	0
Mediterranean Gull	0	2	0	0	0	0
Moorhen	0	0	0	1	0	0
Mute Swan	0	2	1	1	0	0
Oystercatcher	37	18	3	0	0	0
Red Kite	0	0	3	0	1	0
Redwing	0	0	720	0	13	84
Reed Bunting	0	0	0	0	0	1
Rook	0	0	0	0	5	0
Snipe	0	2	8	0	7	0
Starling	0	0	0	350	0	0
Teal	0	4	0	0	0	0
Yellowhammer	0	0	2	0	2	2

3.1.2.3.1 Grey Seal (*Halichoerus grypus*) [1364]

Grey seal is a large marine mammal which uses the Irish coast to breed, moult, and winter in throughout the year. During breeding they use terrestrial habitats while their pups develop and remain on shore for several weeks (Cronin *et al.* 2004). They are a highly mobile predator whose habitat ranges from estuaries to open ocean, using terrestrial habitats as well for hauling out and breeding.

A search of the NBDC found no records of grey seal as the 2km buffer did not extend to any coastal habitats (NBDC 2024).

Grey seal is a QI for Lambay Island SAC which has the principal breeding colony of grey seal on Ireland's east coast with a population of approximately 200-250 individuals (NPWS 2014b).

3.1.2.3.2 Harbour Seal (*Phoca vitulina*) [1365]

Harbour seal is a large marine mammal which uses the Irish coast to breed, moult, and winter throughout the year. During breeding pups can swim immediately with their mothers and are mobile (Cronin *et al*. 2004). They are a highly mobile predator whose habitat ranges from estuaries to open ocean, using terrestrial habitats as well for hauling out and breeding.

A search of the NBDC found no records of harbour seal as the 2km buffer did not extend to any coastal habitats (NBDC 2024).

The QI for Lambay Island SAC is harbour seal which has a regionally important breeding colony with a population of approximately 50 individuals being recorded at this site (NPWS 2014b).

3.1.2.3.3 Harbour Porpoise (*Phocoena phocoena*) [1351]

The species is a highly mobile predator whose habitat ranges from estuaries to open ocean; their range can be hundreds or thousands of kilometres. Foraging habitat is associated with tidal currents and eddies and so it is common for porpoise to occur close to shore (NPWS 2013m).

A search of the NBDC found no records of harbour porpoise as the 2km buffer did not extend to any coastal habitats (NBDC 2024).

The population size of the QI harbour porpoise at Rockabill to Dalkey Island SAC is unknown. A survey in 2016 estimated that the population density in this site was 1.55 porpoise per km^2 (O'Brien and Berrow 2016).

3.1.2.3.4 Arctic tern (*Sterna paradisaea*) [A194]

Arctic tern is an amber listed bird species from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). This species is exclusively a breeding visitor to Ireland arriving in April/May and remaining until the autumn.

The site visit did not record Arctic tern; although the survey was for wintering birds and Arctic tern would not occur in this time frame. As the habitats recorded within the study area (as outlined in Section 3.1.1) were not considered suitable in terms of habitat type and/or size to form areas of functionally connected habitat to the European sites, no further surveys for this species were deemed necessary.

A search of the NBDC found one record of Arctic tern from 2001 within 2km of the Proposed Development east of Belcamp Substation (NBDC 2024).

This species is a QI of South Dublin Bay and River Tolka Estuary SPA where it is known to breed on man-made structures north of Poolbeg known as the ESB Dolphin. There is a current management plan in place for this breeding colony and this structure has been added into the boundary of the SPA. This SPA is recognised as an important passage site for migratory terns with 20,000 Arctic terns recorded in 1996 (NPWS 2015b). There is no I-WeBS data for Arctic tern for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Rockabill SPA which abuts this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dalkey Islands SPA is an important breeding site for this species. A survey in 2003 found 24 breeding pairs on the island (NPWS 2015e). Dalkey Islands is not a registered I-WeBS site so there is no data available.

Rockabill SPA is an important breeding site for this species. A survey in 2010 found 250 breeding pairs on the island (NPWS 2015d). There is no I-WeBS data for Arctic tern for this site.

3.1.2.3.5 Bar-tailed godwit (*Limosa lapponica*) [A157]

Bar-tailed godwit is on the red list of bird species for the wintering populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021). Bar-tailed godwit is known to have a moderate site fidelity (NPWS 2014f).

The site visit did not record any bar-tailed godwit along the Proposed Development.

A search of the NBDC found three records of bar-tailed godwit within 2km of the Proposed Development, the most recent of which was from 2003(NBDC online database).

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 150 individuals in the winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 49 individuals at this site.

Baldoyle Bay SPA has a population of approximately 350 individuals in the winter which is a population size of national importance (NPWS 2014c). Recent I-WeBS data from 2022/23 found a peak count of 80 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 1,530 individuals in the winter which is a population size of international importance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 1054 individuals at this site.

North Bull Island SPA has an internationally important population of 1,529 individuals (NPWS 2014d). There is no I-WeBS data for bar-tailed godwit for this site.

Dundalk Bay SPA has an internationally important population of 1,950 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 1,935 individuals at this site.

3.1.2.3.6 Black-headed gull (*Chroicocephalus ridibundus*) [A179]

Black-headed gull is on the amber list of bird species for the wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021). Black-headed gull are known to have a moderate site fidelity (NPWS 2014f).

The site visit found a maximum peak count of 394 individuals across the Proposed Development in November 2022.

A search of the NBDC found five records of black-headed gull within 2km of the Proposed Development, the most recent of which was from 2011.

The population data of the European sites for which this species is designated are as follows:

North Bull Island SPA has a population of approximately 3,040 individuals throughout the year which is a population size of national importance (NPWS 2014d). There is no I-WeBS data for black-headed gull for this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 2,200 individuals throughout the year which is a population size of national importance (NPWS 2015b). There is no I-WeBS data for black-headed gull for this site.

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 508 individuals (NPWS 2023b). This site is also a key resource for the summering/breeding population of this species. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dundalk Bay SPA has a population of 6,643 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 870 individuals at this site.

3.1.2.3.7 Black-tailed godwit (*Limosa limosa*) [A156]

Black-tailed godwit is an on the red list of bird species for their wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Black-tailed godwit are known to have a moderate site fidelity (NPWS 2014f).

The site visit found a maximum peak count of 23 individuals across the Proposed Development in October 2022.

A search of the NBDC found three records of black-tailed godwit within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 410 individuals in the winter which is a population size of international importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 489 individuals at this site.

North Bull Island SPA has an internationally important population of 367 individuals (NPWS 2014d). There is no I-WeBS data for black-tailed godwit for this site.

Rogerstown Estuary SPA has a nationally important population of 195 wintering individuals. It is also an important passage site for this species (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 213 individuals at this site.

Boyne Estuary SPA has an internationally important population of 471 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of 211 individuals at this site.

Dundalk Bay SPA has an internationally important population of 1,100 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 2,944 individuals at this site.

3.1.2.3.8 Common gull (*Larus canus*) [A182]

Common gull is an on the amber list of bird species for their breeding and wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Common gulls are known to have a moderate site fidelity (NPWS 2011f).

The site visit found a maximum peak count of 33 individuals across the Proposed Development in November 2022.

A search of the NBDC found no records of common gull.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 2,866 individuals (NPWS 2023b). This site is also a key resource for the summering/breeding population of this species. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dundalk Bay SPA has a population of 551 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 131 individuals at this site.

3.1.2.3.9 Common scoter (*Melanitta nigra*) [A065]

Common scoter is an on the red list of bird species for their breeding and wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any common scoter along the Proposed Development.

A search of the NBDC found one record of common scoter within 2km of the Proposed Development in 2003.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2018 estimated a wintering population of 14,567 individuals (NPWS 2023b) which is considered an internationally important population. This site is also a key resource for the summering/breeding population of this species. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dundalk Bay SPA has a population of 581 individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 174 individuals at this site.

3.1.2.3.10 Common tern (*Sterna hirundo*) [A193]

Common terns are on the amber list of bird species for the breeding populations from the most recent assessment of the birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record common tern; although the survey was for wintering birds and common tern would not occur in this time frame. As the habitats recorded within the study area (as outlined in Section 3.1.1) were not considered suitable in terms of habitat type and/or size to form areas of functionally connected habitat to the European sites, no further surveys for this species were deemed necessary.

A search of the NBDC found no records of common tern.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of South Dublin Bay and River Tolka Estuary SPA where it is known to breed on man-made structures north of Poolbeg known as the ESB Dolphin. There is a current management plan in place for this breeding colony which had 400 breeding pairs in 2007 and this structure has been added into the boundary of the SPA. This SPA is recognised as an important passage site for migratory terns with 5,000 arctic terns recorded in 1999 (NPWS 2015b). There is no I-WeBS data for common tern for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Rockabill SPA and the South Dublin Bay and River Tolka Estuary SPA which abut this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dalkey Islands SPA is an important breeding site for this species. A survey in 2003 found 62 breeding pairs on the island (NPWS 2015e). Dalkey Islands is not a registered I-WeBS site so there is no data available.

Rockabill SPA is an important breeding site for this species. A survey in 2010 found 1,940 breeding pairs on the island (NPWS 2015d). There is no I-WeBS data for common tern for this site.

3.1.2.3.11 Cormorant (*Phalacrocorax carbo*) [A017]

Cormorant is on the amber list of bird species for the breeding and wintering populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021).

The site visit did not record any cormorant along the Proposed Development.

A search of the NBDC found five records of cormorant within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

In Ireland's Eye SPA approximately 440 breeding pairs were recorded in 2001 which is a population size of national importance (NPWS 2011a). Ireland's Eye is not a registered I-WeBS site so there is no data available.

Lambay Island SPA has an internationally important breeding population of 674 pairs with a 2004 survey finding 352 pairs (NPWS 2011c). Recent I-WeBS data from 2013/14 found a peak count of 200 individuals at this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Skerries Island SPA, 'reland's Eye SPA and Lambay Island SPA which abut this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Skerries Islands SPA has an internationally important breeding population of 558 pairs and a nationally important wintering population of 391 individuals (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 20 individuals at this site.

3.1.2.3.12 Curlew (*Numenius arquata*) [A160]

Curlew is on the red list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. Stanbury A. and Lewis L. 2021). Curlew are known to have a high site fidelity (NPWS 2014f).

The site visit did not record any curlew along the Proposed Development.

A search of the NBDC found four records of curlew within 2 km of the Proposed Development, the most recent of which was from 2011.

The population data of the European sites for which this species is designated are as follows:

North Bull Island SPA has a population of approximately 940 individuals in the winter which is a population size of national importance (NPWS 2014d). Recent I-WeBS data from 2022/23 found a peak count of 405 individuals at this site.

Dundalk Bay SPA has a nationally important population of 1,264 wintering individuals. It is also an important passage site for this species (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 460 individuals at this site.

3.1.2.3.13 Dunlin (*Calidris alpina*) [A149]

Dunlin is on the red list of bird species for wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021). Dunlins are known to have a high site fidelity (NPWS 2014f).

The site visit did not record any dunlin along the Proposed Development.

A search of the NBDC found three records of dunlin within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 1,590 individuals in the winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 777 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 4,150 individuals in the winter which is a population size of national importance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 11,107 individuals at this site.

North Bull Island SPA has a nationally important population of 4,146 wintering individuals (NPWS 2014d). There is no I-WeBS data for dunlin for this site.

Rogerstown Estuary SPA has a nationally important population of 2,745 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 3427 individuals at this site.

Dundalk Bay SPA has a nationally important population of 11,518 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 4407 individuals at this site.

3.1.2.3.14 Fulmar (*Fulmarus glacialis*) [A009]

Fulmar is on the green list of bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any fulmar along the Proposed Development.

A search of the NBDC found no records within 2km of the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

Lambay Island SPA has a nationally important breeding population of 585 pairs with a survey in 2004 finding 727 pairs (NPWS 2011c). There is no I-WeBS data for fulmar for this site.

This species is a QI of North-West Irish Sea SPA which surveys in 2016 estimated a wintering population of 506 individuals (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.15 Golden plover (*Pluvialis apricaria*) [A140]

Golden plover is on the red list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Golden plover is known to have a moderate site fidelity (NPWS 2014f).

The site visit recorded a maximum peak count of 137 individuals along the Proposed Development.

A search of the NBDC found two records of golden plover within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 1840 individuals over winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2021/22 found a peak count of 27 individuals at this site.

Baldoyle Bay SPA has a population of approximately 2120 individuals over winter which is a population size of national importance (NPWS 2014c). Recent I-WeBS data from 2022/23 found a peak count of 292 individuals at this site.

North Bull Island SPA has a population of approximately 2030 individuals over winter which is a population size of national importance (NPWS 2014d). Recent I-WeBS data from 2022/23 found a peak count of 490 individuals at this site.

River Nanny and Shoreline SPA has a nationally important population of 1,759 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2019/20 found a peak count of 2 individuals at this site.

Boyne Estuary SPA has a nationally important population of 6,070 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2019/20 found a peak count of 600 individuals at this site.

Dundalk Bay SPA has a population of approximately 5,967 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 5730 individuals at this site.

3.1.2.3.16 Goldeneye (*Bucephala clangula*) [A067]

Goldeneye is on the red list of bird species for wintering from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any goldeneye along the Proposed Development.

A search of the NBDC found three records of goldeneye within 2 km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 215 individuals over winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 5 individuals at this site.

3.1.2.3.17 Great black-backed gull (*Larus marinus*) [A187]

Great black-backed gull is on the amber list of bird species for their breeding and wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded a maximum peak count of 2 individuals along the Proposed Development.

A search of the NBDC found three records of great black-backed gull within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 2,096 individuals (NPWS 2023b). This site is also a key resource for the summering/breeding population of this species. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.18 Great crested grebe (*Podiceps cristatus*) [A005]

Great crested grebe is on the amber list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any great crested grebe along the Proposed Development.

A search of the NBDC found four records of great crested grebe within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 60 individuals over winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 60 individuals at this site.

Dundalk Bay SPA has a nationally important population of 11,518 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of nine individuals at this site.

3.1.2.3.19 Great northern diver (*Gavia immer*) [A003]

Great northern diver is on the amber list of bird species for their wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any great northern diver along the Proposed Development.

A search of the NBDC found one record of great northern diver within 2km of the Proposed Development in 2003.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 230 individuals (NPWS 2023b) which is a population of international importance. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.20 Grey plover (*Pluvialis squatarola*) [A141]

Grey plovers are on the red list of bird species for the wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any grey plover along the Proposed Development.

A search of the NBDC found two records of grey plover within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 200 individuals over winter which is a population size of national importance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 78 individuals at this site.

Baldoyle Bay SPA has a population of approximately 200 individuals over winter which is a population size of national importance (NPWS 2014c). Recent I-WeBS data from 2022/23 found a peak count of 7 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 520 individuals over winter which is a population size of national importance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 338 individuals at this site.

North Bull Island SPA has a nationally important population of 517 individuals (NPWS 2014d). There is no I-WeBS data for grey plover for this site.

Rogerstown Estuary SPA has a nationally important population of 229 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 71 individuals at this site.

Boyne Estuary SPA has a nationally important population of 146 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2019/20 found a peak count of one individual at this site.

Dundalk Bay SPA has a nationally important population of 204 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 385 individuals at this site.

3.1.2.3.21 Greylag *(Anser anser*) [A043]

Greylag goose are on the amber list of bird species for the wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Greylag goose is known to have a moderate site fidelity (NPWS, 2011f).

The site visit did not record any greylag along the Proposed Development.

A search of the NBDC found no records within 2km of the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

In Rogerstown Estuary SPA has a population of approximately 160 individuals over winter which is a population size of international importance (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 1 individual at this site.

Lambay Island SPA has a population of approximately 310 individuals over winter which is a population size of international importance (NPWS 2011c). There is no I-WeBS data for greylag goose for this site.

Dundalk Bay SPA has a population of approximately 435 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 550 individuals at this site.

3.1.2.3.22 Guillemot (*Uria aalge*) [A199]

Guillemot is on the amber list of bird species for the breeding populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any guillemot along the Proposed Development.

A search of the NBDC found two records of guillemot within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Ireland's Eye SPA has a population of approximately 1470 breeding pairs, it is not said whether this is of national or international significance (NPWS 2011a). Ireland's Eye is not a registered I-WeBS site so there is no data available.

Lambay Island SPA has an internationally important breeding population of 40,705 pairs with a survey in 2004 finding 38,999 pairs (NPWS 2011c). There is no I-WeBS data for guillemot for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Lambay Island SPA and Ireland's Eye SPA which abut this SPA. It is also an important site for this species wintering population, surveys in 2016 estimated a wintering population of 13,914 individuals (NPWS, 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.23 Herring gull (*Larus argentatus*) [A184]

Herring gull is on the amber list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded a maximum peak count of 192 individuals along the Proposed Development.

A search of the NBDC found five records of herring gull within 2 km of the Proposed Development, the most recent of which was from 2011.

The population data of the European sites for which this species is designated are as follows:

Ireland's Eye SPA has a population of approximately 250 breeding pairs, it is not said whether this is of national or international significance (NPWS 2011a). Ireland's Eye is not a registered I-WeBS site so there is no data available.

Lambay Island SPA has a population of approximately 1800 breeding pairs and 2400 wintering individuals, which is a population of national significance (NPWS 2011c). Recent I-WeBS data from 2013/14 found a peak count of 300 individuals at this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Skerries Island SPA, 'reland's Eye SPA and Lambay Island SPA which abut this SPA. It is also an important site for this species wintering population, surveys in 2016 estimated a wintering population of 6,893 individuals (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Skerries Islands SPA has a nationally important breeding population of 300 pairs and a nationally important wintering population of 560 individuals (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 300 individuals at this site.

River Nanny and Shoreline SPA has a nationally important population of 609 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2020/21 found a peak count of 321 individuals at this site.

Dundalk Bay SPA has a population of approximately 754 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 243 individuals at this site.

3.1.2.3.24 Kittiwake (*Rissa tridactyla*) [A188]

Kittiwake is on the amber list of bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit did not record any kittiwake along the Proposed Development.

A search of the NBDC found two records of kittiwake within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

In Ireland's Eye SPA it was found in 2001 that this site has a population of approximately 1020 breeding pairs, which is a population of national significance (NPWS 2011a). Ireland's Eye is not a registered I-WeBS site so there is no data available.

Howth Head Coast SPA has a population of approximately 2270 breeding pairs, which is a population of national significance (NPWS 2011b). Howth Head is not a registered I-WeBS site so there is no data available.

Lambay Island SPA has a nationally important breeding population of 4,091 pairs with a survey in 2004 finding 3,947 pairs (NPWS 2011c). There is no I-WeBS data for kittiwake for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Ireland's Eye SPA and Lambay Island SPA and Howth Head SPA which abut this SPA. It is also an important site for this species wintering population, surveys in 2016 estimated a wintering population of 944 individuals (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.25 Knot (*Calidris canutus*) [A143]

Knot is on the red list of bird species for wintering populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert G. *et al* 2021). Knots are known to have a moderate site fidelity (NPWS 2014f).

The site visit did not record any knot along the Proposed Development.

A search of the NBDC found one record of knot within 2km of the Proposed Development in 2001.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 915 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 238 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 1,840 individuals over winter, which is a population of national significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 3,540 individuals at this site.

North Bull Island SPA has a nationally important population of 2,837 individuals (NPWS 2014d). There is no I-WeBS data for knot for this site.

Rogerstown Estuary SPA has a nationally important population of 2,454 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 600 individuals at this site.

River Nanny and Shoreline SPA has a nationally important population of 1,140 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2020/21 found a peak count of 356 individuals at this site.

Boyne Estuary SPA has a nationally important population of 1,944 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of four individuals at this site.

Dundalk Bay SPA has an internationally important population of 9,710 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 4,228 individuals at this site.

3.1.2.3.26 Lapwing (*Vanellus vanellus*) [A142]

Lapwing is on the red list of bird species for both wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert G. *et al* 2021). Lapwing are known to have a moderate site fidelity (NPWS 2011f).

The site visit recorded a maximum peak count of 99 individuals along the Proposed Development.

A search of the NBDC found four records of lapwing within 2km of the Proposed Development, the most recent of which was from 2011.

The population data of the European sites for which this species is designated are as follows:

Boyne Estuary SPA has a nationally important population of 4,771 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of 93 individuals at this site.

Dundalk Bay SPA has a population of approximately 4,892 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 2,250 individuals at this site.

3.1.2.3.27 Lesser black-backed gull (*Larus fuscus*) [A183]

Lesser black-backed gull is on the red list of bird species for both wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert G. *et al* 2021).

The site visit recorded a maximum peak count of 21 individuals along the Proposed Development.

A search of the NBDC found two records of lesser black-backed gull within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Lambay Island SPA has a population of approximately 310 breeding pairs, which is a population of national significance (NPWS 2011c). There is no I-WeBS data for lesser black-backed gull for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Lambay Island SPA which abuts this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.28 Light-bellied Brent goose (*Branta bernicla hrota*) [A046]

Light-bellied Brent goose is an amber listed bird species from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. *et al* 2021). This species is exclusively a winter visitor to Ireland from high-Arctic Canada with nearly the entire population wintering in Ireland light-bellied brent geese are known to have a high site fidelity (NPWS 2014f).

The site visit recorded a maximum peak count of 240 individuals along the Proposed Development.

A search of the NBDC found four records of light-bellied Brent geese within 2 km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 1100 individuals over winter, which is a population of international significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 533 individuals at this site.

Baldoyle Bay SPA has a population of approximately 730 individuals over winter, which is a population of international significance (NPWS 2014c). Recent I-WeBS data from 2022/23 found a peak count of 212 individuals at this site.

North Bull Island SPA has a population of approximately 1,550 individuals over winter, which is a population of international significance (NPWS 2014d). Recent I-WeBS data from 2022/23 found a peak count of 3,066 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 525 individuals over winter, which is a population of international significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 3,066 individuals at this site.

Rogerstown Estuary SPA has a population of approximately 1,070 individuals over winter, which is a population of international significance (NPWS 2014e). Recent I-WeBS data from 2021/22 found a peak count of 1,764 individuals at this site.

Skerries Islands SPA has an internationally important population of 242 wintering individuals (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 200 individuals at this site.

Dundalk Bay SPA has a population of approximately 370 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 916 individuals at this site.

3.1.2.3.29 Little gull (*Anas platyrhynchos*) [A053]

Little gull is an amber listed bird species for passage from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. *et al* 2021).

The site visit recorded no little gull along the Proposed Development.

A search of the NBDC found no of little gull along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 391 individuals (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.30 Little tern (*Sterna albifrons*) [A195]

Little tern is an amber listed bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. *et al* 2021).

The site visit recorded no little tern along the Proposed Development; although, this survey was for wintering birds and little tern would not occur in this time frame. As the habitats recorded within the study area (as outlined in Section 3.1.1) were not considered suitable in terms of habitat type and/or size to form areas of functionally connected habitat to the European sites, no further surveys for this species were deemed necessary.

A search of the NBDC found no records of little tern along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Boyne Estuary SPA which abuts this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Boyne Estuary SPA has a nationally important breeding population of 14 pairs (NPWS 2015f). There is no I-WeBS data for little tern for this site.

3.1.2.3.31 Mallard (*Anas platyrhynchos)* [A053]

Mallard is an amber listed bird species for breeding and wintering from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded a maximum peak count of 8 individuals along the Proposed Development.

A search of the NBDC found four records of mallard within 2km of the Proposed Development, the most recent of which was from 2012.

The population data of the European sites for which this species is designated are as follows:

Dundalk Bay SPA has a nationally important population of 765 individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 371 individuals at this site.

3.1.2.3.32 Manx shearwater (*Puffinus puffinus*) [A013]

Manx shearwater is an amber listed bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded no Manx Shearwater along the Proposed Development although, this survey was for wintering birds and little tern would not occur in this time frame. As the habitats recorded within the study area (as outlined in Section 3.1.1) were not considered suitable in terms of habitat type and/or size to form areas of functionally connected habitat to the European sites, no further surveys for this species were deemed necessary.

A search of the NBDC no Manx Shearwater along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA and surveys in 2016 estimated a wintering population of 13,010 individuals (NPWS, 2023b) which is a population of international importance. North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.33 Oystercatcher (*Haematopus ostralegus*) [A130]

Oystercatchers are on the red list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. Stanbury A. and Lewis L. 2021). Oystercatchers are known to have a high site fidelity (NPWS 2014f).

The site visit recorded a maximum peak count of 37 individuals along the Proposed Development.

A search of the NBDC found three records of oystercatcher within 2 km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 1,360 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 1,538 individuals at this site.

North Bull Island SPA has a population of approximately 1,780 individuals over winter, which is a population of national significance (NPWS 2014d). Recent I-WeBS data from 2022/23 found a peak count of 2,284 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 1,260 individuals over winter, which is a population of national significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 2,284 individuals at this site.

Rogerstown Estuary SPA has a population of approximately 1,340 individuals over winter, which is a population of national significance (NPWS 2014e). Recent I-WeBS data from 2022/23 found a peak count of 1,224 individuals at this site.

River Nanny and Shoreline SPA has a nationally important population of 1,014 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2020/21 found a peak count of 409 individuals at this site.

Boyne Estuary SPA has a nationally important population of 1,179 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of 549 individuals at this site.

Dundalk Bay SPA has a population of approximately 8,746 individuals in the winter which is a population size of national importance (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 7120 individuals at this site.

3.1.2.3.34 Pintail (*Anas acuta*) [A054]

Pintail is on the red list of bird species for wintering from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Pintails are known to have a weak site fidelity (NPWS 2011f).

The site visit recorded no pintail along the Proposed Development.

A search of the NBDC found two records of pintail within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 60 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 28 individuals at this site.

North Bull Island SPA has a nationally important population of 233 individuals (NPWS 2014d). There is no I-WeBS data for pintail for this site.

Dundalk Bay SPA has a nationally important population of 233 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 226 individuals at this site.

3.1.2.3.35 Puffin (*Fratercula arctica*) [A204]

Puffin is on the amber list of bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert G. Stanbury A. and Lewis L. 2021).

The site visit recorded no puffin along the Proposed Development.

A search of the NBDC found no records of puffin along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

Lambay Island SPA has a nationally important breeding population of 265 pairs with a survey in 2004 finding 209 pairs (NPWS 2011c). There is no I-WeBS data for puffin for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Lambay Island SPA which abuts this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.36 Purple sandpiper (*Calidris maritima*) [A148]

Purple sandpiper is a green listed bird species for wintering from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021

The site visit recorded no purple sandpiper along the Proposed Development.

A search of the NBDC found no of purple sandpiper along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

Skerries Islands SPA has a nationally important population of 46 wintering individuals (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 17 individuals at this site.

This is a QI species of Rockabill SPA where it has an important wintering population of 48 individuals (NPWS 2015d). There is no I-WeBS data for purple sandpiper for this site.

3.1.2.3.37 Razorbill (*Alca torda*) [A200]

Razorbill is on the amber list of bird species for breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded no razorbill along the Proposed Development.

A search of the NBDC found two records of razorbill within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Ireland's Eye SPA recorded a population of approximately 460 breeding pairs in 2001, which is a population of national significance (NPWS 2011a). Ireland's Eye is not a registered I-WeBS site so there is no data available.

Lambay Island SPA has a nationally important breeding population of 2,906 pairs with a survey in 2004 finding 3,805 pairs (NPWS 2011c). There is no I-WeBS data for razorbill for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Lambay Island SPA and Ireland's Eye SPA which abut this SPA. It is also an important site for this species wintering population, surveys in 2016 estimated a wintering population of 4,638 individuals (NPWS, 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.38 Red-breasted merganser (*Mergus serrator*) [A069]

Red-breasted merganser is on the green list of bird species for both wintering and breeding from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021).

The site visit recorded no red-breasted merganser along the Proposed Development.

A search of the NBDC found two records of red-breasted merganser within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 100 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 69 individuals at this site.

Dundalk Bay SPA has a nationally important population of 121 individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 11 individuals at this site.

3.1.2.3.39 Red-throated diver (*Gavia stellata*) [A001]

Red-throated diver is on the amber list of bird species for the wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021).

The site visit recorded no red-throated diver along the Proposed Development.

A search of the NBDC found no red-throated diver along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

This species is a QI of North-West Irish Sea SPA which surveys in 2016 estimated a wintering population of 538 individuals (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

3.1.2.3.40 Redshank (*Tringa totanus*) [A162]

Redshank is on the red list of bird species for the wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021). Redshank are known to have a moderate site fidelity (NPWS 2014f).

The site visit recorded no redshank along the Proposed Development.

A search of the NBDC found three records of redshank within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 580 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 478 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 710 individuals over winter, which is a population of national significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 1,038 individuals at this site.

North Bull Island SPA has a nationally important population of 1,431 individuals. It is also an important passage site for this species (NPWS 2014d). There is no I-WeBS data for redshank for this site.

Rogerstown Estuary SPA has a nationally important population of 490 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 452 individuals at this site.

Boyne Estuary SPA has a nationally important population of 583 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of 280 individuals at this site.

Dundalk Bay SPA has a nationally important population of 1,659 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 771 individuals at this site.

3.1.2.3.41 Ringed plover (*Charadrius hiaticula*) [A137]

Ringed plover is on the amber list of bird species for both wintering and breeding populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Ringed plovers are known to have a high site fidelity (NPWS 2011f).

The site visit recorded no ringed plover along the Proposed Development.

A search of the NBDC found two records of ringed plover within 2km of the Proposed Development, the most recent of which was from 2003.

The population data of the European sites for which this species is designated are as follows:

Baldoyle Bay SPA has a population of approximately 220 individuals over winter, which is a population of national significance (NPWS 2014c). Recent I-WeBS data from 2021/22 found a peak count of 73 individuals at this site.

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 160 individuals over winter, which is a population of national significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 92 individuals at this site.

Rogerstown Estuary SPA has a nationally important population of 188 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 212 individuals at this site.

River Nanny and Shoreline SPA has a nationally important population of 185 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2020/21 found a peak count of 122 individuals at this site.

Dundalk Bay SPA has a nationally important population of 151 individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 41 individuals at this site.

3.1.2.3.42 Roseate tern (*Sterna dougallii*) [A192]

Roseate terns are on the amber list of bird species for the breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021).

The site visit recorded no roseate tern along the Proposed Development; although this survey was for wintering birds and Arctic tern would not occur in this time frame. As the habitats recorded within the study area (as outlined in Section 3.1.1) were not considered suitable in terms of habitat type and/or size to form areas of functionally connected habitat to the European sites, no further surveys for this species were deemed necessary.

A search of the NBDC found no records of Roseate tern along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

South Dublin Bay and River Tolka Estuary SPA is recognised as an important passage site for migratory terns with 2,000 Roseate terns recorded in 1999 (NPWS 2015b). There is no I-WeBS data for roseate tern for this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Rockabill SPA which abuts this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Dalkey Islands SPA is an important breeding site for this species. A survey in 2004 found 11 breeding pairs on the island (NPWS 2015e). Dalkey Islands is not a registered I-WeBS site so there is no data available.

Rockabill SPA is an important breeding site for this species. A survey in 2010 found 1,093 breeding pairs on the island (NPWS 2015d). There is no I-WeBS data for roseate tern for this site.

3.1.2.3.43 Sanderling (*Calidris alba*) [A144]

Sanderling is on the green list of bird species for wintering populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021). Sanderling is known to have a high site fidelity (NPWS 2012e).

The site visit recorded no sanderling along the Proposed Development.

A search of the NBDC found no records of sanderling along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

South Dublin Bay and River Tolka Estuary SPA has a population of approximately 350 individuals over winter, which is a population of national significance (NPWS 2015b). Recent I-WeBS data from 2022/23 found a peak count of 534 individuals at this site.

North Bull Island SPA has a nationally important population of 141 individuals (NPWS 2014d). There is no I-WeBS data for sanderling for this site.

River Nanny and Shoreline SPA has a nationally important population of 240 wintering individuals (NPWS 2015g). Recent I-WeBS data from 2020/21 found a peak count of 81 individuals at this site.

Boyne Estuary SPA has a nationally important population of 81 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2019/20 found a peak count of 500 individuals at this site.

3.1.2.3.44 Shag (*Phalacrocorax aristotelis*) [A018]

Shag is on the amber list of bird species for wintering and breeding populations from the most recent assessment of the birds of conservation concern In Ireland (Gilbert *et al.* 2021).

The site visit recorded no shag along the Proposed Development.

A search of the NBDC found no records of shag along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

Lambay Island SPA has an internationally important breeding population of 1,122 pairs with a survey in 2004 finding 1,734 pairs (NPWS 2011c). Recent I-WeBS data from 2013/14 found a peak count of 200 individuals at this site.

This species is a QI of North-West Irish Sea SPA which is an important foraging resource for this species as it breeds within the Skerries Island SPA and Lambay Island SPA which abut this SPA (NPWS 2023b). North-West Irish Sea is not a registered I-WeBS site so there is no data available.

Skerries Islands SPA has a nationally important breeding population of 100 pairs (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 45 individuals at this site.

3.1.2.3.45 Shelduck (*Tadorna tadorna*) [A048]

Shelduck is an amber listed bird species for breeding and wintering populations in the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Shelducks are a resident species which breed in open areas beside large waterbodies. Winter migrants increase population numbers from October to March with shelduck wintering on sheltered estuaries or tidal mudflats. Shelduck have a high site fidelity (NPWS 2012c).

The site visit recorded no shelduck along the Proposed Development.

A search of the NBDC found six records of shelduck within 2km of the Proposed Development, the most recent of which was recorded in 2003.

The population data of the European sites for which this species is designated are as follows:

Malahide Estuary SPA has a population of approximately 440 individuals over winter, which is a population of national significance (NPWS 2013e). Recent I-WeBS data from 2022/23 found a peak count of 216 individuals at this site.

Baldoyle Bay SPA has a population of approximately 150 individuals over winter, which is a population of national significance (NPWS 2014c). Recent I-WeBS data from 2022/23 found a peak count of 227 individuals at this site.

North Bull Island SPA has a nationally important population of 1,259 individuals (NPWS 2014d). There is no I-WeBS data for shelduck for this site.

Rogerstown Estuary SPA has a nationally important population of 773 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 814 individuals at this site.

Boyne Estuary SPA has a nationally important population of 218 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2020/21 found a peak count of two individuals at this site.

Dundalk Bay SPA has a nationally important population of 522 individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 493 individuals at this site.

3.1.2.3.46 Shoveler (*Anas clypeata*) [A056]

Shoveler is a red listed bird species for breeding and wintering populations in the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Shovelers have a moderate site fidelity (NPWS 2013j).

The site visit recorded no shoveler along the Proposed Development.

A search of the NBDC found no records of shoveler along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

North Bull Island SPA has a nationally important population of 141 individuals (NPWS 2014d). There is no I-WeBS data for shoveler for this site.

Rogerstown Estuary SPA has a nationally important population of 59 wintering individuals (NPWS 2014e). Recent I-WeBS data from 2020/21 found a peak count of 17 individuals at this site.

3.1.2.3.47 Teal (*Anas crecca*) [A052]

Teal is on the amber list of bird species for their breeding and wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Teals are known to have a weak site fidelity (NPWS 2011f).

The site visit recorded a maximum peak count of four individuals along the Proposed Development.

A search of the NBDC found four records of teal within 2km of the Proposed Development, the most recent of which was recorded in 2003.

The population data of the European sites for which this species is designated are as follows:

North Bull Island SPA has a nationally important population of 953 individuals (NPWS 2014d). There is no I-WeBS data for teal for this site.

Dundalk Bay SPA has a nationally important population of 538 wintering individuals (NPWS 2014g). Recent I-WeBS data from 2020/21 found a peak count of 320 individuals at this site.

3.1.2.3.48 Turnstone (*Arenaria interpres*) [A169]

Turnstone is on the amber list of bird species for their wintering populations from the most recent assessment of birds of conservation concern in Ireland (Gilbert *et al.* 2021). Turnstones are known to have a high site fidelity (NPWS, 2014f).

The site visit recorded no turnstone along the Proposed Development.

A search of the NBDC found no records of turnstone along the Proposed Development.

The population data of the European sites for which this species is designated are as follows:

North Bull Island SPA has a nationally important population of 157 individuals (NPWS 2014d). There is no I-WeBS data for turnstone for this site.

Skerries Islands SPA has a nationally important population of 242 wintering individuals (NPWS 2009). Recent I-WeBS data from 2015/16 found a peak count of 140 individuals at this site.

Boyne Estuary SPA has a nationally important population of 221 wintering individuals (NPWS 2015f). Recent I-WeBS data from 2019/20 found a peak count of one individual at this site.

3.1.2.3.49 Wetland and Waterbirds [A999]

The Birds Directive necessitates the identification and classification of SPAs for rare or vulnerable species listed in Annex I of the Directive, and for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance (Article 4), as found within Malahide Estuary SPA, North Bull Island SPA, Baldoyle Bay SPA and South Dublin Bay and River Tolka Estuary SPA.

The wetlands of northwest Europe are a vital resource for millions of northern and boreal nesting waterbird species that overwinter on these wetlands or visit them when migrating further south. To acknowledge the importance of 'reland's wetlands to wintering waterbirds the term Wetland and Waterbirds can be included as a QI for a SPA that has been designated for wintering waterbirds and/or contains a wetland site of significant importance to one or more of the species of QI. These species may include those that utilise the site during passage, those that are present in months of the year outside of the non-breeding season or species that use the site at certain times only (e.g., as a cold weather refuge).

The wetland habitats can be categorised into four broad types: subtidal; intertidal; supratidal; and lagoon and associated habitats.

The subtidal area lies below the mean low water mark and are predominantly covered by marine water. Subtidal areas are continuously available for benthic and surface feeding waterfowl and piscivorous/other waterbirds. Various waterbirds roost in subtidal areas.

The intertidal area is defined, in this context, as the area contained between the mean high-water mark and the mean low water mark. When exposed or partially exposed by the tide, intertidal habitats provide important foraging areas for many species of waterbirds, especially wading birds, as well as providing roosting/loafing areas. When the intertidal area is inundated by the tide it becomes available for benthic and surface feeding ducks and piscivorous/other waterbirds. During this tidal state this area can be used by various waterbirds as a loafing/roosting resource.

The supratidal area are areas not freqIently inundated by thI tide (i.e. occurring above the mean high watermark) but contain shoreline and coastal habitats and can be regarded as an integral part of the shoreline. Supratidal areas are used by a range of waterbird species as a roosting resource as well as providing feeding opportunities for some species.

The category known as 'lagoon and associated habitats' in this context refers to lagoons and freshwater/brackish lakes and their associated wetland habitats.

Waterbirds, defined as ''birds that are ecologically dependent on wetlands'' (Ramsar Convention 1971), are a diverse group that includes divers, grebes, swans, geese and ducks, gulls, terns, and wading birds.

Malahide Estuary SPA has approximately 765ha of wetland habitat in the form of the estuary, mudflats and sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.5.

Baldoyle Bay SPA has approximately 263ha of wetland habitat in the form of estuaries, mudflats and sandflats and salt marshes which host many wetlands and waterbirds throughout the year, See Section 3.1.2.1.6.

North Bull Island SPA has approximately 2312ha of wetland habitat in the form of lagoons, sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.8.

South Dublin Bay and River Tolka Estuary SPA has 1292ha of wetland habitat in the form of mudflats and sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.9.

Rogerstown Estuary SPA has 646ha of wetland habitat in the form of mudflats and sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.10.

Boyne Estuary SPA has 593ha of wetland habitat in the form of mudflats and sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.17.

River Nanny Estuary and Shore SPA has 230ha of wetland habitat in the form of mudflats and sandflats and salt marshes which host its QI, wetlands and waterbirds, throughout the year, see Section 3.1.2.1.18

3.1.3 Aquatic Environment

The waterbodies crossed by the Proposed Development are shown in Appendix B Table 9.2. The table shows the waterbodies in the study area according to the EPA maps and the river waterbody Water Framework Directive (WFD) status for the 2016-2021 monitoring period, and the risk rating where available (EPA 2023). During the habitat classification surveys summarised in Section 2.2 it was found that a number of tributaries to these watercourses, which were mapped as being directly adjacent to or being crossed by the Proposed Development, were no longer present in these locations. These tributaries had either been filled in and were now agricultural fields or were present as drainage ditches which were connected to the river downstream.

Relevant WFD waterbodies:

- The Tolka_020 was assigned moderate status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Dunboyne Stream_010 was assigned poor status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Pinkeen_010 was assigned moderate status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Ward_020 was assigned moderate status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Ward_010 was assigned poor status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Ward_030 was assigned moderate status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives;
- The Sluice_010 was assigned poor status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives; and
- The Mayne_010 was assigned poor status in the WFD river waterbody status monitoring period 2016-2021 and is at risk of not achieving the WFD objectives.

3.1.4 Invasive Species

During the desk basked search of the NBDC undertaken as per the methodology outlined in Section 2.1, no invasive flora were found within 200m of the Proposed Development (professional opinion along with the CIEEM Guidelines (CIEEM 2018) considered 200m to be sufficient to identify direct impacts from invasive species at this distance).

Desk-based search of invasive fauna within 2km of the Proposed Development found three records of high impact invasive fauna which are Third Schedule (EU 2011) invasive species in the last 15 years, see Table 3.3.

Table 3.3: Invasive Species Records from the NBDC Review of the Proposed Development and the Adjacent Area

Species Name	Scientific Name	No. Records	Most Recent Record	Impact Level
Invasive Flora within 200m				
No records returned.				
Invasive Fauna within 2km				
Brown rat	*Rattus norvegicus*	1	02/10/2012	High Impact Invasive Species
Eastern grey squirrel	*Sciurus carolinensis*	6	31/12/2012	High Impact Invasive Species
Harlequin ladybird	*Harmonia axyridis*	1	02/07/2021	High Impact Invasive Species
European rabbit	*Oryctolagus cuniculus*	9	24/06/2018	Medium Impact Invasive Species

Species Name	Scientific Name	No. Records	Most Recent Record	Impact Level
Jenkins' spire snail	*Potamopyrgus antipodarum*	1	21/08/2013	Medium Impact Invasive Species

The site walk-over found four Third Schedule (EU 2011) invasive species within 150m of the Proposed Development, see Table 3.4. A further four medium impact invasive species not on the Third Schedule were also observed. However, given the large intervening distance between the Proposed Development and the European sites there is no risk that these invasives will cause significant impacts to these sites (the closest European site, Malahide Estuary SAC, is located 3.6km from the Proposed Development which is outside of the ZoI for invasive species).

Table 3.4: Invasive Species Results from the Walkover Surveys

Common Name	Scientific Name	Location(s)	Description
Giant Hogweed	*Heracleum mantegazzianum*	O 12480 45878	Mature 5x1m stand in a refuse pile.
		O 12516 45903	Juvenile individuals scattered throughout refuse pile.
Japanese knotweed	*Reynoutria japonica*	O 02047 43698	Signposted area for Japanese knotweed.
		O 16226 44571	Mature 30x3m stand in a private landowner's back garden.
Rhododendron	*Rhododendron ponticum*	O 05661 45435	1x1m individual growing over a river.
Spanish bluebell	*Hyacinthoides hispanica*	O 13457 44625	Scattered along a road verge.
		O 13256 44709	Scattered along a road verge.
Three-cornered leek	*Allium triquetrum*	N 95657 44458	Stands scattered along road verge underneath a mature treeline.

4. Conclusion of Screening for Appropriate Assessment

The Screening Report for AA of the Proposed Development is included as a standalone document in the planning application pack. The assessment of LSEs, discussed in that report, is presented in Table 4.1.

Following an assessment of the relevant objective scientific information, applying the precautionary principle and objective criteria, the professional opinion of the authors of the AA Screening Report concluded that it was not possible to exclude that the Proposed Development, alone and in-combination with other plans or projects, will have a significant effect on the following European sites in view of the sites' conservation objectives:

1. Malahide Estuary SAC;
2. Baldoyle Bay SAC;
3. Malahide Estuary SPA;
4. Baldoyle Bay SPA;
5. North-west Irish Sea SPA;
6. North Bull Island SPA;
7. South Dublin Bay and River Tolka Estuary SPA;
8. Rogerstown Estuary SPA;
9. Ireland's Eye SPA;
10. Lambay Island SPA;
11. Skerries Islands SPA;
12. River Nanny Estuary and Shore SPA;
13. Boyne Estuary SPA; and
14. Dundalk Bay SPA.

Following an assessment of the relevant objective scientific information, applying the precautionary principle and objective criteria, the professional opinion of the authors of the AA Screening Report concluded that there was no potential for LSEs for an additional five European sites:

15. Rockabill to Dalkey Island SAC;
16. Lambay Island SAC;
17. Howth Head Coast SPA;
18. Dalkey Islands SPA; and
19. Rockabill SPA.

Although there was hydrological linkage, significant effects from potential pollution were considered *de minimus* due to the intervening distance and dilution rates of estuary and sea between the Proposed Development and any of the European sites. However, the potential for habitat degradation and mortality from a cumulative pollution effect from the Proposed Development in-combination with another development is still considered and so these sites were carried through for further examination in the in-combination assessment in Table 7.1.

The potential for significant effects on the above-named European sites could not be excluded, including the potential for significant effects associated with:

- Changes in water quality because of a pollution event from spillages, sedimentation/ silt run off and fuel/ oil leaks entering watercourses during construction works impacting on QI habitats and QI bird species protected, supporting and functionally linked habitats associated with the above-named sites; and
- Human-induced disturbance in form of noise and vibrations during the Construction and Operational Phase affecting foraging/ roosting QI bird species in functionally linked habitats.

It was therefore recommended that a Stage 2 AA of the Proposed Development be undertaken. The assessment is required to determine if the Proposed Development could have adverse effects on the integrity of the

European sites above, either alone or in combination with other plans or projects, in light of the sites' structure and function and their conservation objectives. The information presented in this report is intended to provide sufficient information for the relevant competent authority (An Bord Pleanála) to carry out the AA.

Table 4.1: Assessment of Likely Significant Effects for all the European Designated Sites and their QI Habitats and Species Within the ZoI of the Proposed Development. Sites are Listed According to their Distance from the Proposed Development (grey text = qualifying feature which is not considered to be within the ZoI of the Proposed Development)

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
Special Area of Conservation (SAC)				
Malahide Estuary SAC (000205)	Direct distance: 3.6km Hydrological distance: 8km downstream via the River Ward.	Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Ju63aritime maritimi*) [1410] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	**Pathway** There is a hydrological link to QI habitats via the Ward_010, Ward_020 and the Ward_030, with the hydrological link via the Ward_030 being under 10km. Habitats in grey text are not within the ZoI of the Proposed Development as there is no hydrological link as these habitats are terrestrial. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to QI habitats in black text. *Further assessment needed in next column.*	**Habitat degradation – LSEs cannot be excluded.** In the absence of mitigation, potential sedimentation and pollution incidents entering the watercourses hydrologically linked to this site could cause habitat degradation for QI habitats as the hydrological link via the three crossings of the Ward_030 is approximately 8.7km or less in length. **Screened in.**
Baldoyle Bay SAC (000199)	Direct distance: 4km Hydrological distance: 4m downstream via the River Mayne.	Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Ju63aritime maritimi*) [1410]	**Pathway** There is a hydrological link via the Sluice_010 and the Mayne_010. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to QI habitats. *Further assessment needed in next column.*	**Habitat degradation – LSEs cannot be excluded.** In the absence of mitigation, potential sedimentation and pollution incidents entering the watercourses hydrologically linked to this site could cause habitat degradation for QI habitats as the hydrological link via the Sluice_010 is approximately 9.7km in length while the hydrological link via the Mayne_010 is approximately 4.8km in length. **Screened in.**
Rockabill to Dalkey Island SAC (003000)	Direct distance: 8.8km Hydrological distance: 10.5km downstream via the River Mayne, Baldoyle Estuary, and Irish Sea.	Reefs [1170] Harbour Porpoise (*Phocoena phocoena*) [1351]	**Pathway** There is a hydrological link via the Irish Sea which the Ward_010, Ward_020, Ward_030, Sluice_010 and the Mayne_010 connect to. **Habitat loss**	**No LSEs Anticipated: Rationale Provided Below:** **Habitat degradation – LSEs can be excluded** For harbour porpoise although there is a hydrological link, it is 10.5km in length which is considered *de minimus* due to the intervening distance of and dilution rates to cause significant impacts. There is

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			No potential for habitat loss given the works do not take place within this European site. **Mortality** Potential for mortality via a pollution event entering watercourses which are hydrologically linked to supporting habitat for QI species. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to QI habitats and supporting habitat for QI species. *Further assessment needed in next column.* **Disturbance** No potential for disturbance given the works do not take place within or adjacent to this European site or supporting habitat for QI species.	supporting habitat closer to shore (Baldoyle Bay at 4.8km), however the abundance of other supporting habitat closer to this SAC means there is no potential for significant effects from habitat degradation. For QI reef habitat there is no LSE for habitat degradation. Although there is a hydrological link this is considered *de minimus* due to the intervening distance of and dilution rates. The hydrological distance is 10.5km and so a pollution event is unlikely to reach the QI habitat in this European site to cause significant impacts. **Mortality – LSEs can be excluded.** Although there is a hydrological link, it is 10.5km in length which is considered *de minimus* due to the intervening distance of and dilution rates to cause significant impacts. Therefore, there is no potential for LSEs from mortality. **Screened out.**
Lambay Island SAC (000204)	Direct distance: 13.4km Hydrological distance: 22.1km	Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Grey Seal (*Halichoerus grypus)* [1364] Harbour Seal *(Phoca vitulina*) [1365]	**Pathway** There is a hydrological link via the Irish Sea which the Ward_010, Ward_020 and the Ward_030 connect to. Habitats in grey text are not within the ZoI of the Proposed Development as there is no hydrological link as these habitats are terrestrial. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Mortality** Potential for mortality via a pollution event entering watercourses which are hydrologically linked to supporting habitat for QI species. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to QI habitats and supporting habitat for QI species. *Further assessment needed in next column.*	**No LSEs Anticipated: Rationale Provided Below:** **Habitat degradation – LSEs can be excluded** For the two seal species although there is a hydrological link, it is 22.1km in length which is considered *de minimus* due to the intervening distance of and dilution rates to cause significant impacts. There is supporting habitat closer to shore (Baldoyle Bay at 4.8km), however the abundance of other supporting habitat closer to this SAC means there is no potential for significant effects from habitat degradation. For QI reef habitat there is no LSE for habitat degradation. Although there is a hydrological link this is considered *de minimus* due to the intervening distance of and dilution rates. The hydrological distance is 22.1km and so a pollution event is unlikely to reach the QI habitat in this European site to cause significant impacts. **Mortality – LSEs can be excluded**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			Disturbance No potential for disturbance given the works do not take place within or adjacent to this European site or supporting habitat for QI species.	Although there is a hydrological link, it is 22.1km in length which is considered *de minimus* due to the intervening distance of and dilution rates to cause significant impacts. Therefore, there is no potential for LSEs from mortality. **Screened out.**
Special Protection Area (SPA)				
Malahide Estuary SPA (004025)	Direct distance: 3.6km Hydrological distance: 8. km Hydrological distance to potentially impacted supporting habitat[3] from the Proposed Development: Baldoyle SPA: 4.8 km	Great Crested Grebe (*Podiceps cristatus*) [A005] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Pintail (*Anas acuta*) [A054] Goldeneye (*Bucephala clangula*) [A067] Red-breasted Merganser (*Mergus serrator*) [A069] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank65aritim*a totanus*) [A162] Wetland and Waterbirds [A999]	**Pathway** The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat[4] for QI bird species which are known to use agricultural and amenity land to forage and roost in. Additionally, there are three hydrological links from the Proposed Development to this SPA, these are via the Ward_010, Ward_020 and the Ward_030. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked habitat and the SPA itself via a potential pollution incident which travels downstream into the SPA. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation**	**Habitat loss – LSEs can be excluded** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded** In the absence of mitigation, potential sedimentation and pollution incidents entering the watercourses hydrologically linked to this site could cause habitat degradation for QI habitats as the hydrological link via the three crossings of the Ward_030 river which is approximately 8.7km or less in length. In addition, potential sedimentation and pollution incidents may enter supporting habitat in Baldoyle Bay SPA which has also screened in for habitat degradation LSEs. Baldoyle Bay SPA is 2.4km from Malahide Estuary SPA and is within commutable

[3] Supporting habitat is habitat within a protected site (SPA, SAC or NHA) which supports a QI species which is designated by a separate protected site (SPA, SAC or NHA).
[4] Functionally linked habitat is habitat within unprotected land which supports QI species designated by a protected site (SPA, SAC or NHA) in the vicinity of said land.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA and supporting habitat. There is also potential for habitat degradation via a pollution event from run-off into functionally linked, terrestrial habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	distance for QI species. This may cause an increased impact to QI species and their prey which may commute between these two SPAs to forage and roost. These are light-bellied Brent geese, shelduck, golden plover, grey plover and bar-tailed godwit. Lastly, potential sedimentation and pollution incidents may enter functionally linked, terrestrial habitat adjacent to the Proposed Development causing habitat degradation impacting QI species and their prey, namely Brent geese, oystercatcher, and golden plover, which are known to travel inland to forage and roost. These three species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded** The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts into the SPA itself and pollution impacts into supporting/ functionally linked habitats and the SPA itself, leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent to functionally linked habitat adjacent to the Proposed Development impacting QI species, namely light-bellied brent geese, oystercatcher, and golden plover, which are known to travel inland to forage and roost. For other QI birds not mentioned above there is no LSE for disturbance. The works are too far (3.6km) from the SPA itself to cause disturbance and these species are not known to use the habitat adjacent to the works or are not known to travel long distances for foraging. **All QI species have been screened in for in-situ effects from habitat degradation and mortality.**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for: Light-bellied brent geese, shelduck, golden plover, grey plover, and bar-tailed godwit. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light-bellied Brent geese, oystercatcher, and golden plover. **Screened out for in-situ and ex-situ effects from habitat loss.** **Screened out for in-situ effects from disturbance.** **Screened out for ex-situ effects from habitat degradation and mortality on supporting habitat for**: Great-crested grebe, pintail, goldeneye, red-breasted merganser, oystercatcher, knot, dunlin, black-tailed godwit and redshank. **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Great-crested grebe, shelduck, pintail, goldeneye, red-breasted merganser, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit and redshank.
Baldoyle Bay SPA (004016)	Direct distance: 4km Hydrological distance: 4.8km Hydrological distance to potentially impacted supporting habitat from the Proposed Development: Malahide Estuary SPA: 8.7 km	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Bar-tailed Godwit (*Limosa lapponica*) [A157] Wetland and Waterbirds [A999]	**Pathway** The proximity of the European site to the Proposed Development mean that works may be taking place within functionally linked habitats for QI bird species which are known to use agricultural and amenity land to forage and roost in, namely Brent goose and golden plover. Additionally, a hydrological link via the Sluice_010 and the Mayne_010 which may create a pathway for impacts to all QI species. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked habitat and the habitat within the SPA itself. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA and supporting habitat. There is also potential for habitat degradation via a pollution event from run-off into functionally linked, terrestrial habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** In the absence of mitigation, potential sedimentation and pollution incidents entering the watercourses hydrologically linked to this site could cause habitat degradation to habitats within the SPA for all QI birds and their prey as the hydrological link via the Mayne_010 is approximately 4.8km in length while the hydrological link via the Sluice_010 is approximately 9.7km. In addition, potential sedimentation and pollution incidents may enter supporting habitat in Malahide Estuary SPA which has also screened in for habitat degradation LSEs. Malahide Estuary SPA is 2.4 km from Baldoyle Bay SPA and is within commutable distance for QI species. This may cause an increased impact to QI species and their prey which may commute between these two SPAs to forage and roost. These are light-bellied Brent goose, shelduck, golden plover, grey plover, and bar-tailed godwit. Lastly, potential sedimentation and pollution incidents may enter functionally linked, terrestrial habitat adjacent to the Proposed Development causing habitat degradation impacting QI species and their prey, namely Brent goose and golden plover, which are known to travel inland to forage and roost. Both of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.** The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in the SPA and supporting/ functionally linked, terrestrial habitat leading to a reduction in water quality and reduction of prey availability potentially causing mortality to QI species namely, light-bellied Brent goose and golden plover.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				Disturbance – LSEs cannot be excluded. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species, namely Brent goose and golden plover, which are known to travel inland to forage and roost. The works are too far (4km) from the SPA to cause disturbance impacts to the SPA itself. **All QI species have been screened in for in-situ effects from habitat degradation and mortality.** **Screened in for ex-situ effects from habitat degradation and mortality on functionally linked habitat for:** Light-bellied Brent goose, shelduck, golden plover, grey plover, and bar-tailed godwit. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light-bellied Brent goose and golden plover. **Screened out for in-situ and ex-situ effects from habitat loss.** **Screened out for in-situ effects from disturbance.** **Screened out for ex-situ effects from habitat degradation and mortality on supporting habitat for**: Ringed plover **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Shelduck, ringed plover, grey plover and bar-tailed godwit.
North-West Irish Sea SPA (004236)	Direct distance: 4.5km Hydrological distance: 6.3km	Common Scoter (*Melanitta nigra*) [A065] Red-throated Diver (*Gavia stellata*) [A001] Great Northern Diver (*Gavia immer*) [A003] Fulmar (*Fulmarus glacialis*) [A009] Manx Shearwater (*Puffinus puffinus*) [A013]	**Pathway** This marine SPA covers large area (2,333km^2) between South Dublin to Dundalk and overlaps and adjoins 12 existing Special Protection areas of which many are designated for the same QIs and act as supporting habitat (NPWS 2023b).	**Habitat degradation – LSEs can be excluded.** There is a hydrological link to the SPA with a distance of 6.3km. While this is a short distance, the hydrological link is via the coastal waters which have a large assimilative capacity. Thus, a pollution event is unlikely to reach this European site to cause significant

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
		Shag (*Phalacrocorax aristotelis*) [A018] Cormorant (*Phalacrocorax carbo*) [A017] Little Gull (*Larus minutus*) [A177] Kittiwake (*Rissa tridactyla*) [A188] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Great Black-backed Gull (*Larus marinus*) [A187] Little Tern (*Sterna albifrons*) [A195] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Puffin (*Fratercula arctica*) [A204] Razorbill (*Alca torda*) [A200] Guillemot (*Uria aalge*) [A199]	The proximity of the European site to the Proposed Development means that works may be taking place within functionally linked habitats for QI bird species which are known to use agricultural/amenity land to forage and roost in, namely black-headed gull, common gull, lesser black-backed gull, herring gull, great black-backed gull, and little gull. All species are in black text due to the length of the hydrological link being <10km long. As such all species are being assessed below. A hydrological link exists between the Proposed Development and this North-west Irish Sea SPA via: • Sluice_010 and the Mayne_010 (Baldoyle SPA) • Tolka_020, Pinkeen_010 and the Dunboyne (North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA) • Ward_ 010, 020 and 030 (Malahide Bay SPA) Which may create a pathway for impacts to all QI species via the hydrological connections. **Habitat Loss** No potential for habitat loss given the works do not take place within this European site and all works associated with the Proposed Development are inland and this SPA is exclusively a coastal and marine site. **Mortality** Potential for mortality given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to this this SPA via North Bull Island SPA, Malahide SPA	impacts when taking the distance and dilution rates via rivers, estuaries, and the Irish Sea into account. In addition, if a pollution event was to reach the SPA if would not cause significant effects as seabirds have large foraging ranges and can readily relocate to available foraging habitat which is plentiful within the Irish Sea (Thaxter *et al.* 2012). However, in the absence of mitigation, potential sedimentation and pollution incidents may enter functionally linked habitat causing habitat degradation thus, impacting QI species and their prey which are known to travel inland to forage and roost during the winter season. These include black-headed gull, common gull, lesser black-backed gull, herring gull, great black-backed gull, and little gull. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). Although there are many sites with supporting habitat within the ZoI for QIs of the North-West Irish Sea SPA none of these sites have screened in for direct impacts. Thus, no significant effects are predicted for QIs using supporting habitat. **Mortality – LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due to the hydrological distances, taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. However, the Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked habitat by a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance- LSEs cannot be excluded.** The works are too far (4.5km) from the SPA itself to cause disturbance impacts within the SPA itself. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			and Baldoyle SPA. There is also potential for habitat degradation via a pollution event from run-off into functionally linked/supporting habitat (above mentioned SPAs) for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for some QI birds. *Further assessment needed in next column.*	deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roIst. **No in-situ effects are predicted.** **No ex-situ effects are predicted for supporting habitat.** **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Black-headed gull, common gull, lesser black-backed gull, herring gull, great black-backed gull, and little gull. **Screened out for ex-situ effects from habitat degradation, disturbance and mortality on functionally linked habitat for:** Common scoter, red-throated diver, great northern diver, fulmar, Manx shearwater, shag, cormorant, kittiwake, little tern, Roseate tern, common tern, Arctic tern, puffin, razorbill, and guillemot. **Justification below:** There are no significant effects to the QI within this SPA from either disturbance, mortality, habitat loss or habitat degradation due to the hydrological distance and assimilative qualities of the Irish Sea between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land as this a marine SPA and the QIs are seabirds.
North Bull Island SPA (004006)	Direct distance: 4.6km Hydrological distance: 23km Hydrological distance to potentially impacted supporting habitat from	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056]	**Pathway** The proximity of the European site to the Proposed Development mean that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use agricultural/amenity land to forage and roost in, namely Brent goose, teal, shoveler, oystercatcher,	**Habitat loss – No LSEs can be excluded.** The Proposed Development may result in short-term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
	the Proposed Development: Baldoyle SPA: 4.8km Malahide SPA: 8.7km	Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshan72aritim*ga totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]	golden plover, black-tailed godwit, curlew, and black-headed gull. QIs not mentioned above are not known to travel inland to use agricultural fields to forage or roost in and are largely confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. There is a hydrological link via the Tolka estuary which the Dunboyne Stream_010, the Tolka_020 and the Pinkeen_010. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked and supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA. There is also potential for habitat degradation via a pollution event from run-off into supporting habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 23km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation there is potential for impacts to QI species via the supporting habitat of Baldoyle and Malahide Estuary SPAs. Baldoyle SPA is 0.4km and Malahide Estuary SPA is 5.9km from North Bull Island SPA and is within commutable distance for QI species. This may cause an increased impact to QI species and their prey which may commute between these SPAs to forage and roost. These are light-bellied Brent goose, shelduck, pintail, oystercatcher, golden plover, grey plover, knot, dunlin, black-tailed godwit, and bar-tailed godwit. Additionally, potential sedimentation and pollution incidents may enter functionally linked habitat adjacent to the Proposed Development causing habitat degradation impacting QI species and their prey, namely light-bellied Brent goose, teal, shoveler, oystercatcher, golden plover, black-tailed godwit, curlew, and black-headed gull, which are known to travel inland to forage and roost. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in supporting and functionally linked habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (4.6km) from the SPA itself to cause disturbance impacts within the SPA itself or supporting habitat. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for:** Light-bellied Brent goose, shelduck, oystercatcher, golden plover, grey plover, bar-tailed godwit, pintail, dunlin, black-tailed godwit, knot, redshank, and black-headed gull. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light-bellied Brent goose, teal, shoveler, oystercatcher, golden plover, black-tailed godwit, curlew, and black-headed gull. **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on supporting or functionally linked habitat for:** Turnstone, sanderling, and wetlands and waterbirds. **Justification below:** There are no significant effects to the SPA itself from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				supporting habitat for these species, and they are not known to travel inland to utilise agricultural or amenity land.
South Dublin Bay and River Tolka Estuary SPA (004024)	Direct distance: 5.5km Hydrological distance: 22.5km Hydrological distance to potentially impacted supporting habitat from the Proposed Development: Baldoyle SPA: 4.8km Malahide SPA: 8.7km	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshan74aritim*ga totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999]	**Pathway** The proximity of the European site to the Proposed Development means that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural land to forage and roost in, namely light-bellied Brent goose, oystercatcher, and black-headed gull. Some of these species listed as QI's are not known to travel inland to use agricultural fields to forage or roost in and are largely confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. There is a hydrological link via the Tolka estuary which the Dunboyne Stream_010, the Tolka_020 and the Pinkeen_010. Grey coloured QIs were not considered in the assessment as the hydrological link to the SPA is too weak due to the large distance to cause any adverse effects on that QI. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short-term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 22.5km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation potential sedimentation and pollution incidents may enter supporting habitat of Baldoyle and Malahide Estuary SPA, of which there is overlapping QI's. Baldoyle SPA is 5.6km and Malahide Estuary SPA is 9.9km from South Dublin Bay and River Tolka Estuary SPA and is within commutable distance for the QI species. These are light-bellied Brent goose, oystercatcher, ringed plover, grey plover, knot, dunlin, bar-tailed godwit, and redshank. Additionally, potential sedimentation and pollution incidents may enter functionally linked habitat causing habitat degradation, impacting QI species and their

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA. There is also potential for habitat degradation via a pollution event from run-off into supporting habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	prey which are known to travel inland to forage and roost. These are light-bellied Brent goose, oystercatcher, and black-headed gull. These three species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in supporting and functionally linked habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (5.5km) from the SPA itself to cause disturbance impacts within the SPA. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and rlost. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for:** Light-bellied Brent goose, oystercatcher, ringed plover, grey plover, knot, dunlin, bar-tailed godwit, and redshank. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light-bellied Brent goose, oystercatcher, and black-headed gull.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				Screened out for ex-situ effects from habitat degradation, mortality, and disturbance on supporting or functionally linked habitat for: Sanderling, common, Roseate and Arctic tern, and wetlands & waterbirds. **Justification below:** There are no significant effects to the QI within this SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land.
Rogerstown Estuary SPA (004015)	Direct distance: 7.8km No direct hydrological connection. Hydrological distance to impacted potentially supporting habitat from the Proposed Development: Baldoyle SPA: 4.8km Malahide SPA: 8.7km	Grey76aritio76ariti*Anser anser*) [A043] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Redsha76aritim*nga totanus*) [A162] Wetland and Waterbirds [A999]	**Pathway** The proximity of the European site to the Proposed Development means that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural/amenity land to forage and roost in, namely greylag geese, shoveler, black-tailed godwit, light-bellied Brent goose and oystercatcher. Some of these species listed as QI's are not known to travel inland to use agricultural fields to forage or roost in and are largely confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. No freshwater (riverine) connection to Proposed Development exists. Grey coloured QIs were not considered in the assessment as there is no direct link to this SPA to cause any adverse effects on that QI. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is no hydrological link to the SPA, thus, a pollution event cannot reach this European site to cause impacts. However, in the absence of mitigation potential sedimentation and pollution incidents may enter the supporting habitat of Baldoyle and Malahide Estuary SPA, of which there is overlapping QI's. Malahide

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. There is also potential for habitat degradation via a pollution event from run-off into supporting habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	Estuary SPA is 2.5km and Baldoyle SPA is 8.9km from Rogerstown Estuary SPA and is within commutable distance for the QI species. These are light-bellied Brent goose, shelduck, ringed plover, grey plover, knot, dunlin, oystercatcher, redshank, and black-tailed godwit. Additionally, potential sedimentation and pollution incidents may enter functionally linked habitat causing habitat degradation impacting QI species and their prey which are known to travel inland to forage and roost. These are greylag goose, shoveler, light-bellied Brent goose and oystercatcher. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due lack of hydrological connection. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in supporting and functionally linked habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (7.8km) from the SPA itself to cause disturbance impacts within the SPA itself. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for:** Light-bellied Brent goose, shelduck, ringed plover, grey plover, knot, dunlin, oystercatcher, redshank, and black-tailed godwit.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for: Greylag goose, shoveler, black-tailed godwit, light-bellied Brent goose and oystercatcher.
Ireland's Eye SPA (004117)	Direct distance: 8.6km Hydrological distance: 10.5km	Cormorant (*Phalacrocorax carbo*) [A017] Herring Gull (*Larus argentatus*) [A184] Kittiwake (*Rissa tridactyla*) [A188] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200]	**Pathway** The proximity of the European site to the Proposed Development mean that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural land to forage and roost in, namely herring gull. Additionally, a hydrological link via the Irish Sea which the Sluice_010 and the Mayne_010 connect to which may create a pathway for impacts to all QI species. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA. Which is a distance of 10.5km. Additionally, the hydrological link is via the coastal waters which have a large assimilative capacity. Thus, a pollution event is unlikely to reach this European site to cause significant impacts when taking the distance and dilution rates via rivers, estuaries, and the Irish Sea into account. However, in the absence of mitigation, potential sedimentation and pollution incidents may enter functionally linked habitat causing habitat degradation impacting QI species and their prey which are known to travel inland to agricultural land to forage and roost namely, herring gull. Herring gull were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2).

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			the SPA. There is also potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	Although there are many sites with supporting habitat within the ZoI for QIs of Ireland's Eye SPA none of these sites have screened in for direct impacts. Thus, no significant effects are predicted for QIs using supporting habitat. **Mortality – LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (8.6km) from the SPA itself to cause disturbance impacts within the SPA. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **No ex-situ effects are predicted for supporting habitat.** **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked for:** Herring gull. **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Kittiwake, guillemot, razorbill, and cormorant. **Justification below:** There are no significant effects to the QI within this SPA from either disturbance, mortality, habitat loss or

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land.
Howth Head Coast SPA (004113)	Direct distance: 10km Hydrological distance: 13km	Kittiwake (*Rissa tridactyla*) [A188]	**Pathway** There is a hydrological link via the Irish Sea which the Sluice_010 and the Mayne_010 connect to which may create a pathway for impacts to the QI species. The habitats along the Proposed Development are not considered functionally linked habitat for kittiwake as this species is not known to travel inland to use agricultural fields to forage or roost in and are confined to open coast, sea cliffs or marine habitats. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Mortality** Potential for mortality given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA and to supporting habitat within the NW Irish Sea SPA. Further assessment needed in next column. **Disturbance** No potential for disturbance given the works do not take place within this European site and Kittiwake favour rocky sea-cliffs and predominantly feed on small offshore fish species just below the surface of the water (Ratcliffe *et al*. 2004).	**No LSEs Anticipated: Rationale Provided Below:** **Habitat degradation – LSEs can be excluded** There is a hydrological link to supporting habitat (NW Irish Sea SPA) for this QI however, this link is considered *de minimus* due to the intervening distance of 6.3km and dilution rates of the rivers, estuaries, and the Irish Sea. The hydrological distance to this SPA is 13km and so a pollution event is unlikely to reach this European site to cause significant impacts when taking the dilution rates of the rivers, estuaries, and the Irish sea into consideration. **Mortality – LSEs can be excluded.** No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. **No likely significant effects are predicted for kittiwake and therefore, this QI has been screened out.**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
Lambay Island SPA (004069)	Direct distance: 13.4km Hydrological distance: 22.1km	Fulmar (*Fulmarus glacialis*) [A009] Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Grey81aritio81ariti*Anser anser*) [A043] Lesser Black-backed Gull (*Larus fuscus*) [A183] Herring Gull (*Larus argentatus*) [A184] Kittiwake (*Rissa tridactyla*) [A188] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200] Puffin (*Fratercula arctica*) [A204]	**Pathway** The proximity of the European site to the Proposed Development mean that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural/amenity land to forage and roost in, namely greylag geese, lesser black-backed gull, and herring gull. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. There is a hydrological link via the Irish Sea which the Ward_010, Ward_020 and the Ward_030 connect. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA itself and supporting habitat. There is also potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. *Further assessment needed in next column.*	**Habitat loss – LSEs can be excuded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Thereforem the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 22.1km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation, potential sedimentation and pollution incidents may enter functionally linked, terrestrial habitat causing habitat degradation impacting QI species and their prey which are known to travel inland to forage and roost. These are greylag goose, lesser black-back gull, and herring gull. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). Although there are many sites with supporting habitat within the ZoI for QIs of Lambay Island SPA none of these sites have screened in for direct impacts. Thus, no significant effects are predicted for QIs using supporting habitat. **Mortality – LSEs cannot be excluded.**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			Disturbance Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked, terrestrial habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (13.4km) from the SPA itself to cause disturbance impacts within the SPA itself. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **No ex-situ effects are predicted for supporting habitat.** **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Lesser black-back gull, herring gull and greylag goose. **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat:** Kittiwake, guillemot, shag, puffin, cormorant, fulmar, razorbill, and cormorant. **Justification below:** There are no significant effects to the QI within this SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				species are not known to travel inland to utilise agricultural or amenity land.
Dalkey Islands SPA (004172)	Direct distance: 17.5km Hydrological distance: 23km	Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]	**Pathway** A weak hydrological link exists between the Proposed Development and this SPA. The habitats along the Proposed Development are not considered functionally linked habitat for Arctic or Roseate terns as these species are exclusively coastal birds which utilise marine or estuarine habitats. Common terns are known to utilise inland waterbodies, estuarine and coastal habitats. However, no suitable lakes/rivers are within proximity to the Proposed Development. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Mortality** No potential for mortality given the works do not take place within this European site and no significant effects were identified on supporting habitat via other SPAs. **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA. *Further assessment needed in next column.* **Disturbance** No potential for disturbance given the works do not take place within this European site and the QIs are not known to use habitats effected by the works of the Proposed Development.	**No LSEs Anticipated: Rationale Provided Below:** **Habitat degradation – LSEs can be excluded.** There is a hydrological link to the SPA via the Irish Sea, but it is considered *de minimus* due to the intervening distance of and dilution rates. Additionally, there are no supporting habitat SPAs with anticipated impacts. Terns favour coastal habitats and are unlikely to travel inland. As such, there is no pathway from Proposed Development to suitable supporting or functionally linked habitat for these species. Therefore, there is no potential for LSEs. **No likely significant effects to any of the QI species associated with this SPA.** **Screened out for in-situ and ex-situ effects for:** Roseate tern, common tern and Arctic tern.
Skerries Islands SPA (004122)	Direct distance: 18.5km Hydrological distance: 29km Hydrological distance to potentially impacted supporting habitat from	Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Purple Sandpiper (*Calidris maritima*) [A148] Turnstone (*Arenaria interpres*) [A169]	**Pathway** The proximity of the European site to the Proposed Development mean that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural and amenity land	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
	the Proposed Development: Baldoyle SPA: 4.8km Malahide SPA: 8.7km	Herring Gull (*Larus argentatus*) [A184]	to forage and roost in, namely light bellied Brent goose and herring gull. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. A weak hydrological link exists between the Proposed Development and this SPA however, there are multiple hydrological links to supporting habitat via other SPAs for which there is overlapping QI's (see distances column). **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked and supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event entering functionally linked habitats and watercourses which are hydrologically linked to supporting habitats. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	Surrounding the Propose" Dev'lopment is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance and dilution rates. The distance of 29km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation, potential sedimentation and pollution incidents may enter supporting habitat of Baldoyle and Malahide Estuary SPA, of which there is overlapping QI's. Baldoyle SPA is 5.6km and Malahide Estuary SPA is 9.9km from South Dublin Bay and River Tolka Estuary SPA and is within commutable distance for the QI species. These are light-bellied Brent goose, oystercatcher, ringed plover, grey plover, knot, dunlin, bar-tailed godwit, and redshank. Additionally, potential sedimentation and pollution incidents may enter functionally linked, terrestrial habitat causing habitat degradation impacting QI species and their prey which are known to travel inland to forage and roost. These are light-bellied Brent goose and herring gull. These two species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality- LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked and supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (18.5km) from the SPA itself to cause disturbance impacts within the SPA. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **Screened in for ex situ effects from habitat degradation and mortality on supporting habitat for:** Light bellied Brent goose. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light bellied Brent goose and herring gull. **Screened out for ex-situ effects from habitat loss or degradation, disturbance, and mortality on functionally linked habitat:** Cormorant, shag, purple sandpiper, and turnstone. **Justification below:** There are no significant effects to QI species within the SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land.

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
Rockabill SPA (004014)	Direct distance: 19km Hydrological distance: 30km	Purple Sandpiper (*Calidris maritima*) [A148] Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194]	**Pathway** A weak hydrological link exists between the Proposed Development and this SPA. The habitats along the Proposed Development are not considered supporting habitat for Arctic or Roseate terns as these species are exclusively coastal birds, which utilise marine or estuarine habitats. Common terns are known to utilise inland waterbodies, estuarine and coastal habitats. However, no suitable lakes/rivers are within proximity to the Proposed Development. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Mortality** No potential for mortality given the works do not take place within this European site and no significant effects were identified on supporting habitat via other SPAs. **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked the SPA. *Further assessment needed in next column.* **Disturbance** No potential for disturbance given the works do not take place within this European site and the QIs are not known to use habitats effected by the works of the Proposed Development.	**LSEs can be excluded: Rationale Provided Below:** **Habitat degradation – LSEs can be excluded** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 30km means a pollution event is unlikely to reach this European site to cause significant impacts. **No likely significant effects to any of the QI species associated with this SPA.** **Screened out for in-situ and ex-situ effects for:** Purple sandpiper, Roseate tern, common tern and Arctic tern.
River Nanny Estuary and Shore SPA (004158)	Direct distance: 26km Hydrological distance: 43km Hydrological distance to potentially impacted supporting habitat from the Proposed Development: Baldoyle SPA: 4.8km	Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Herring Gull (*Larus argentatus*) [A184] Wetland and Waterbirds [A999]	**Pathway** The distance of the European site to the Proposed Development mean that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural and amenity land to forage and roost in, namely herring gull, golden plover, and oystercatcher. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of	**Habitat loss – LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
	Malahide Bay SPA: 8.7km		water, coastal habitats or marine habitats or are not known to travel long distances for foraging. Grey coloured QIs were not considered in the assessment as there is no direct link to this SPA to cause any adverse effects on that QI. A weak hydrological link exists between the Proposed Development, and this protected site via other SPA's namely Baldoyle and Malahide Bay SPA However, there are hydrological links via the above-mentioned SPA's which act as supporting habitats for the QIs of this SPA. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked and supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. Also, there is Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to supporting habitats. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 43km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation, potential sedimentation and pollution incidents may enter supporting habitat of Malahide Estuary and Baldoyle SPA of which there is overlapping QIs with this SPA. Malahide Estuary SPA is 20.1km and Baldoyle SPA is 26.3km, from River Nanny and Shoreline SPA and are within commutable distance for the QI species namely oystercatcher, ringed plover, golden plover, and knot. Additionally, potential sedimentation and pollution incidents may enter functionally linked habitat causing degradation and thus, impacting QI species and their prey, as these QIs are known to travel inland to forage and roost namely herring gull, golden plover, and oystercatcher. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.** No mortality is predicted on QIs within the SPA due to the hydrological distances, taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked and supporting habitats

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (26km) from the SPA itself to cause direct disturbance impacts to the SPA however, disturbance to the screened in QI's cannot be ruled out. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation, and mortality on supporting habitat for:** Oystercatcher, ringed plover, golden plover and knot. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally habitat for:** Herring gull, golden plover, and oystercatcher **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on supporting or functionally linked habitat for** Sanderling. **Justification below:** There are no significant effects to QI species within the SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land.
Boyne Estuary SPA (004080)	Direct distance: 33km Hydrological distance: 52km	Shelduck (*Tadorna tadorna*) [A048] Oystercatcher (*Haematopus ostralegus*) [A130]	**Pathway** The distance of the European site to the Proposed Development mean that works may be taking place within functionally linked habitat for QI bird species	**Habitat loss –LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
	Hydrological distance to potentially impacted supporting habitat from the Proposed Development: Baldoyle SPA: 4.8km Malahide Bay SPA: 8.7km	Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Black-tailed Godwit (*Limosa limosa*) [A156] Redsha89aritim*nga totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Little Tern (*Sterna albifrons*) [A195] Wetland and Waterbirds [A999]	which are known to use agricultural and amenity land to forage and roost in, namely lapwing, golden plover, oystercatcher, and black-tailed godwit. Grey coloured QIs were not considered in the assessment as there is no direct link to this SPA to cause any adverse effects on that QI. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. A weak hydrological link exists between the Proposed Development, and this protected site via other SPA's namely Baldoyle and Malahide Bay SPA. However, there are hydrological links via the above-mentioned SPA's which act as supporting habitats for the overlapping QIs of this SPA. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked and supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. Also, there is potential for habitat degradation via a pollution event entering watercourses which are	to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 52km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation, potential sedimentation and pollution incidents may enter supporting habitat of Malahide Estuary and Baldoyle SPA of which there is overlapping QIs with this SPA. Malahide Estuary SPA is 28.1km and Baldoyle SPA is 34.2km, from Boyne Estuary SPA and are within commutable distance for the QI species namely shelduck, oystercatcher, golden plover, grey plover, knot, black-tailed godwit, and redshank. Additionally, potential sedimentation and pollution incidents may enter functionally linked habitat causing degradation and thus, impacting QI species and their prey, as these QIs are known to travel inland to forage and roost namely lapwing, golden plover, oystercatcher, and black-tailed godwit. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.**

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			hydrologically linked to supporting habitats. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	No mortality is predicted on QIs within the SPA due to the length of the hydrological connection taking the dilution rates into consideration via the watercourses, estuaries, and Irish Sea. The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in supporting and functionally linked habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** The works are too far (33km) from the SPA itself to cause direct disturbance impacts to the SPA itself however, disturbance to the screened in QI's cannot be ruled out. In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and loost. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for:** Shelduck, oystercatcher, golden plover, grey plover, knot, black-tailed godwit, and redshank. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Lapwing, golden plover, oystercatcher, and black-tailed godwit. **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on supporting or functionally linked habitat for:** Sanderling, turnstone, and little tern. **Justification below:** There are no significant effects to QI species within this SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these species, and these species are not known to travel inland to utilise agricultural or amenity land.
Dundalk Bay SPA (004026)	Direct distance: 50km Hydrological distance: 78km Hydrological distance to potentially impacted supporting habitat from the Proposed Development: Baldoyle SPA: 4.8km Malahide Bay SPA: 8.7km	Great Crested Grebe (*Podiceps cristatus*) [A005] Gre91aritiG91ariti(*Anser anser*) [A043] Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052] Mallard (*Anas platyrhynchos*) [A053] Pintail (*Anas acuta*) [A054] Common Scoter (*Melanitta nigra*) [A065] Red-breasted Merganser (*Mergus serrator*) [A069] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Knot (*Calidris canutus*) [A143] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redsh91aritim*inga totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Herring Gull (*Larus argentatus*) [A184] Wetland and Waterbirds [A999]	**Pathway** The distance of the European site to the Proposed Development means that works may be taking place within functionally linked habitat for QI bird species which are known to use agricultural and amenity land to forage and roost in, namely light-bellied Brent goose, curlew, common gull, mallard, herring gull, lapwing, golden plover, teal, black-tailed godwit, and oystercatcher. Some of these species listed as QI's are not known to travel inland to use agricultural/amenity land to forage or roost in and some are confined to large bodies of water, coastal habitats or marine habitats or are not known to travel long distances for foraging. QI's which are grey in colour are not included in the assessment due to the distances between the Proposed Development and the SPA and where foraging/roosting travel distances for QI's are known (See Table 9.3, Appendix DD). A weak hydrological link (78km) exists between the Proposed Development, and this protected site via other SPA's namely Baldoyle, Malahide and NW Irish sea SPA. However, there are hydrological links via the above-mentioned SPA's which act as supporting habitats for the overlapping QIs of this SPA. **Habitat loss** No potential for long term habitat loss given the works do not take place within this European site. Although some agricultural fields will be used for the cable route this will be temporary as ground cover will be restored like for like post construction. However, a short term loss of functional habitat for QI species which forage on	**Habitat loss –LSEs can be excluded.** The Proposed Development may result in short term functional habitat loss for QI species associated with the SPA, particularly in the form of landscape changes to agricultural land which may be used for foraging opportunities. However, the loss of functional habitat is expected to be temporary and localised. Surrounding the Proposed Development is an abundance of similar habitats which act as alternate functional habitat for these species which are not directly affected by the project. In addition, the habitats will be replaced after the completion of the works, restoring any lost habitat. Therefore, the effect of the works on functional habitat for QI species in this SPA is considered to be *de minimus* and so no Likely Significant Effects are anticipated. **Habitat degradation – LSEs cannot be excluded.** There is a hydrological link to the SPA via other SPAs, but it is considered *de minimus* due to the intervening distance of and dilution rates. The distance of 78km means a pollution event is unlikely to reach this European site to cause significant impacts. However, in the absence of mitigation, potential sedimentation and pollution incidents may interact with supporting habitat of Malahide Estuary and Baldoyle SPA of which there is overlapping QIs with this SPA. Malahide Estuary SPA is 44.3km and Baldoyle SPA is 49.9km, from Dundalk Bay SPA and is within commutable distance for QI species. This may cause an increased impact to QI species and their prey which may commute between these SPAs to forage and roost. Light-bellied Brent goose has been screened in as its range overlaps with this supporting

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
			agricultural fields could take place. *Further assessment needed in next column.* **Mortality** Potential for mortality given the works have potential to pollute functionally linked and supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Habitat degradation** Potential for habitat degradation via a pollution event from run-off into functionally linked habitat for QI birds. Also, there is potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to supporting habitats. *Further assessment needed in next column.* **Disturbance** Potential for disturbance as works will take place within or adjacent to functionally linked habitat for QI birds. *Further assessment needed in next column.*	habitat, (See Table 9.3, Appendix D). Great crested grebe, shelduck, pintail, oystercatcher, ringed plover, golden plover, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit, and redshank have screened in as their range is unknown. Additionally, potential sedimentation and pollution incidents may interact with functionally linked, terrestrial habitat causing degradation and thus, impacting QI species and their prey, as these QIs are known to travel inland to forage and roost in amenity or agricultural land namely, light-bellied Brent goose, teal, black-tailed godwit, curlew, common gull, mallard, herring gull, lapwing, golden plover, and oystercatcher. Some of these species were recorded during Jacob's wintering bird surveys foraging and roosting within functionally linked habitats (see Table 3.2). **Mortality – LSEs cannot be excluded.** The Proposed Development may result in mortality of QI species associated with the SPA due to pollution impacts in functionally linked and supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to QI species. **Disturbance – LSEs cannot be excluded.** In the absence of mitigation, disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. The works are too far (50km) from the SPA to cause direct disturbance impacts to the SPA itself. **No in-situ effects are predicted.** **Screened in for ex-situ effects from habitat degradation and mortality on supporting habitat for:** Light-bellied Brent goose, great crested grebe, shelduck, pintail, oystercatcher, ringed plover, golden plover, grey plover, knot, dunlin, black-tailed godwit,

European Site Name and Code	Distance to the Proposed Development	Qualifying Interests	Description of Connectivity	Preliminary Assessment of Likely Significant Effects (LSEs)
				red-breasted merganser, bar-tailed godwit, and redshank. **Screened in for ex-situ effects from habitat degradation, disturbance, and mortality on functionally linked habitat for:** Light-bellied Brent goose, curlew, common gull, mallard, herring gull, lapwing, golden plover, teal, black-tailed godwit and oystercatcher **Screened out for ex-situ effects from habitat degradation, disturbance, and mortality on supporting or functionally linked habitat for:** Black-headed gull, greylag goose and common scoter **Justification below:** There are no significant effects to QI species within this SPA from either disturbance, mortality, habitat loss or habitat degradation, due to the hydrological distance between the Proposed Development and this SPA. In addition, Baldoyle and Malahide Estuary SPAs do not provide supporting habitat for these QIs. Two of these species are known to travel inland to utilise agricultural or amenity land but the Proposed Development is at a greater distance (50km) than either of these species will travel to forage and roost thus, the proposed development will not impact upon individuals from Dundalk Bay SPA (See Table 9.3, Appendix DD).

5. Information for Appropriate Assessment

The 14 European sites which screened in for the NIS were: Malahide Estuary SAC, Baldoyle Bay SAC, Malahide Estuary SPA, Baldoyle Bay SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Rogerstown Estuary SPA, Ireland's Eye SPA, Lambay Island SPA, Skerries Islands SPA, River Nanny Estuary and Shore SPA, Boyne Estuary SPA and Dundalk Bay SPA. These sites are shown on Figure 3 in Appendix C of this report and are assessed below.

5.1 Malahide Estuary SAC

See baseline description in Section 3.1.2.1.1 for a summary of this European site.

5.1.1 Qualifying Interests Potentially Exposed to Risk

During the screening exercise it was found that the following four QI habitats were exposed to LSEs from habitat degradation: mudflats and sandflats not covered by seawater at low tide, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), and Mediterranean salt meadows 94aritime*lia maritimi*).

See baseline description in Section 3.1.2.2 for a summary of these QIs.

5.1.2 Conservation Status of Qualifying Interests Exposed to Risk

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.4. The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of annexed habitats and annexed species of community interest for which a European site has been designated.

5.1.3 Conservation Objectives

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of annexed habitats and annexed species for which an SAC has been designated. To determine how the Proposed Development would affect the European site's QIs, this assessment has focused on likely significant effects that may possibly occur that could undermine the conservation objectives for the European sites. Table 5.1 shows the QI habitats and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective of this European site is to:

- To maintain the favourable conservation condition of QI habitats, which is defined by the following list of attributes and targets:

Table 5.1: Conservation Objectives for Malahide Estuary SAC (NPWS 2013a) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Mudflats and sandflats not covered by seawater at low tide [1140]	Habitat area (Ha) – The permanent habitat area is stable or increasing, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of this QI habitat.**
	Community extent (Ha) – Maintain the extent of the *Zostera*-dominated community and the *Mytilus edulis*-	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
	dominated community complex, subject to natural processes.	**cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the community extent associated with this habitat type.**
	Community structure (*Zostera* density:–shoots/m^2) - Conserve the high quality of the Zostera-dominated community, subject to natural processes	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the community structure associated with this habitat type.**
	Community structure: (*Mytilus edulis* density individuals/m^2) - Conserve the high quality of the Mytilus edulis dominated community, subject to natural processes	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the community structure associated with this habitat type.**
	Conserve the following community types in a natural cond–tion: (Ha) - Fine sand with oligochaetes, amphipods, bivalves and polychaetes community complex; Estuarine sandy mud with Chironomidae and *Hediste diversicolor* community complex; and sand to muddy sand with *Peringia ulvae*, *Tubificoides benedii* and *Cerastoderma edule* community complex	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the community distribution associated with these habitat type.**
Salicornia and other annuals colonising mud and sand [1310]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Malahide Estuary - 1.93ha	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of this QI habitat.**
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.**
	Physical structure of sediment supply (presence/ absence of physical barriers) Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of this QI habitat by creating physical barriers if sediments were to build up.**
	Physical structure of creeks and pans (occurrence) – Maintain creek and pan structure, subject to natural processes, including erosion and succession.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030);**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of creeks and pans in this habitat.
	Physical structure of flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of community zones in this habitat.** **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**
	Vegetation height (cm) – Maintain structural variation within sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of area outside creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat**
	Vegetation composition: typical species and sub - communities (% cover) – Maintain the presence of species - poor communities with typical species listed in the Saltmarsh Monitoring Project	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.**
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass, with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing native species allowing invasive species to expand.**
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Malahide Estuary - 25.33ha	**Yes Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		reduction in water quality, thus impacting upon the area and quality of QI habitat.
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.**
	Physical structure of sediment supply (presence/ absence of physica– barriers) - Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of this habitat by creating physical barriers if sediments were to build up.**
	Physical structure of creeks and pans (occurrence) – Maintain/restore creek and pan structure to develop, subject to natural processes, including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of creeks and pans in this habitat.**
	Physical structure: flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site. This could impact the physical structure of community zones in this habitat.** **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**
	Vegetation height (cm) – Maintain structural variation within sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of the area outside of the creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during v; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat.**
	Vegetation composition: typical species and sub - communities (% cover at a representative sample of monitoring stops) – Maintain range of sub -	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030);**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
	communities with typical species listed in the Saltmarsh Monitoring Project	**pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.**
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the impacting upon the species composition by reducing native species allowing invasive species to expand.**
Mediterranean salt meadows 98aritime*lia maritimi*) [1410]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Malahide Estuary - 0.64ha	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of QI habitat.**
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.**
	Physical structure: sediment supply (presence/ absence of physical barriers) – Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of this habitat (creating physical barriers if sediments were to build up).**
	Physical structure: creeks and pans (occurrence) – Maintain creek and pan structure, subject to natural processes, including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of creeks and pans in this habitat.**
	Physical structure: flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of community zones in this habitat.** **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
	Vegetation height (cm) – Maintain structural variation within the sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of the area outside of the creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat.**
	Vegetation composition: typical species (% cover) – Maintain range of sub - communities with typical species listed in the Saltmarsh Monitoring Project.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.**
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities via the Ward River (three tributaries of the Ward_030); pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the impacting upon the species composition by reducing native species allowing invasive species to expand.**

5.1.4 Appraisal of Potential Impacts

5.1.4.1 Habitat Degradation During Construction

During the Construction Phase, in the absence of mitigation, a pollution event from the Proposed Development may undermine the conservation objectives for QI habitats discussed above by reducing the habitat area and distribution, the physical structure and the vegetation structure in these habitats. There is a hydrological link between the Proposed Development and the Malahide Estuary SAC, meaning that in the event of a pollution incident, sediment and other pollutants may reach this SAC and cause the impacts described above, undermining the conservation objectives of this European site.

5.2 Baldoyle Bay SAC

See baseline description in Section 3.1.2.1.2 for a summary of this European site.

5.2.1 Qualifying Interests Potentially Exposed to Risk

During the screening exercise it was found that the following four QI habitats were exposed to LSEs from habitat degradation: mudflats and sandflats not covered by seawater at low tide, *Salicornia* and other annuals colonising

mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), and Mediterranean salt meadows 100aritime*lia maritimi*).

See baseline description in Section 3.1.2.2 for a summary of these QIs.

5.2.2 Conservation Status of Qualifying Interests Exposed to Risk

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E,
Table 9.5. The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of annexed habitats and annexed species of community interest for which a European site has been designated.

5.2.3 Conservation Objectives

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of annexed habitats and annexed species for which an SAC has been designated. To determine how the Proposed Development would affect the European site's QIs, this assessment has focused on the likely significant effects that could occur that could undermine the conservation objectives for the Europeans sites. Table 5.2 shows the QI habitats and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective of this European site is to:

- To maintain the favourable conservation condition of QI habitats, which is defined by the following list of attributes and targets:

Table 5.2: Conservation Objectives for Baldoyle Bay SAC (NPWS 2012a) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Mudflats and sandflats not covered by seawater at low tide [1140]	Habitat area (Ha) – The permanent habitat area is stable or increasing, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of theSCluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of this QI habitat.**
	Community distribution (Ha) – Conserve the following community types in a natural condition: Fine sand dominated by *Angulus tenuis* community complex; and Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the community distribution associated with this habitat type.**
Salicornia and other annuals colonising mud and sand [1310]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Baldoyle - 0.383ha	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of this QI habitat.**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.**
	Physical structure of sediment supply (presence/ absence of physica– barriers) - Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of this habitat by creating physical barriers if sediments were to build up.**
	Physical structure of creeks and pans (occurrence) – Maintain creek and pan structure, subject to natural processes, including erosion and succession.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of creeks and pans in this habitat.**
	Physical structure of flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of community zones in this habitat.** **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**
	Vegetation height (cm) – Maintain structural variation within sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of area outside creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
	Vegetation composition: typical species and sub - communities (% cover) – Maintain the presence of species - poor communities with typical species listed in the Saltmarsh Monitoring Project	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.**
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass, with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon species composition by reducing native species allowing invasive species to expand.**
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Baldoyle - 11.98ha	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of QI habitat.**
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.**
	Physical structure of sediment supply (presence/ absence of physica– barriers) - Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of this habitat.**
	Physical structure of creeks and pans (occurrence) – Maintain/restore creek and pan structure to develop, subject to natural processes, including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of creeks and pans in this habitat.**
	Physical structure: flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of community zones in this habitat. **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**
	Vegetation height (cm) – Maintain structural variation within sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of the area outside of the creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat.**
	Vegetation composition: typical species and sub - communities (% cover at a representative sample of monitoring stops) – Maintain range of sub - communities with typical species listed in the Saltmarsh Monitoring Project	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.**
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the impacting upon the species composition by reducing native species allowing invasive species to expand.**
Mediterranean salt meadows 103aritime*lia maritimi*) [1410]	Habitat area (Ha) – Area stable or increasing, subject to natural processes, including erosion and succession. For sub - site mapped: Baldoyle - 2.64ha	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of QI habitat.**
	Habitat distribution (occurrence) – No decline, or change in habitat distribution, subject to natural processes.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the distribution of this QI habitat.
	Physical structure: sediment supply (presence/ absence of physical barriers) – Maintain natural circulation of sediments and organic matter, without any physical obstructions	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of this habitat.**
	Physical structure: creeks and pans (occurrence) – Maintain creek and pan structure, subject to natural processes, including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of creeks and pans in this habitat.**
	Physical structure: flooding regime (Ha flooded & frequency) – Maintain natural tidal regime	No. There is no potential for the Proposed Development to influence the natural tidal regime in this site.
	Vegetation zonation (occurrence) – Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; sediment laden water could enter watercourses that are hydrologically linked to this site and impact the physical structure of community zones in this habitat.** **Other pollution during construction activities could also lead to a reduction in water quality thus impacting upon the composition of community zones in this habitat.**
	Vegetation height (cm) – Maintain structural variation within the sward	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the quality or presence of vegetation which means that the sward height may change.**
	Vegetation cover (% cover at a representative sample of monitoring stops) – Maintain more than 90% of the area outside of the creeks vegetated	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the cover of vegetation in this habitat.**
	Vegetation composition: typical species (% cover) – Maintain range of sub - communities with typical species listed in the Saltmarsh Monitoring Project.	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010;**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the species composition by reducing sensitive species in this habitat.
	Vegetation structure: negative indicator species - *Spartina anglica* (Ha) – No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	**Yes. Habitat degradation for this QI habitat could occur as a result of a pollution incident during open cut trenching and construction activities into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010; pollution could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the impacting upon the species composition by reducing native species allowing invasive species to expand.**

5.2.4 Appraisal of Potential Impacts

5.2.4.1 Habitat Degradation During Construction

During the Construction Phase, in the absence of mitigation, a pollution event from the Proposed Development may undermine the conservation objectives for QI habitats discussed above by reducing the habitat area and distribution, the physical structure and the vegetation structure in these habitats. There is a hydrological link between the Proposed Development and the Baldoyle Bay SAC, meaning that in the event of a pollution incident, sediment and other pollutants may reach this SAC and cause the impacts described above, undermining the conservation objectives of this European site.

5.3 Malahide Estuary SPA

See baseline description in Section 3.1.2.1.5 for a summary of this European site.

5.3.1 Qualifying Interests Potentially Exposed to Risk

During the screening exercise it was found that all QIs in the Malahide Estuary SPA were exposed to LSEs from habitat degradation and mortality via the Ward_030: great crested grebe, light-bellied Brent goose, shelduck, pintail, goldeneye, red-breasted merganser, oystercatcher, golden plover, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit, redshank and wetland and waterbirds.

Five QIs were exposed to a higher risk of LSEs from habitat degradation and mortality in supporting habitat in Baldoyle Bay SPA: light-bellied Brent goose, shelduck, golden plover, grey plover and bar-tailed godwit.

Three QIs were exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat adjacent to the Proposed Development: light-bellied Brent goose, oystercatcher, golden plover.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.3.2 Conservation Status of Qualifying Interests Exposed to Risk

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.6. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.3.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the Malahide Estuary SPA's QIs, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species and cause Adverse Effects on Site Integrity (AESIs). Table 5.3 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives of this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in Malahide Estuary as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.3: Conservation Objectives for Malahide Estuary SPA (NPWS 2013f) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Great crested grebe [A005], pintail [A054], goldeneye [A067], red-breasted merganser A069], knot A143], dunlin [A149], black-tailed godwit [A156] and redshank [A162] (in-situ impacts only)	Population trend (% change) – Long term population trend stable or increasing	**Yes. Habitat degradation leading to QI species mortality could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and supporting habitat (i.e. Baldoyle Bay SPA) and lead to a reduction in water quality, thus impacting the long term population trend by causing a reduction in foraging habitat quality and quantity and reducing species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus deterring these QI species from SPA habitat changing their natural distributions.**
All screened in QIs: Light-bellied Brent goose [A046], shelduck [A048], oystercatcher [A130], golden plover [A140], grey plover [A141] and bar-tailed godwit [A157] (in-situ and ex-situ impacts)	Population trend (% change) – Long term population trend stable or increasing	**Yes. Habitat degradation leading to QI species mortality could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the long term population trend by causing a reduction in foraging habitat quality and quantity and reducing species fitness.** **There is also a potential for sedimented or polluted run-off to impact the long term population trend of these species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Habitat degradation leading to QI species disturbance could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		deterring these QI species from this SPA habitat changing their natural distributions. **Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
Wetland and Waterbirds [A999] (in-situ impacts only)	Habitat area (Ha) – The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 765ha, other than that occurring from natural patterns of variation	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of wetland habitat.**

5.3.4 Appraisal of Potential Impacts

5.3.4.1 Habitat Degradation During Construction

During the Construction Phase, in the absence of mitigation, a pollution event from the Proposed Development may undermine the conservation objectives for habitats within this SPA discussed above by reducing wetland habitat and the health, population trend and distribution of all protected QI bird species. There is a hydrological link, that in the event of a pollution incident, sediment and other pollutants may reach this SPA and cause the impacts described above, undermining the conservation objectives of this European site.

5.3.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development has the potential to cause mortality impacts within the SPA. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.3.4.3 Disturbance During Construction

The Proposed Development passes through and adjacent to habitats functionally linked to Malahide Estuary SPA and will generate noise and visual disturbance in these habitats during the Construction Phase. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

Metres from Source	dB(A)										
0.67	120	110	100	95	90	85	80	75	70	65	60
1.33	114	104	94	89	84	79	74	69	64	59	54
2.67	108	98	88	83	78	73	68	63	58	53	48
5.33	102	92	82	77	72	67	62	57	52	47	42
10.67	96	86	76	71	66	61	56	51	46	41	36
20.67	90	80	70	65	60	55	50	45	40	35	30
42.67	84	74	64	59	54	49	44	39	34	29	24
85.33	78	68	58	53	48	43	38	33	28	23	
170.67	72	62	52	47	42	37	32	27	22		
341.33	66	56	46	41	36	31	26	21			
682.66	60	50	40	35	30	25	20				
1365.32	54	44	34	49	24						

Image 5.1: Standard Distance Decay Rates for Noise after Source (Cutts, Hemingway and Spencer 2013)

In Image 5.1 green indicates acceptable 'dose' levels: dark green unlikely to have any affect, pale green might occasionally induce a low-level behavioural response such as a heads-up. Yellow to orange shading is where a response is likely, but mitigation may be effective in reducing the disturbance risk. Red indicates levels where mitigation is required: pale red where mitigation is necessary but there may still be a remaining effect, and dark red where a flight response is certain to occur and is difficult to mitigate using only simple screening and may require the cessation of works during high sensitivity periods (Cutts *et al*. 2013).The works during the Proposed Development are expected to peak at 83dB, within the pale red area. HDD works are expected to last up to 54 days at each location, whereas construction of Joint Bays and Passing Bays will be less than 10 days at each location. Mitigation has been proposed to minimise these levels including acoustic barriers around HDD work areas.

5.3.4.4 Impacts to Supporting Habitat

Impacts to supporting habitat (for Malahide Estuary SPA) found within Baldoyle Bay SPA are outlined in Section 5.4.

5.4 Baldoyle Bay SPA

See baseline description in Section 3.1.2.1.6 for a summary of this European site.

5.4.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that all QIs were exposed to LSEs from habitat degradation and mortality in this SPA via the Sluice_010 and the Mayne_010: light-bellied Brent goose, shelduck, ringed plover, golden plover, grey plover, bar-tailed godwit and wetland & waterbirds.

It was found that five QIs were exposed to a higher risk of LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA: light-bellied Brent goose, shelduck, golden plover, grey plover and bar-tailed godwit.

It was found that two QIs were exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat adjacent to the Proposed Development: light-bellied Brent goose and golden plover.

5.4.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E,

Table **9.7**. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.4.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the QIs of Badoyle Bay SPA, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for the identified QI species. Table 5.4 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.4: Conservation Objectives for Baldoyle Bay SPA (NPWS 2013g) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Ringed plover [A137] (in-situ impacts only)	Population trend (% change) – Long term population trend stable or increasing	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the long term population trend by causing a reduction in foraging habitat quality and quantity and reducing species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Habitat degradation leading to QI species disturbance could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus deterring this QI species from SPA habitat changing their natural distributions.**
Light-bellied Brent goose [A046], golden plover [A140], shelduck [A048], grey plover [A141] and bar-tailed godwit [A157] (in situ and ex-situ impacts)	Population trend (% change) – Long term population trend stable or increasing	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses and supporting habitats in Malahide Estuary SPA that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting the long term population trend by causing a reduction in foraging habitat quality and quantity and reducing species fitness.** **There is also a potential for sedimented or polluted run-off to impact the long term population trend of these species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses and supporting habitats in Malahide Estuary SPA that are hydrologically linked to this site and lead to a reduction in water quality, thus deterring these QI species from SPA habitat changing their natural distributions.** **Disturbance during construction may effect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
Wetland and waterbirds [A999] (in-situ impacts only)	Habitat area (Ha) – The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 263ha, other than that occurring from natural patterns of variation	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to this site and lead to a reduction in water quality, thus impacting upon the area and quality of wetland habitat.**

5.4.4 Appraisal of Potential Impacts

5.4.4.1 Habitat Degradation During Construction

During the Construction Phase, in the absence of mitigation, a pollution event from the Proposed Development may undermine the conservation objectives for habitats within the SPA discussed above by reducing wetland

habitat and the health, population trend and distribution of all protected QI bird species. There is a hydrological link between the Baldoyle Bay SPA and the Proposed Development, meaning that in the event of a pollution incident, sediment and other pollutants may reach this SPA and cause the impacts described above, undermining the conservation objectives of this European site.

5.4.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts within the SPA. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.4.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats during the Construction Phase. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al*. 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.4.4.4 Impacts to Supporting Habitat

Impacts to supporting habitat (for Baldoyle Bay SPA) within Malahide Estuary SPA are outlined in Section 5.3.

5.5 North-West Irish Sea SPA

See baseline description in Section 3.1.2.1.7 for a summary of this European site.

5.5.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise six QIs were exposed to LSEs from habitat degradation, mortality, and disturbance in functionally linked habitat: little gull, black-headed gull, herring gull, lesser black-back gull, greater black-back gull and common gull. No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.5.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.8. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.5.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the QIs of North-West Irish Sea SPA, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for the identified QI species. Table 5.5 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective for this European site is:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Table 5.5: Conservation Objectives for North-West Irish Sea SPA (NPWS, 2023a) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to undermine conservation objectives and cause Potential Adverse Effects on Site Integrity (AESI)
Little gull [A177] Black-headed gull [A179] Greater black-back gull [A187] Common gull [A182]	Non-breeding population size- no significant decline.	**Yes. Habitat degradation could occur as a result of a pollution / sedimentation incident during construction activities; pollution / sediments could enter watercourses that are hydrologically linked to functionally connected habitat.** **There is a potential for habitat degradation as a result of sedimented or polluted run-off enter watercourses that are hydrologically linked to functionally connected habitat. The long term trend for the wintering population of these species may be impacted through a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in birds which reduces species fitness.**
Lesser black-back gull [A183]	Breeding population size- no significant decline	**Yes. There is a potential for sedimented or polluted run-off to impact the long term population trend of these species by impacting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in birds which reduces species fitness.**
Herring gull [A184]	Population size- long term SPA population trend is stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long term population trend of these species by impacting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in birds which reduces species fitness.**
Little gull [A177] Black-headed gull [A179] Greater black-back gull [A187] Common gull [A182] Lesser black-back gull [A183] Herring gull [A184]	Spatial distribution- sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population.	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
	Forage spatial distribution, extent, and abundance- sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	**Yes. There is a potential for sedimented or polluted run-off to affect the long term trend for the wintering population of these species by impacting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes**

Qualifying Interest (QI)	Attribute/ Target	Potential to undermine conservation objectives and cause Potential Adverse Effects on Site Integrity (AESI)
		long term population impacts by increasing stress responses in birds which reduces species fitness.
	Disturbance across the site- the intensity, frequency, timing, and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution	No. The Proposed Development will not cause disturbance within the SPA itself . The works will be taking place inland, 4.5km from this protected site at its closest point thus, no disturbance impacts to the site are predicted.
	Barriers to connectivity- the number, location, shape, and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA.	No. The Proposed Development will not add any connectivity barriers that will impact the sites populations for this SPA or ecologically important sites outside of the SPA. The works are temporary and will be taking place inland. The nature of the Proposed Development mean that no new physical barriers are created as works consist of an underground cable and substation upgrades.

5.5.4 Appraisal of Potential Impacts

5.5.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.5.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.5.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *at al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.6 North Bull Island SPA

See baseline description in Section 3.1.2.1.8 for a summary of this European site.

5.6.1 Qualifying Interests Potentially Exposed to Risk.

During the screening it was found that 12 QIs were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: light-bellied Brent goose, shelduck, pintail, oystercatcher, golden plover, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit, redshank, black-headed gull.

Eight QIs were exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat: light-bellied Brent Goose, teal, shoveler, oystercatcher, golden plover, black-tailed godwit, curlew, black-headed gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.6.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.9. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.6.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the QIs of North Bull Island SPA, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.6 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.6: Conservation Objectives for North Bull Island SPA (NPWS 2015a) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
All screened in QIs: Light-bellied Brent goose [A046], shelduck [A048], teal [A052], pintail [A054], shoveler [A056], oystercatcher [A130], golden plover [A140], grey plover [A141],	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for habitat degradation from sedimented or polluted run-off, impacting he long term population trend of these species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
knot [A143], dunlin [A149], black-tailed godwit [A156], bar-tailed godwit [A157], curlew [A160], redshank [A162] and black-headed gull [A179]	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**

5.6.4 Appraisal of Potential Impacts

5.6.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.6.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.6.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in-situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.6.4.4 Impacts to Supporting Habitat

Impacts (for North Bull Island SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.7 South Dublin Bay and River Tolka Estuary SPA

See baseline description in Section 3.1.2.1.9 for a summary of this European site.

5.7.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that eight Qis were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: light-bellied Brent goose, oystercatcher, ringed plover, grey plover, knot, dunlin, bar-tailed godwit and redshank.

Three Qis were identified as exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat: light-bellied Brent goose, oystercatcher and black-headed gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these Qis.

5.7.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant Qis at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.10. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.7.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's Qis, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species.

Table 5.7 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.7: Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA (NPWS 2015c) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Light-bellied Brent goose [A046], oystercatcher [A130], ringed plover [A137], knot [A143], dunlin [A149], bar-tailed godwit [A157], redshank [A162] and black-headed gull [A179]	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long term population trend of these species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in birds which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
Grey plover [A141]	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long term population trend of**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
No site-specific conservation objectives were written for this site as such the conservation objectives of ringed plover also designated for this site are being used as a proxy. This is considered appropriate considering the similarity in behaviour.		**this species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring this species from functionally linked habitats during Construction Phase from associated noise and vibrations.**

5.7.4 Appraisal of Potential Impacts

5.7.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.7.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.7.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in-situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.7.4.4 Impacts to Supporting Habitats

Impacts (for South Dublin Bay and River Tolka Estuary SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.8 Rogerstown Estuary SPA

See baseline description in Section 3.1.2.1.10 for a summary of this European site.

5.8.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that nine Qis were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: light-bellied Brent goose, shelduck, oystercatcher, ringed plover, grey plover, knot, dunlin, black-tailed godwit and redshank.

Five Qis were exposed to LSEs from habitat degradation, disturbance, and mortality in functionally linked habitat: greylag goose, light-bellied Brent goose, shoveler, oystercatcher and black-tailed godwit.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these Qis.

5.8.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant Qis at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.11. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.8.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's Qis, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.8 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in Rogerstown Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.8: Conservation Objectives for Rogerstown Estuary SPA (NPWS 2013h) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
All screened in QIs: Greylag goose [A043], light-bellied Brent goose [A046], shelduck [A048], shoveler [A056], oystercatcher [A130], ringed plover [A137], grey plover [A141], knot [A143], dunlin [A149], black-tailed	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of these species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing or	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
godwit [A156] and redshank [A162]	intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Construction Phase from associated noise and vibrations.**

5.8.4 Appraisal of Potential Impacts

5.8.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.8.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.8.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et a* . 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.8.4.4 Impacts to Supporting Habitat

Impacts (for Rogerstown Estuary SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.9 Ireland's Eye SPA

See baseline description in Section 3.1.2.1.11 for a summary of this European site.

5.9.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that one QI was exposed to LSEs from habitat degradation, mortality, and disturbance in functionally linked habitats: herring gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of this QI.

5.9.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.12. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.9.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's QIs, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.9 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective for this European site is to:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Table 5.9: Conservation Objectives for Ireland's Eye SPA (NPWS 2022a) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Herring Gull [A184] (no conservation objectives available for this SPA so the conservation objectives for the North-west Irish Sea SPA is being used as a proxy for the population as a whole, due to its QI overlap and proximity to Ireland's Eye SPA (NPWS 2023a). The Saltee Islands SPA is being used as a proxy for the breeding population. The Saltee Islands SPA is a suitable proxy for this site due to the QI overlap (NPWS, 2011e).	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of this species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring this species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
	Breeding population (abundance of apparently occupied nests) – Number No significant decline	No. There is no potential for the Proposed Development to reduce the number of nests.
	Productivity rate (mean) – No significant decline	**Yes. Stressors induced by pollution and disturbance from the Proposed Development at functionally linked habitats may reduce the productivity rate of breeding populations.**
	Distribution of breeding colonies (number; location; area (Ha)) – No significant decline	No. There is no potential for the Proposed Development to change the distribution of nests on Ireland's Eye SPA.
	Prey biomass available (Kg) – No significant decline. (includes both natural marine sources and anthropogenic sources)	**Yes. There is a potential for sedimented or polluted run-off to impact prey biomass available by polluting functionally linked habitats causing a reduction in quality and quantity of prey.**
	Barriers to connectivity (number; location; shape; area (Ha)) – No significant increase	No. The Proposed Development is 8.7km at the closest point and works include underground cables

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
		and upgrades to existing substations, therefore the Proposed Development has no potential to create any barriers to connectivity.
	Disturbance at the breeding site (level of impact) – No significant increase	No. Due to intervening distance, there is no potential for the Proposed Development to cause disturbance at the breeding site on Ireland's Eye SPA.

5.9.4 Appraisal of Potential Impacts

5.9.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.9.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.9.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.10 Lambay Island SPA

See baseline description in Section 3.1.2.1.13 for a summary of this European site.

5.10.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that three QIs were exposed to LSEs from habitat degradation, mortality, and disturbance in functionally linked habitat: greylag goose, lesser black-backed gull and herring gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.10.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.13. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.10.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the QIs of Lambay Island SPA, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.10 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective for this European site is:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Table 5.10: Conservation Objectives for Lambay Island SPA (NPWS 2022c) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Potential Adverse Effects on Site Integrity (AESI)
Greylag goose [A043] (no conservation objectives available for this SPA so the conservation objectives for the Rogerstown Estuary SPA is being used as a proxy for the population as a whole due to its QI ioverlap and proximity to Lambay Island SPA. (NPWS 2013h))	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of this species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring this species from functionally linked habitats during Construction Phase from associated noise and vibrations.**
Lesser black-backed gull [A183] and Herring gull [A184] (no conservation objectives available for this SPA so the conservation objectives for the North-west Irish Sea SPA is being used as a proxy for the populations as a whole due to its QI overlap	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of these species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Potential Adverse Effects on Site Integrity (AESI)
and proximity to Lambay Island SPA (NPWS 2023a). The Saltee Islands SPA is being used as a proxy for the breeding population. The Saltee Islands SPA is a suitable proxy for this site due to the QI overlap (NPWS, 2011e)).	Breeding population (abundance of apparently occupied nests) – Number No significant decline	No. There is no potential for the Proposed Development to reduce the number of nests.
	Productivity rate (mean) – No significant decline	**Yes. Stressors induced by pollution and disturbance from the Proposed Development may reduce the productivity rate of breeding populations.**
	Distribution of breeding colonies (number; location; area (Ha)) – No significant decline	No. There is no potential for the Proposed Development to change the distribution of nests on Lambay Island.
	Prey biomass available (Kg) – No significant decline. (includes both natural marine sources and anthropogenic sources)	**Yes. There is a potential for sedimented or polluted run-off to impact prey biomass available by polluting functionally linked habitats causing a reduction in quality and quantity of prey.**
	Barriers to connectivity (number; location; shape; area (Ha)) – No significant increase	No. The Proposed Development is 13.1km at the closest point and works include underground cables and upgrades to existing substations, therefore the Proposed Development has no potential to create any barriers to connectivity.
	Disturbance at the breeding site (level of impact) – No significant increase	No. Due to intervening distance, there is no potential for the Proposed Development to cause disturbance at the breeding site on Lambay Island SPA.

5.10.4 Appraisal of Potential Impacts

5.10.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.10.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.10.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a

reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.11 Skerries Islands SPA

See baseline description in Section 3.1.2.1.16 for a summary of this European site.

5.11.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that one QIs were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: light bellied Brent goose.

Two QIs were exposed to LSEs from habitat degradation, mortality, and disturbance in functionally linked habitat: light bellied Brent goose and herring gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.11.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.14. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.11.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's QIs, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.11 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objective for this European site is:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Table 5.11: Conservation Objectives for Skerries Islands SPA (NPWS 2022e, NPWS, 2022c & NPWS, 2014d) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Herring gull [A184] (Conservation objectives taken from Saltee Islands SPA as no objectives exist for this SPA. Saltee Islands SPA is a suitable proxy for this site due to the QI	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of these species by polluting functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing, or	**Yes. Disturbance during construction may affect their natural distribution by deterring these species**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
overlap (NPWS, 2011e)).	intensity of use of areas by these species, other than that occurring from natural patterns of variation	**from functionally linked habitats during construction phase from associated noise and vibrations.**
	Breeding population (abundance of apparently occupied nests) – Number No significant decline	No. There is no potential for the Proposed Development to reduce the number of nests.
	Productivity rate (mean) – No significant decline	**Yes. Stressors induced by pollution and disturbance from the Proposed Development may reduce the productivity rate of breeding populations.**
	Distribution of breeding colonies (number; location; area (Ha)) – No significant decline	No. There is no potential for the Proposed Development to change the distribution of nests on Skerries Islands.
	Prey biomass available (Kg) – No significant decline. (includes both natural marine sources and anthropogenic sources)	**Yes. There is a potential for sedimented or polluted run-off to impact prey biomass available by polluting functionally linked habitats causing a reduction in quality and quantity of prey.**
	Barriers to connectivity (number; location; shape; area (Ha)) – No significant increase	No. The Proposed Development is 17.4km at the closest point and works include underground cables and upgrades to existing substations, therefore the Proposed Development has no potential to create any barriers to connectivity.
	Disturbance at the breeding site (level of impact) – No significant increase	No. Due to intervening distance, there is no potential for the Proposed Development to cause disturbance at the breeding site on Skerries Islands SPA.
Light-bellied Brent goose (Conservation objectives taken from North Bull island SPA as no objectives exist for this SPA. North Bull island SPA is a suitable proxy for this site due to the QI overlap and the distance between the two sites (NPWS, 2014d)).	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of these species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in birds which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing, or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during construction phase from associated noise and vibrations.**

5.11.4 Appraisal of Potential Impacts

5.11.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural fields are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.11.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.11.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al* . 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.11.4.4 Impacts to Supporting Habitat

Impacts (for Skerries Islands SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.12 River Nanny Estuary and Shore SPA

See baseline description in Section 3.1.2.1.18 for a summary of this European site.

5.12.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that four QIs were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: oystercatcher, ringed plover, golden plover and knot.

Three QIs were exposed to LSEs from habitat degradation, mortality, and disturbance in functionally linked habitat: herring gull, golden plover and oystercatcher.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.12.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E,

Table **9.15**. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.12.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's QIs, this assessment has focused on the likely significant

effects that may occur that could undermine the conservation objectives for these species. Table 5.12 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in River Nanny Estuary and Shore SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.12: Conservation Objectives for River Nanny Estuary and Shore SPA (NPWS, 2012d) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Oystercatcher [A130], ringed plover [A137], golden plover [A140], knot [A143] and herring gull [A184]	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of these species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing, or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during construction phase from associated noise and vibrations.**

5.12.4 Appraisal of Potential Impacts

5.12.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural fields are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.12.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.12.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.4.4.3 (Cutts *et al* . 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of

functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.12.4.4 Impacts to Supporting Habitat

Impacts (for River Nanny Estuary and Shore SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.13 Boyne Estuary SPA

See baseline description in Section 3.1.2.1.17 for a summary of this European site.

5.13.1 Qualifying Interests Potentially Exposed to Risk.

During the screening exercise it was found that seven QIs were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: shelduck, oystercatcher, golden plover, grey plover, knot, black-tailed godwit and redshank.

Four QIs were exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat: lapwing, golden plover, oystercatcher and black-tailed godwit.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.13.2 Conservation Status of Qualifying Interests Exposed to Risk.

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.16. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.13.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's QIs, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table **5.13** shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in Boyne Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.13: Conservation Objectives for Boyne Estuary SPA (NPWS 2013l) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
All screened in QIs: Shelduck [A048], oystercatcher [A130], golden plover [A140], grey plover [A141], lapwing [A142], knot [A143], black-tailed godwit [A156] and redshank [A162]	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of this species by polluting supporting/ functionally linked habitats causing a reduction in foraging habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**

5.13.4 Appraisal of Potential Impacts

5.13.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.13.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters in functionally linked habitats directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.13.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short-term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.13.4.4 Impacts to Supporting Habitat

Impacts (for Boyne Estuary SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

5.14 Dundalk Bay SPA

See baseline description in Section 3.1.2.1.19 for a summary of this European site.

5.14.1 Qualifying Interests Potentially Exposed to Risk

During the screening exercise it was found that 14 QIs were exposed to LSEs from habitat degradation and mortality in supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA: great crested grebe, light-bellied Brent goose, shelduck, pintail, red-breasted merganser, oystercatcher, ringed plover, golden plover, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit and redshank.

Ten QIs were exposed to LSEs from habitat degradation, mortality and disturbance in functionally linked habitat: Light-bellied Brent goose, teal, mallard, oystercatcher, golden plover, lapwing, black-tailed godwit, curlew, common gull and herring gull.

No likely significant effects are foreseen for the SPA itself due to the intervening distance and the presence of coastal waters (which have a large assimilative capacity) in-between.

See baseline description in Section 3.1.2.3 for a summary of these QIs.

5.14.2 Conservation Status of Qualifying Interests Exposed to Risk

The conservation status of relevant QIs at national and site level, key conditions underpinning favourable conservation status, attributes and threats to key conditions are presented in Appendix E, Table 9.17. The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated.

5.14.3 Conservation Objectives

The overall aim of the Birds Directive is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for which a European site has been designated. To determine how the Proposed Development would affect the SPA's QIs, this assessment has focused on the likely significant effects that may occur that could undermine the conservation objectives for these species. Table 5.14 shows the QI birds and associated conservation objectives of relevance to the Proposed Development.

The overarching conservation objectives for this European site are:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA; and
- To maintain the favourable conservation condition of the wetland habitat in Dundalk Bay SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Table 5.14: Conservation Objectives for Dundalk Bay SPA (NPWS 2011d) and Potential Adverse Effects on Site Integrity

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
All screened in QIs: Great crested grebe [A005], light-bellied	Population trend (% change) – Long term population trend stable or increasing	**Yes. There is a potential for sedimented or polluted run-off to impact the long-term population trend of this species by polluting supporting/ functionally linked habitats causing a reduction in foraging**

Qualifying Interest (QI)	Attribute/ Target	Potential to Undermine Conservation Objectives and Cause Adverse Effects on Site Integrity (AESI)
Brent goose [A046], shelduck [A048], teal [A052], mallard [A053], pintail [A054], red-breasted merganser [A069], oystercatcher [A130], ringed plover [A137], golden plover [A140], grey plover [A141], lapwing [A142], knot [A143], dunlin [A149], black-tailed godwit [A156], bar-tailed godwit [A157], curlew [A160], redshank [A162], common gull [A182] and herring gull [A184]		**habitat quality and quantity. Additionally, disturbance in functionally linked habitat causes long term population impacts by increasing stress responses in bird which reduces species fitness.**
	Distribution (range, timing, and intensity of use of areas) – No significant decrease in the range, timing or intensity of use of areas by these species, other than that occurring from natural patterns of variation	**Yes. Disturbance during construction may affect their natural distribution by deterring these species from functionally linked habitats during Construction Phase from associated noise and vibrations.**

5.14.4 Appraisal of Potential Impacts

5.14.4.1 Habitat Degradation During Construction

Large fields such as playing fields, parks and agricultural field are considered functionally linked habitats for the QI species discussed above. The Proposed Development travels both through and adjacent to these habitats for the length of the Proposed Development. In the absence of mitigation there is potential for the Proposed Development to impact these functionally linked habitats via surface water run-off of sediment laden waters, fuel or other contaminants causing a reduction of quality and quantity of functionally linked habitat for these QI species.

5.14.4.2 Mortality During Construction

In the absence of mitigation, the effects from pollution produced by the Proposed Development have potential to cause mortality impacts. Mortality may occur via QI species interacting with and consuming polluted waters in functionally linked habitats directly, via QI species consuming prey which occur in functionally linked habitats which may be laden with pollutants or via the reduction of prey causing starvation and mortality.

5.14.4.3 Disturbance During Construction

The Proposed Development travels both through and adjacent to functionally linked habitats and will generate noise and visual disturbance in these habitats. In the absence of mitigation there is potential for the Proposed Development to cause stress response (flight response and/or physiological response via increased cortisol if birds remain in situ) in the bird species discussed above or deter these species from accessing functionally linked habitat. For noise disturbance for these birds, auditory disturbance of greater than 70dB (as experienced at the bird) has the potential to elicit a high-level disturbance effect, see Image 5.1 in Section 5.3.4.3 (Cutts *et al.* 2013). Noise up to 83dB is predicted, though only temporarily and locally during HDD works and the construction of Joint Bays and Passing Bays. Disturbance may cause a reduction in quality and quantity of functionally linked habitat, by making these habitats more stressful to access or deterring these birds from these habitats. Disturbance has very serious effects and knock-on effects, even short term disturbance, there is a reduction of energy intake from not being able to access foraging grounds and increase in energy expenditure from travelling to alternative sites and from competition activity when accessing a smaller pool of functionally linked habitat. These effects impact the overall species fitness and via reduced health and reproductive success (NPWS 2012c).

5.14.4.4 Impacts to Supporting Habitat

Impacts (for Dundalk Bay SPA) to supporting habitat in Malahide Estuary SPA and Baldoyle Bay SPA are outlined in Section 5.3 and Section 5.4.

6. Mitigation Measures

6.1 Ecological Clerk of Works

An on-site Ecological Clerk of Works (EcoW[5]) will be appointed by the appointed contractor to implement the mitigation measures detailed within this Section of the report and included in the CEMP, a standalone document in the planning application pack. The ECoW will be a member of a professional body such as CIEEM or similar.

Where sensitive habitats or species have the potential to be impacted, the ECoW will be on site to oversee the implementation of all mitigation measures as described below. The ECoW will be at sensitive locations for example where there will be in-stream works and where a watercourse is hydrologically connected to European site and at locations where there is potential for disturbance to SCI birds and where hording will be erected, and in areas of vegetation reinstatement, including tree planting. Table 6.1 shows the location of proposed silt fencing locations and Table 6.2 shows the locations of the proposed screening to prevent disturbance to birds (including SCI species). To note, the exact locations are not yet determined and so the location shown in the table are indicative but at the approximate location where the fencing will be. Indicative silt fencing and screening locations are shown on Figure 4 in Appendix C. As part of the CEMP, exact locations will be determined by the ECoW.

The EcoW will give toolbox talks to all site personnel to highlight any environmental sensitivities and the boundaries of sensitive habitats. Toolbox talks will include findings of pre-construction surveys on baseline changes and any adaptive mitigation measures required. The EcoW will propose adaptive mitigation measures in response to, for instance, extreme weather events (amber and red Met Éireann weather warnings), or mitigation requirements arising from pre-construction surveys which identify unexpected receptors. Method statements in relation to trenched crossings prepared prior to the start of works and will be in accordance with particular IFI standards unless otherwise agreed with the IFI or planning authority. No sensitive works will be permitted without the prior approval of the EcoW.

Table 6.1: Proposed Silt Fencing Locations

Waterbody Name	European Sites with Hydrological Connection	Indicative Locations of Silt Fencing (NGR)
Tolka_020	• North-West Irish Sea SPA • North Bull Island SPA • South Dublin Bay and River Tolka Estuary SPA	Two Locations: • O 01119 43261 • O 01655 43968
Dunboyne Stream_010	• North-West Irish Sea SPA • North Bull Island SPA • South Dublin Bay and River Tolka Estuary SPA	Three Locations: • N 94483 46404 • N 94423 46442 • O 00537 42674
Pinkeen_010	• North-West Irish Sea SPA • North Bull Island SPA • South Dublin Bay and River Tolka Estuary SPA	Three Locations: • O 03952 45039 • O 04095 44965 • O 04090 45021
Ward_020	• Malahide Estuary SAC • Rockabill to Dalkey Island SAC • Lambay Island SAC • Malahide Estuary SPA • Lambay Island SPA	Four Locations: • O 05260 45264 • O 07317 44650 • O 07378 44541 • O 07489 44351
Ward_010	• Malahide Estuary SAC • Rockabill to Dalkey Island SAC • Lambay Island SAC • Malahide Estuary SPA • Lambay Island SPA	Four Locations: • O 05634 45422 • O 05654 45444 • O 06599 45597 • O 06694 45616
Ward_030	• Malahide Estuary SAC • Rockabill to Dalkey Island SAC	11 Locations: • O 09506 44418

[5] An Environmental Clerk of Works (EnCoW) with sufficient experience and membership of a professional body may also be used.

Waterbody Name	European Sites with Hydrological Connection	Indicative Locations of Silt Fencing (NGR)
	• Lambay Island SAC • Malahide Estuary SPA • Lambay Island SPA	• O 10245 45153 • O 10370 45217 • O 10840 45522 • O 11650 45815 • O 13017 44843 • O 13148 44703 • O 13218 44681 • O 14066 44606 • O 14173 44613 • O 14662 44583
Sluice_010	• Baldoyle Bay SAC • Rockabill to Dalkey Island SAC • Baldoyle Bay SPA • North-West Irish Sea SPA • Ireland's Eye SPA • Howth Head Coast SPA	One Location: • O 16415 44423
Mayne_010	• Baldoyle Bay SAC • Rockabill to Dalkey Island SAC • Baldoyle Bay SPA • North-West Irish Sea SPA • Ireland's Eye SPA • Howth Head Coast SPA	One Location: • O 19109 42085

Table 6.2: Proposed Screening Locations

Screen Number	Point/Line	Co-ordinates (point) (NGR)	Co-ordinates (from) (NGR)	Co-ordinates (to) (NGR)	Location Information
1	Line	N/A	N 95155 47993	N 94113 45167	Offroad, chainage 0-3650, including construction platforms and compounds
2	Point	N 94328 45100	N/A	N/A	Passing Bay
3	Point	N 97745 44012	N/A	N/A	Passing Bay
4	Point	N 99748 43076	N/A	N/A	Construction platform
5	Point	O 00322 42842	N/A	N/A	TCC-02
6	Point	O 00457 42684	N/A	N/A	Construction platform
7	Point	O 01038 43192	N/A	N/A	Construction platform
8	Point	O 01501 43884	N/A	N/A	Construction platform
9	Line	N/A	O 01616 44016	O 01698 44179	Offroad from chainage 12600-12900, including HDD compound
10	Line	N/A	O 03703 44963	O 04091 45036	Off-road section from chainage 15850-16450, including TCC
11	Point	O 05770 45427	N/A	N/A	Passing Bay
12	Point	O 06448 45612	N/A	N/A	Passing Bay
13	Line	N/A	O 06558 45676	O 06701 45607	Off-road, from chainage 19200-19400
14	Point	O 06904 45338	N/A	N/A	Construction platform
15	Line	N/A	O 07295 44683	O 07367 44567	Off road section from chainage 20500-20650, including passing bay
16	Line	N/A	O 07688 44026	O 08931 43700	Off-road section from chainage 21300-22650, including TCC-04

Screen Number	Point/Line	Co-ordinates (point) (NGR)	Co-ordinates (from) (NGR)	Co-ordinates (to) (NGR)	Location Information
17	Point	O 08123 43840	N/A	N/A	Eastern side of TCC-04
18	Point	O 09354 44293	N/A	N/A	Construction platform and HHD Compound Object
19	Line	N/A	O 09491 44460	O 09634 44661	Along HHD Compound Object ID 446, chainage 23600-23850
20	Point	O 10633 45379	N/A	N/A	Passing bay
21	Point	O 11318 45696	N/A	N/A	Passing bay
22	Point	O 11853 45799	N/A	N/A	Passing bay
23	Point	O 12275 45751	N/A	N/A	Western, southern and eastern sides of TCC-05
24	Point	O 12858 45057	N/A	N/A	Construction platform
25	Line	N/A	O 13404 44680	O 13869 44628	Off-road section from chainage 28650-29150, including construction platform
26	Point	O 18246 43900	N/A	N/A	Passing bay
27	Line	N/A	O 18511 43902	O 19273 41479	Off-road section from chainage 34100-37766, including HDD compounds, construction platforms, and construction compounds

6.2 Pollution

Potential pollution impacts from open cut trenching and construction to Malahide Estuary SAC and Malahide Estuary SPA are via the transport of pollutants and/or sediments via overland flows or leakages from plant into the Ward River (three tributaries of the Ward_030).

Potential pollution impacts from open cut trenching and construction to Baldoyle Bay SAC and Baldoyle Bay SPA are via the transport of pollutants and/or sediments via overland flows or leakages from plant into the Mayne River (one tributary of the Mayne_010) and the Sluice River (one tributary of the Sluice_010).

Potential pollution impacts from construction to all SPA functionally linked habitats are via the transport of pollutants and/or sediments via overland flows into adjacent fields.

In light of the potential effects described in Section 5, resulting from pollution and sediment laden run-off, control measures have been developed to ensure that the activities do not adversely impact upon the surface water environment. Measures to mitigate pollutants and/or sediment entering the watercourse during the Construction Phase of the Proposed Development, and therefore protecting SCI species, are outlined below.

The mitigation measures set out herein will be implemented to ensure that there will be no pollution of surface water during the Construction Phase of the Proposed Development. These mitigation measures have been developed in accordance with the following guidance documents and legislation:

- Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters (Inland Fisheries Ireland 2016);
- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams *et al.* 2001);
- CIRIA C648: Control of Water Pollution from Linear Construction Projects: Technical Guide (Murnane *et al.* 2006a);

- CIRIA C649: Control of Water Pollution from Linear Construction Projects: Site Guide (Murnane *et al.* 2006b);
- CIRIA C741: Environmental Good Practice on Site (Charles and Edwards 2015);
- Guidelines for the Crossing of Watercourses during the Construction of National Road schemes (NRA 2005); and
- S.I. No. 113/2022 (European Union (Good Agricultural Practice for Protection of Waters) (Amendment) Regulations).

6.2.1 Mitigation for Open Cut Trenching

Mitigation measures with respect to the open cut trenching of the Ward_030, Sluice_010 and Mayne_010 rivers are focused on preventing pollution to protected habitats downstream of these rivers and maintaining normal flow levels during construction. Mitigation measures will also be applied to the other watercourse crossings (as outlined in the EIAR included in the planning application pack) screened out as pathways to European sites.

Open-cut water crossings with in-stream trenching, have the potential to generate silt and suspended solids. To reduce the risk of discharging sediment into the watercourse, it is proposed to carry out all these works in a dry works area with an impermeable barrier laid in the trench to allow construction. The existence of a temporary impermeable barrier within the channel, will have a direct impact on the cross section of the channel and is expected to give rise to localised changes in water depth, velocities, and sediment erosion / deposition.

As with all works proposed during the Construction Phase, no works on watercourses will be allowed to commence until the relevant Risk Assessment Method Statements (RAMS) and pertinent Health and Safety documents are received from the appointed contractor and are reviewed and agreed by the Client's Representative. These contractor documents will include method statements, open trenching risk assessments and environmental management plans specific to the area where the trenching is to take place. These plans will be submitted by the contractor to the Client's Representative on site for review and comment prior to commencing open trench operations. Relevant documentation relating to the proposed works will also be provided to IFI for approval.

The following mitigation measures will be implemented when establishing and using a dry works area:

- The dry works area will be isolated by installing an impermeable barrier between the watercourse and the works area;
- All clean coarse surface material (gravel, cobbles and boulders) on the riverbed or stream to a depth of 20cm will be removed. A thinner layer will be removed if deeper material is mainly clay or sand;
- Any natural bed substrate removed from water bodies will be stored separately to other stockpiled material and covered with suitable waterproofing (geotextile base and cover) to prevent the washing out of fines such that they can be reinstated upon completion of the works;
- The impermeable barrier will be tailored to the watercourse in question. Techniques include the use of inflatable dams, frame dams or, in smaller watercourses, sandbags (double-bagged and underfilled; containing only clean washed sand);
- Where technically feasible, fluming will be preferred to over pumping as per consultation with IFI;
- Where damming and pumping methods are to be used for open trenching water pumped from the dry works area will be treated using settlement tanks to remove prior sediment and then be allowed to filter back to the watercourse, rather than discharging directly back into the watercourse, thereby avoiding scouring;
- In consultation with IFI, greater filtration of silt will be achieved prior to discharge, through proposed use of silt de-watering bags which trap silt and expel only clean water and can be left to biodegrade on riverbanks as a habitat enhancement measure;
- IFI meeting minutes state there is no space for temporary diversions. As per consultation with IFI, over-pumping will be restricted, unless otherwise agreed with IFI. If over pumping methods are to

be used for open trenching, sandbags will be used with an impermeable barrier. This method requires pumping of water from the upstream end of the barrier to an area downstream of the works area, maintaining normal flow in the watercourse either side of the isolated reach. Water will be conveyed over the isolated section of channel by pumping or the use of a temporary diversion by constructing an artificial stream;

- Site restoration works will be carried out following completion of the crossing, in agreement with IFI. These works will include riverbank stabilisation, gravel replacements etc. In all cases, the site will be restored post installation; and
- In-stream trenching works will not be carried out during extreme rainfall or high flow events. Met Éireann provides a 5-day weather forecast via its website (www.met.ie) and works will not take place during yellow, orange, and red weather warnings.

6.2.2 Mitigation for Working Adjacent to Watercourses

Mitigation measures with respect to works taking place within 30m of the Ward_030, Sluice_010 and Mayne_010 rivers and drainage ditches which hydrologically link to these rivers are focused on preventing pollution from surface run-off of the river during excavation and maintaining normal flow levels.

The following measures will be implemented to prevent surface water run-off into rivers:

- Silt fences will be installed between works areas and water features where construction is within 30m of a watercourse or drainage ditch which is linked to a watercourse to prevent potentially contaminated surface water run-off from works areas reaching the surface water feature;
- Silt fences will be installed downgradient of the potential source of the silt/ sediment:
    - The silt fence will contain the area where silted waters are being generated and will terminate on high ground, along roads the silt fence will be installed adjacent to drainage ditches;
    - The silt fence will be constructed using permeable filter fabric (Hy-Tex Terrastop silt fence or similar) rather than a mesh material;
    - The vegetated turves will be peeled back and not detached from the ground, the materials inserted and the turves replaced to hold the base in place;
    - The silt fence will be inspected regularly by the ECoW and contractor during the working day and weekly during construction, and in particular following heavy rainfall;
    - Silt fences will remain in-situ until the vegetation on the disturbed ground is re-established;
    - Silt fences will not be pulled from the ground, but cut at ground level and the stakes/ posts removed;
    - Should water build up behind the fences, the sediment will settle to the bottom. Water can be released, but sediments will remain and will be removed off site;
    - Two lines of silt fencing will be installed in sensitive areas as agreed with the ECoW; and
    - A record of silt fence installation, inspection and removal will be maintained by the ECoW.

6.2.3 Mitigation for Accidental Pollution

Mitigation measures with respect to accidental pollution are focused on prevention and safeguarding the approach to the storage and handling of materials and managing vehicles during the temporary Construction Phase. These measures are important to prevent pollution of functionally linked habitat of QI birds and to prevent pollution of watercourses hydrologically linked to European sites.

The following measures will be implemented for the storage of materials:

- All oil and diesel storage facilities will be at least 30m from any watercourse including surface water drains unless prior approval is confirmed by ECoW to reduce this distance;
- Spill kits and drip trays will be provided for all equipment and at locations where any liquids are stored and dispensed;
- Storage areas for solid materials, including waste soils, will be designed and managed to prevent deterioration of the materials and their escape (via surface run off or wind blow);
- Storage areas will be kept secure to prevent acts of vandalism that could result in leaks or spills; and
- All containers of any size will be correctly labelled indicating their contents and any hazard warning signs.

The following measures will be implemented for the prevention of spills:

- Fuel tanks, drums, and mobile bowsers (and any other equipment that contains oil and other fuels) will have a secondary containment, for example, double skinned tanks;
- All tanks, drums and mobile bowsers will be located in a sealed impervious bund with sufficient capacity to contain at least 25% of the total volume of the containers or 110% of the largest container, whichever is the greatest;
- Storage areas will be covered, wherever possible, to prevent rainwater filling the bunded areas; and
- Fuel fill pipes will not extend beyond the bund wall and will have a lockable cap secured with a chain.

Where fuel is delivered through a pipe permanently attached to a tank or bowser:

- The pipe will be fitted with a manually operated pump or a valve at the delivery end which closes automatically when not in use;
- The pump or valve will be fitted with a lock;
- The pipe will be fitted with a lockable valve at the end where it leaves the tank or bowser;
- The pipework will pass over and not through bund walls; tanks and bunds will be protected from vehicle impact damage;
- Tanks will be labelled with contents and capacity information; and
- All valves, pumps and trigger guns will be turned off and locked when not in use. All caps on fill pipes will be locked when not in use.

Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances (for example, chainsaws and jerry cans) including:

- Each container or piece of equipment will be stored in its own drip tray made of a material suitable for the substance being handled; and
- Containers and equipment will be stored on a firm, level surface.

For deliveries and dispensing activities:

- Site-specific procedures will be in place for bulk deliveries;
- Delivery points and vehicle routes will be clearly marked; and
- Emergency procedures will be displayed, a suitably sized spill kit will be available at all delivery points, and staff will be trained in these procedures and the use of spill kits.

The following measures will be implemented to reduce the risk of fuel and oil leaks from vehicles and plant:

- Vehicles and plant provided for use on the site will be in good working order to ensure optimum fuel efficiency, and are free from leaks;
- Sufficient spill kits will be carried on all vehicles;
- Vehicles and plant will be regularly maintained in line with the Contractors auditable inspection schedule to ensure that they are working at optimum efficiency and are promptly repaired when not in good working order;
- Vehicles and plant will not park near or over drains and will be washed in accordance with the commitments set out above; and
- Refuelling of vehicles and plant will be carried out on hard standing, using drip trays to ensure no fuel can contaminate the ground outside of the bunded areas.

The following measures will be implemented to reduce risks associated with concrete pouring:

- A suitable risk assessment for wet concreting will be completed prior to works being carried out and this will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil;
- Construction vehicles will be sent back to the construction compound for wash down as per CIRIA C648 (Murnane *et al.* 2006a) recommendations;
- Prior to the concrete pour taking place, all mitigation for turbidity and erosion control will be checked to ensures it is fit for purpose;
- Silt fencing will be installed around areas that are within 30m of a watercourse and hydrologically linked to a European Site where concrete pouring is to be undertaken and around the construction compound where construction vehicles will be cleaned, where required this may be double silt fencing; and
- Vegetation will be retained where possible, however, where targeted vegetation removal is required, silt fencing will be installed in these areas under direction of the ECoW.

The following measures will be implemented to ensure reinstatement of land and vegetation to protect watercourses:

- Land will be reinstated to its baseline condition, in so far as possible. The reinstatement operation will start with restoration of the subsoil by scarifying / ripping it with flat lift rippers, pulled by a bulldozer to a minimum uniform depth of 300mm, with care taken to prevent damage to field drainage and other services. The depth of ripping will be selected to scarify / loosen any material compacted during construction. In all cases the depth of ripping will exceed the depth of subsoil compaction. All surface stones and roots over 150mm in diameter will be picked up and removed. Re-grading subsoil using excavators / graders will be carried out and will include side slopes, where applicable;
- The spreading of subsoil and later topsoil will be carried out during favourable weather conditions when the soil is drier and more friable. The subsoil stockpiled for reinstatement will be pulled back from the fence line using excavators to allow bulldozers to push it evenly back across the corridor and leaving it generally level. Then the separately stockpiled topsoil will be pulled back from the fence line using excavators to allow bulldozers to push it evenly back across the corridor and leaving it generally level so as to present a neat and level appearance (the level of the trench area shall be the same as that of the undisturbed surrounding ground around one year after restoration is completed); and
- Reseeding will then be carried out on completion of the topsoil spreading, if required. Semi-natural habitats will be left to re-vegetate naturally from the seed bank within re-instated soils. Commercial seed mixes will only be used to re-instate vegetation on agricultural lands (EirGrid 2023). The rate of seeding, time and method of sowing, including the application of fertiliser will be undertaken in agreement with an experienced ecologist and will follow the regulations for the

protection of watercourses (S.I. No. 113/2022 – European Union (Good Agricultural Practice for Protection of Waters) (Amendment) Regulations 2020) and guidance on reseeding (Teagasc 2014).

6.3 Disturbance

The mitigation measures set out herein will be implemented to ensure that there will be no disturbance to QI species within functionally linked habitat during the Construction Phase of the Proposed Development.

- A 3-4m high non-transparent visual and noise screening barrier will be erected along the perimeter of the site to block the construction works and the movement of machinery/workforce to minimise disturbance to protected birds in functionally linked habitats. This height will be achieved at the typical working level of plant and personnel and will be raised accordingly if necessary to ensure that the screening is of adequate height (i.e., no visual disturbance), locations of the proposed screening are shown in Table 6.2;
    - This screening barrier will have a mass per unit area exceeding 7kg/m^2 in accordance with the recommendations of Part B.4 of BS 5228 Part 1:2009+A1:2014 (BSI 2014). The fencing will be of adequate height to screen the works area (3-4m) or as advised by a site engineer in conjunction with an experienced ecologist. The appointed ECoW will supervise the erection of the screening (where natural screening cannot be retained) and provide guidance through a toolbox talk ensuring these measures are effective;
    - Screening will be installed prior to site clearance and installation will be monitored by the EcoW;
    - This screening will remain in place for the duration of the works and will be moved regularly as work advances; and
    - The appointed ECoW will make regular checks of the screening throughout the works to ensure it is maintained in good condition and working order.
- All plant used during the Construction Phase will be the quietest of its type practical for achieving the works, as demonstrated in writing by the appointed contractor to the local planning authority, with reference to other noisier models.
- All plant will be operated and in accordance with the manufacturer's recommendations including the use and maintenance of specific noise reduction measures to reduce the impact further:
    - The use of mufflers on pneumatic tools;
    - Effective exhaust silencers;
    - Sound reducing enclosures; and
    - Machines in intermittent use shall be shut down during periods where they are not required.
- Any temporary lighting installed for the Construction Phase will be fitted with a cowl to limit light spill and will be directed away from habitats outside the Proposed Development site;
- Working at night will be prohibited unless agreed with the ECoW and with the local planning authority;
- Any lights will be turned off after working hours;
- Noise levels will not exceed permissible levels for construction works (70dB(A)) based on Guidelines for the Treatment of Noise and Vibration in National Road Schemes (NRA 2004);
- A Noise and Vibration Management Plan will be developed by the appointed contractor; and
- Post the Construction Phase, commercial seed mixes will only be used on agricultural lands. All other areas will be left to naturally revegetate from the seed bank within reinstated soils (EirGrid 2023).

7. In-combination Assessment

In order to take account of in-combination effects, proposals in adopted plans and in finalised draft plans which have been formally published or submitted for consultation or adoption, and projects that are completed, approved but not commenced or uncompleted, or proposed (for which an application for approval or consent has been made but not yet approved, including refusals subject to appeal and not yet determined) should be considered in this context (EC 2002). Using the National Planning Application Database (NPAD 2024) a search for plans and projects within 1km of the Proposed Development (considered a precautionary and proportionate distance for ZoI of direct impact) which have been submitted in the last three years (the three year period would cover any projects in likely still their construction phase that could overlap with the Proposed Development construction programme) was conducted in January 2024, and was up to date at the time of submission of the NIS. Details of the planning applications, were inspected on the following websites, and the results tabulated and presented in Table 7.1:

- An Bord Pleanála: https://www.pleanala.ie/en-ie/home (An Bord Pleanála 2024);
- Dublin City Council: https://planning.agileapplications.ie/dublincity (Dublin City Council 2024);
- Fingal County Council: https://planning.agileapplications.ie/fingal (Fingal County Council 2024); and
- Meath County Council: https://www.eplanning.ie/MeathCC/searchtypes (Meath County Council 2024).

Table 7.1: Results of the Review of the Desk-based Search Including the National Planning Application Database (NPAD 2024)

Application Number	County Council	Description	Comment
N/A	Meath County Council	Meath Council Development Plan 2021-2027 A Natura Impact Report was prepared (Scott Cawley 2021) in support of The Meath County Development Plan 2021-2027. This report assessed potential impacts arising from the Meath County Development Plan 2021-2027 (Meath County Council 2021). No adverse effects were identified on the site integrity after implementation of mitigation on any of the European sites identified within the ZoI or the vicinity of the Proposed Development. However, in the absence of mitigation there is the potential for in-combination effects.	Before mitigation there is potential for in-combination effects. However, with mitigation in place from the Meath County Development Plan, as detailed in Section 6.3 of the NIR for measures to ensure the removal of risks of adverse effects on the integrity of European sites from impacts to water quality, hydrology, habitat loss/degradation, fragmentation, and disturbance, there is no potential for in-combination effects with the Proposed Development.
N/A	Fingal County Council	Fingal County Development Plan 2023-2029 A Natura Impact Report was prepared (Scott Cawley 2023) in support of The Fingal County Development Plan 2023-2029. This report assessed potential impacts arising from the Fingal County Development Plan 2023-2029 (Fingal County Council 2023). No adverse impacts were identified on the site integrity after implementation of mitigation on any of the European sites identified within the ZoI or the vicinity of the Proposed Development. However, in the absence of mitigation there is potential for in-combination effects.	Before mitigation there is potential for in-combination effects. However, with measures (Policies and Objectives) as detailed in the Fingal County Development Plan, and as detailed in Section 8 of the NIR, there is no potential for in-combination effects with the Proposed Development.
N/A	Dublin City Council	Dublin City Development Plan 2022-2028 A Natura Impact Report was prepared (Scott Cawley 2022) in support of The Dublin City Development Plan 2022-2028. This report assessed potential impacts arising from the Dublin City Development Plan 2022-2028 (Dublin County Council, 2022). No adverse impacts were identified on site integrity after implementation of mitigation on any of the European sites identified within the ZoI or the vicinity of the Proposed Development. As such, no in-combination effects are anticipated between the Proposed Development and the Dublin City Development Plan 2022-2028.. However, in the absence of mitigation there is potential for in-combination effects.	Before mitigation there is potential for in-combination effects. However, with measures (Policies and Objectives) as detailed in the Dublin City Development Plan, and as detailed in Section 8 of the NIR, there is no potential for in-combination effects with the Proposed Development.
316372	Meath County Council & Kildare County Council	Kildare to Meath Grid Upgrade Project (CP0966) This Project is submitting for planning permission in Q1 2024. Construction Phase of CP0966 is estimated to commence in Q2 2026 and be completed by Q3 2028. This project involves improvements to the transfer of electricity to the east of Ireland and its distribution within the network in Meath, Kildare, and Dublin. Specifically, it comprises of a 400kV UGC of 50km between Woodland substation in Meath and Dunstown substation in Kildare. A common infrastructure corridor measuring 2.9km in length for Kildare Meath and the Proposed Development is proposed to facilitate the routing of both cables from Woodland substation to the R156, at which point they will be routed in opposite directions along the R156. The Construction Phases will overlap since a joint construction wayleave is included here. Where they overlap they cross the Dunboyne Stream (segment code 09 354).	No potential for in-combination effects. The NIS for this project does not identify any impacts to European sites screened in for the Proposed Development. As a result, no in-combination impacts are predicted.

Application Number	County Council	Description	Comment
		However, as the Dunboyne stream has no hydrologically connectivity to Rye Water Valley Carton / SAC, as assessed in the Projects NIS but not part of the assessment for the Proposed Development's NIS as outside the ZoI, there is no potential for in-combination effects from this Project.	
314724	Dublin City Council	Metrolink Metrolink is a proposed high capacity, high frequency rail line running from Swords to Charlemont, linking Dublin Airport, Irish Rail, DART, Dublin Bus, and Luas services in the GDA. It is estimated that it will carry up to 50million passengers annually. It is the biggest investment in transport infrastructure in Ireland and is included in Project Ireland 2040. The predicted construction timeline for the project is 9.25 years Application lodged – not yet determined. This project may result in cumulative effects with the Proposed Development particularly in the section of line between Dublin Airport Airport and Donabate. Here the proposed Metrolink line is located approximately 1km west of Malahide Estuary SAC/ SPA and crosses watercourses such as Cuckoo Stream (segment code 09 1498) which has connectivity with European sites included in the NIS for the Proposed Development. The Project will be crossed by the Proposed Development in Naul Road, north of Dublin airport. In addition, high voltage UGC are proposed to support the operation of the rail line; a 110kV cable proposed from the south of Dublin airport to a new 220kV substation on Naul Road; and a 220kV connection from the Naul Road substation to Belcamp substation, both of which follow some of the same route as for the Proposed development. The project overlaps with the proposed cable route Planning Application Boundary. Lodged for planning. No determination at time of writing. Potential for Construction Phases to overlap. Operational Phases will coincide.	Before mitigation there is potential for in-combination effects. The project overlaps with the proposed cable route Planning Application Boundary and there is potential for both construction and operational phases to overlap with the Proposed Development. However, with mitigation in place for Metrolink, there is no potential for in-combination effects.
PCI0001	Armagh County Council, Tyrone County Council, Monaghan County Council, Cavan County Council and Meath County Council.	CP0466 North South Interconnector Project. This project involves a second, higher-capacity interconnector being added, to connect the electricity grids of Ireland and Northern Ireland. It will connect to the network in Northern Ireland in Co Tyrone, cross the border between Armagh and Monaghan, and then join the network in Ireland at an existing substation in County Meath This project has received consent and it is due to commence in 2025. It is anticipated that this project will be completed in 2027. This project proposes the addition of a new 400 kV overhead line connecting the electricity grids of Ireland and Northern Ireland. The proposed line runs through counties Armagh, Tyrone, Monaghan, Cavan, and Meath. The project overlaps with the Proposed Development at Woodland Substation Planning Application Boundary for the Proposed Development.	No potential for in-combination effects. The NIS for this project does not identify any impacts to European sites screened in the Proposed Development. As a result, no in-combination impacts are predicted.
Not Available	Dublin City Council and Fingal County Council	Shellybanks to Belcamp 220 kV Cable Project. This project has received consent, is under construction and it is due to be energised in Q3 2024. Construction will be completed before the Construction Phase for the Proposed Development is due to commence. This project constitutes 10km of UGC in the interest of supply security in the Greater Dublin Area. This will provide a second 220 kV connection to	Before mitigation there is potential for in-combination effects. The project overlaps with the proposed cable route Planning Application Boundary at Belcamp Substation and there is potential for the operational phase to overlap with the Proposed Development. However, with

Application Number	County Council	Description	Comment
		the new Belcamp 220 kV substation. The Project overlaps with the Proposed Development at Belcamp Substation Planning Application Boundary.	mitigation in place from this project, there is no potential for in-combination effects.
Not Available	Dun Laoghaire County Council, Dublin City Council, Meath County Council and Louth County Council	NISA Connection The North Sea Irish array is an off-shore windfarm that is proposed in the Irish Sea off the coast of counties Dublin, Meath and Louth, bringing with it an opportunity to significantly contribute to the development of a clean, renewable energy future for the region. The proposal is targeting a planning submission date in 2024 and once operational, would have the capacity to provide renewable energy for up to 500,000 homes. A new 220kV connection is proposed to deliver the generated energy from NISA to the transmission network via Belcamp Substation.	Before mitigation there is potential for in-combination effects. No AASR or NIS available for the project. For the terrestrial element there is potential for in-combination impacts from pollution and from disturbance to QI birds For the marine element there may be in-combination effects from disturbance to QI bird species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
Not Available	Dublin City Council and Fingal County Council	Finglas to Belcamp 220kV diversion This project is for an existing 220kV connection between Finglas substation and a 220kV substation at Dublin Airport to be diverted to Belcamp to provide a direct connection between Finglas and Belcamp Substations. This will be connected across Stockhole Lane and enter Belcamp Substation from the west, connecting into the extended 220 kV GIS substation.	Before mitigation there is potential for in-combination effects. No AASR or NIS available for the project. There is potential for in-combination impacts from pollution to and from disturbance to QI birds. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
312131	Fingal County Council	Greater Dublin Drainage Project. Application lodged – no determination at time of writing. The proposed orbital sewer will overlap with the Proposed Development boundary on approach to Belcamp Substation. Immediately north of Belcamp Substation it is proposed to construct a new Wastewater Treatment Plant and associated sewer infrastructure from the west and south. The Proposed Development will cross the orbital sewer in the vicinity of Stockhole Lane; the proposed WwTP is less than 100m north of Belcamp Substation where the proposed 400 kV GIS building will be constructed. The proposed orbital sewer will overlap with the proposed cable Planning Application Boundary on approach to Belcamp Substation. Proposed orbital sewer will overlap with the proposed cable route Planning Application Boundary on approach to Belcamp Substation	Before mitigation there is potential for in-combination effects. No AASR, however as this development is located in a significantly large area of functionally linked habitats, this development along with other applications in this table is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI bird species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
21249 and 21338	Meath County Council	Kilbride Metropolitan Park development. This development comprises: 1. A new entrance with a priority junction off Hollystown Road and road widening; a new 430m long carriageway with paths and cycle lanes for the internal road layout; a rising main connection to the pumping station in Kilbride Village; widening of the existing bridge to the public road; an emergency underground storage tank and pumping station within the site; underground attenuation tank and a new boundary treatment to the public road to include a double stud fence. The proposed development will	Before mitigation there is potential for in-combination effects. No AASR available for the project, however as this development is located in a significantly large area of functionally linked habitats, this development along with other applications in this table is likely to have in-combination effects with the Proposed Development from disturbance, habitat

Application Number	County Council	Description	Comment
		also include all ancillary drainage, services, landscaping, public lighting, road signage and all site development works associated with the proposed development. The projects are approximately 110m (21249) and 30 m (21338) from proposed cable route Planning Application Boundary. The respective status of the applications are incomplete (21249) and refused (21338).	degradation and mortality increasing the level of stress on QI bird species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
21391	Meath County Council	Karlswood Stud development. This development comprises: 1. an extension to the building permitted under planning ref: RA/180560, including plant room extension and equine treatment area extension. 2. Minor alterations to layout, position and elevations to buildings permitted under, planning ref: RA/180560. 3. An additional storage building. 4. A covered lunge ring. 5. Alterations to landscaping arrangements permitted under planning ref: RA/180560, and the provision of an outdoor sand arena. 6. A new stable building and associated storage building. 7. A new wastewater treatment system and percolation area and all associated site development works. The project is 15m from proposed cable route Planning Application Boundary. Application finalised and decision granted. The commencement date was July 2021.	No potential for in-combination effects. No AASR available for the project, however this project is unlikely to have in-combination effects with the Proposed Development as construction phases do not overlap, the project commencement date was July 2021, and due to the Project's footprint within an existing equestrian centre during the Operational Phase.
21677	Meath County Council	Biopharmaceutical Manufacturing and Research Facility This development relates to the existing planning permission Ref RA170887. The development consists of 1. A single storey with mezzanine Biopharmaceutical Manufacturing and Research Facility. 2. A single storey partially glazed pedestrian link approximately 4 metres high. 3. A three-storey canteen and laboratory extension. 4. The relocation of 2no. single storey modular liquid supply and waste stores to the east of the existing warehouse. 5. The demolition of the existing single storey waste store and the construction of a new waste store. 6. An extension to the west side of the existing single storey ESB substation. 7. The addition of 162 permanent car parking spaces and a dedicated shuttle bus parking area and shelter. 8. A landscaped berm approximately 8 metres high located to the east of the existing manufacturing site. 9. An additional utilities yard, housing plant and equipment. 10. Alterations and extensions to existing roads and site works. The project is 400m from proposed cable route Planning Application Boundary. Application finalised and decision granted. The Project commenced in August 2021.	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project, the works taking place in the footprint of the existing facility, and the commencement of the Project in 2021, there is no potential for in-combination effects.
221027 and 22961	Meath County Council	Housing development. The development will consist of 1. demolishing the existing house. 2. the construction of 8 no. new semi-detached houses with two no. car-parking spaces each. 3. repositioning of the site entrance, construction of a road, new perimeter walls and all associated site works. The projects are 550m (22961) from proposed cable route Planning Application Boundary. At the time of writing the application status of 22961 was incomplete, while for 221027 the status was under review.	No potential for in-combination effects. No AASR available for the project, however this project is unlikely to have in-combination effects with the Proposed Development due to this development's footprint within an existing urban landscape.
221508	Meath County Council	Solar Energy Farm development. This development is for a Solar PV Energy Development on a site area of 171.34 ha. It includes 1. solar panels mounted on steel support structures. 2. associated cabling and	No potential for in-combination effects. This project is accompanied by an NIS. However, it

Application Number	County Council	Description	Comment
		ducting. 3. Installation of 47 MV Power Stations, 3 Client Substations. 4. security fencing and security gates, CCTV, landscaping and ancillary works. The project is adjacent to cable route Planning Application Boundary. At the time of writing the application status was under review.	did not identify potential for LSEs or AESIs to any European sites screened in in this report.
221550	Meath County Council	EirGrid PLC CP1110 Woodland Substation Upgrade CP1110 Woodland Station 400–- 220KV Protection Upgrade, not part of the Proposed Development. The project will consist of 1. Installation of outdoor Air Insulated Switchgear (AIS) electrical apparatus, including an associated extension to the hardstand compound (approximately 4 hectares) to facilitate same. This project overlaps with the Proposed Development at Woodland Substation. Planning permission is granted. Construction timeline unknown but due to be energized by Q4 2024.	No potential for in-combination effects. There will not be an overlap in construction phases as the project will be energized by the end of 2024 and the construction phase for the Proposed Development will commence in Quarter 2, 2025. No operation effects are predicted with the implementation of mitigation.
221637	Meath County Council	Housing development. This development relates to the existing planning permission AA170905. This development comprises the construction of 1. 19 houses. 2. a new vehicular entrance from the L1007 road, internal roads/verges/footpaths/cycle paths, vehicular turning circle and access to adjoining agricultural lands/future development. 3. public open space, landscaping, lighting, individual and overall site boundary proposals. 4. plus all associated site development and engineering works and services. The project is 140m from cable route Planning Application Boundary. Application finalised and planning permission granted in February 2023.	No potential for in-combination effects. No AASR available, however this development is unlikely to have in-combination effects with the Proposed Development due to this development's footprint within an existing urban development and a small area of the agricultural landscape.
22236	Meath County Council	Kilsaran Concrete development. This development comprises the construction of a new extension (max 8m high with a gross floor area of 430 sqm to the northern and eastern elevations of an existing factory building used for the manufacture of concrete products and all ancillary works. The project is 260m from cable route Planning Application Boundary. Planning permission granted in April 2022.	No potential for in-combination effects. No AASR available, however this development is unlikely to have in-combination effects with the Proposed Development due to this development's footprint within an existing industrial estate.
22392	Meath County Council	Kilsaran Industrial Park development. This development comprises the construction of 1. a new two storey office building and extension of existing Kilsaran Concrete showroom and office building. 2. 43 additional carpark spaces and 20 bicycle spaces with associated changing/shower rooms. 3. Construction of standalone single storey showroom building with an additional 19 dedicated car parking spaces and 2 bicycle spaces. The project is 95m from the proposed cable route Planning Application Boundary. Planning permission granted. .	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of the existing industrial estate, no in-combination effects are predicted.
22837 and 23136	Meath County Council	Battery Storage Facility at Woodlands Substation. This development comprises 1. rechargeable battery units with grid forming inverters contained within 253 containers. 2. a synchronous condenser within a c.983 sqm building with associated compound & plant. 3. an underground cable which will connect the new	No AASR available, however as this development is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the

Application Number	County Council	Description	Comment
		battery energy storage facility to the adjoining proposed 220 kV Gas Insulated Substation. 4. a battery storage control building and all ancillary works. The project is 160m from Woodland substation Planning Application Boundary. Application status permitted. Due to commence construction in Q2 2025 and be completed by Q4 2028.	Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI bird species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
23424	Meath County Council	Industrial/Office Development at the M3 Park and Ride. This development comprises 1. Construction of 3 office buildings 3 to 4- storeys high. 2. Provision of a 4-arm signalised junction replacing the existing Pace roundabout. 3. internal access roads to serve the development. 4. Upgrade works to the R157 and M3 Parkway access road to facilitate junction improvements. 5. A total of 275 car parking spaces. 6. 3 standalone electricity substations and all ancillary site and development works. The project is 70m from cable route Planning Application Boundary. At the time of writing no planning decision had been taken and planning status was further information requested as of June 2023.	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and mortality to South Dublin Bay and River Tolka SPA and North Bull Island SPA. Therefore, there is potential for in-combination effects to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the Project there is no potential for in-combination effects.
2360065	Meath County Council	Commercial Development at the M3 Park and Ride. This development comprises 1. Construction of a single-storey commercial with a supermarket and 2 commercial units. 2. Provision of a 4-arm signalised junction replacing the existing Pace roundabout. 3. Upgrade works to the existing R157 and M3 Parkway access road to facilitate junction improvements. 4. 6m wide internal access roads to serve the development. 5. A total of 118 car parking spaces. 6. 1 electricity substation / switch room and all ancillary site development works. The project overlies the proposed cable route Planning Application Boundary. At the time of writing the planning status was 'further information' requested on 21 July 2023.	Potential for in-combination effects. This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and mortality to South Dublin Bay and River Tolka SPA and North Bull Island SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project there is no potential for in-combination effects.
2360281 and 2360290	Meath County Council	Housing Development at the M3 Park and Ride. This development comprises 1. 145 dwelling houses and 122 apartments/ duplexes ranging in height from 3 to 5 storeys. 2. a single storey creche. 3. changes to the existing carriageway/traffic lanes and the replacement of an existing roundabout with a new signalised junction. 4. a new signalised junction and link road (including new bridge over the River Tolka) connecting the R157 and the Old Navan Road. 5. all associated ancillary development works including footpaths, cycle lanes, car and bicycle parking, drainage, public lighting, bin storage, boundary treatments and landscaping/amenity areas at this site. The project is 315m from proposed cable route Planning Application Boundary. Timeline unknown but construction is estimated to take 3 years. Potential for Construction Phases to	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and mortality to South Dublin Bay and River Tolka SPA and North Bull Island SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project there is no potential for in-combination effects.

Application Number	County Council	Description	Comment
		overlap. Operational Phases will coincide. The application was received in September 2023 and at the time of writing the planning status was 'incomplete application'	
23880	Meath County Council	Ballymaglassan Stud development This development comprises 1. new entrance and driveway. 2. the completion of a horse lounge, visitor centre with offices. 3. turn out areas, septic tank and percolation area including yards and attenuation. The project is 80m from route Planning Application Boundary. The application was received in September 2023 and at the time of writing the planning status was 'incomplete application'	No AASR available, however as this development is located in a significantly large area of functionally linked habitats, this development along with other applications in this table is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI bird species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
3041/22	Dublin City Council	Belcamp Access development. This development is for access to the Synchronous Compensator Development on lands south of Belcamp 220 KV substation. This development comprises 1. New access entrance from the R139 and a clear span bridge crossing over River Mayne. 2. Internal access tracks, security fencing, temporary construction compound, landscaping, and drainage. The project is 4m from Belcamp Substation Planning Application Boundary. Planning permission granted in August 2022. No further information regarding construction is provided on the planning portal.	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and disturbance to Baldoyle Bay SAC and Baldoyle Bay SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project there is no potential for in-combination effects.
3803/20	Dublin City Council	Data Centre development. This development comprises 1. Two data centre buildings with 16 emergency generators and a diesel storage tank, fuel filling area and associated plant. 2. a water sprinkler pump room with water storage tanks and humidifier tanks. 3. a client control building with two transformers in a fenced compound. 4. Demolition of 26 sqm substation building. 5. Partial diversion and undergrounding of ESB overhead lines. 6. Construction of internal site roads, 100 car parking spaces, 4 motorcycle spaces and 68 cycle parking spaces within a bicycle shelter. 7. Temporary construction access roads, landscaping and fencing and all ancillary site development. The project is 739m from Belcamp Substation Planning Application Boundary. Planning permission granted in August 2021. No construction timeline is provided on the planning portal.	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of greenfield lands not functionally linked habitat as it is mostly scrub within an urban environment and that there are no direct pathways to European sites there is no potential for in-combination effects.
F20A/0550 and F23A/0132	Fingal County Council	North Apron in Dublin Airport development. This development comprises 1. The expansion of the North Apron to provide 12 replacement aircraft stands and ground servicing equipment storage area. 2. Construction of a 520m long by 6m high blast fence on the northern and western boundary and a 20m long	An NIS was prepared by Atkins which concluded no residual impacts following mitigation for Baldoyle Bay SAC/SPA. As this European site is included with the NIS for the Proposed

Application Number	County Council	Description	Comment
		by 6m high blast fence southwest of the Apron. 3. Construction of a 550m service road immediately to the north and rehabilitation of existing pavement. 4. Construction of two new underground attenuation tanks on 9000 m^2 of existing grassland. 5. Provision of a total organic carbon analyser enclosure. 6. Provision of drainage and electrical infrastructure. 7. Provision of Aerodrome Ground Lights and 26 High Mast Lights. 8. Modifications to internal airside fencing, service road infrastructure and provision of construction site security fencing, construction compound and modification to security fence. The project is 448m from proposed cable route Planning Application Boundary. Planning permission for F20A/055A was granted following appeal in December 2021. Planning permission for F23A/0132 was granted in December 2023.	Development there is potential for in-combination effects in the absence of mitigation since this European site has hydrological connectivity to the Project via Cuckoo stream (segment 09_1498). However, with mitigation in place for the project there is no potential for in-combination effects.
F20A/0636	Fingal County Council	Radisson Hotel development part 1. This development comprises 1. The construction of a 1-6 storey extension to the existing hotel. 2. Construction of a new leisure facility including swimming pool and gym at ground floor. 3. Plant at lower ground and roof level. 4. New landscaped entrance courtyard, security hut, bicycle parking, underground attenuation and all associated landscaping, signage, site works and services. 5. Works to elevation of existing hotel facade including new entrance and canopy. The project is 690m from proposed cable route Planning Application Boundary. Planning permission granted.	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of an existing hotel no in-combination effects are predicted.
F20A/0638	Fingal County Council	Radisson Hotel development part 2. This development comprises 1. A new standalone 8-12 -storey hotel. 2. Kitchen, staff facilities, storage rooms, bin stores toilets, plant and back of house services at ground and basement level. 3. Double height reception, restaurant/ bar/ lounge area at ground floor with outdoor seating areas. 4. New landscaped entrance courtyard, security hut, bicycle parking. 5.Coach set down and car drop -off area at entrance to new hotel and reconfiguration of car park to rear of existing hotel. The project is 690m from proposed cable route Planning Application Boundary. Planning permission granted. .	No potential for in-combination effects. No AASR, available however this project is unlikely to have in-combination effects with the Proposed Development due to the hotel's footprint within an existing urban landscape.
F21A/0147, F23A/0006 and F23A/0413	Fingal County Council	The F21A/0147 and F23A/0006 developments comprises 1. Two single storey light industrial buildings including ancillary office space. 2. internal site road and a car park space. 3. surface water attenuation, sub-station and switch room. 4. relocation of overhead power lines. 5. relocation of the ESB Substation and Switch Room 6. all associated site and development works above and below ground. The F23A/0413 development comprises 1. construction of a Light Industrial Development comprising five. units with offices, staff facilities and associated developments. 2. the provision of a multimodal entrance to the site from the Stockhole Lane Roundabout via an extended local access road. 3. pedestrian, cyclist and emergency vehicular entrances and internal roads. 4. A car park, loading bays, bin store, ESB substation and switchroom, boundary treatments, hard and soft landscaping, lighting, green walls, solar panels, signage and all associated development works. The project is 121m from proposed cable route Planning Application Boundary. Planning permission granted.	No potential for in-combination effects. No AASR available, however this project is unlikely to have in-combination effects with the Proposed Development due to this projects footprint within and adjacent to an existing industrial estate.

Application Number	County Council	Description	Comment
F21A/0232	Fingal County Council	Dublin Airport Compound development. The development will consist of a temporary construction 'West Compound' to assist with ongoing airport developments. This development comprises 1. the continuation of use of the existing North Runway contractor compound. 2. a consolidated 'West Compound' for airside development contractors on a 5.9 ha site adjoining the R108 public road. 3. car park and trailer set down area, new bus stop, cycle parking provision, a new hardstanding area for skip set down, new streetlighting and electrical switchroom. The project is 532m from proposed cable route Planning Application Boundary. Planning permission granted.	No potential for in-combination effects. No AASR available, however this project is unlikely to have in-combination effects with the Proposed Development due to this projects footprint within an existing car park and storage yard.
F21A/0255	Fingal County Council	Dublin Airport Skybridge Hotel development. For development at four site addresses: A - Hotel Site adjoins the T2 Multi-Storey Car Park to the north, Dublin Airport: B - Skybridge House, Dublin Airport; C-Site Compound 1 is bounded by the T2 Departure Road to the west and T2 Multi-storey Car Park to the east, Dublin Airport; D-Site Compound 2 is located to the east of Swords Rugby Club. Site A- The proposed development comprises 1. the erection of a new part 3-12 storey hotel integrated with the existing elevated pedestrian link bridge connecting T2 and T2 Car Park. 2. Ancillary facilities at the upper levels include a leisure centre and a bar and an executive lounge. 5. An internal one-way access road is provided and designated layby is provided to the front of the hotel on this internal access road. Site B - The proposed development comprises 1. The removal of the existing weather radome and support structure from its rooftop location at Skybridge House and to provide a new replacement weather radome on top of the proposed hotel. Site C and D: Permission for the temporary use (for a period of 5 years) of two sites as construction compounds to serve the construction phase of the proposed development. The project is 855m from proposed cable route Planning Application Boundary Planning permission granted.	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of an existing car park/ airport forecourt no in-combination effects are predicted.
F21A/0518	Fingal County Council	Dublin Airport Internal Roads development The proposed development comprises 1. alterations to section of the existing internal road network and associated works, on the Departures routes to and from the Terminal 1 and Terminal 2 forecourts. 2. realign existing exit lanes from both the Terminal 1 and Terminal 2 forecourts to provide four new exit lanes. 3. Internal alterations to T2 short term car park 6. Internal alterations to the Express Red Long-Term Car Park. 4. all associated lighting, CCTV, barriers, signage, bike lanes, bus lanes etc. The project is 790m from proposed cable route Planning Application Boundary Planning permission granted.	No potential for in-combination effects. An AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of existing car parks/ airport access roads no in-combination effects are predicted.
F22A/0682	Fingal County Council	Dublin Port to Dublin Airport Fuel Line development. This development relates to the existing planning permission for F15A/0141 the Dublin Port to Dublin Airport fuel pipeline. Permission sought for alterations to this plan. The	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and mortality

Application Number	County Council	Description	Comment
		proposed alterations comprise: 1. reroute the approved pipeline from Clonshaugh Road North along the southern boundary of Athletic Union League/FAI sports grounds, under the M1 Motorway, into Dublin Airport lands south of the Eastlands Car Hire Compound, along the western boundary of Eastlands Car Hire Compound where it will connect to the approved route. 2. all ancillary works, including landscaping and site preparation, necessary to facilitate the development. The project overlaps with the proposed cable route Planning Application Boundary. Planning permission granted.	to Baldoyle Bay SAC and Baldoyle Bay SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project there is no potential for in-combination effects.
F23A/0040	Fingal County Council	Belcamp Substation development. The project is 37.5km of new 400kV underground cables between the existing Woodland Substation in the townland of Woodland, near Batterstown, County Meath and the existing Belcamp Substation in the townland of Belcamp in Fingal, north County Dublin. A new 400kV Gas Insulated Switchgear Hall and associated transformers will also be required at Belcamp Substation. The project overlaps with the Proposed Development at Belcamp Substation. Planning permission granted.	There is potential for in-combination impacts from the project from pollution to Baldoyle Bay SAC via a hydrological link; and from disturbance to Baldoyle Bay SPA, North Bull Island SPA, Malahide Estuary SPA and South Dublin Bay and River Tolka Estuary SPA. However, with mitigation in place for the project, there is no potential for in-combination effects.
F23A/0245	Fingal County Council	Ryanair Hangar development. The proposed development comprises 1. construction of a single-storey, part two-storey four-bay hangar designed to accommodate up to four Aircrafts, with associated maintenance facilities, ancillary offices and staff areas. 2. demolition of the existing internal airport roadway on site and the development of new site access arrangements. 3. external covered bin storage, chemical storage, new substation, provision of 20 parking spaces and new service connections. 4. all other associated site and development works. The project is 370m from proposed cable route Planning Application Boundary. Planning permission granted.	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution and mortality to Baldoyle Bay SAC and Baldoyle Bay SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project, there is no potential for in-combination effects.
F23A/0465	Fingal County Council	AUL Football Pitch development. The proposed development comprises 1. One full size soccer all weather artificial grass, drained playing pitch with 5m run-off area. 2. Dual configuration of two seven a-side soccer pitches which can also be used as one eleven a-side soccer sand-based grass, drained playing pitch with 5m run-off area. 3. LED Floodlighting to all-weather pitch mounted on columns and generator on hard-standing. 4. construction of five changing facilities, a toilet and shower block, storage unit and access paths. 6. New wastewater treatment system, percolation bed and surface water drains to catch and attenuate run-off from roofs and hard standing, as well as drain the pitches. The project is adjacent to proposed cable route Planning Application Boundary. Planning permission granted.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project along with other applications in this table is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW21A/0042	Fingal County Council	Gleanveagh Homes development.	No potential for in-combination effects. The AASR that accompanied this planning application concluded that Stage 2 Appropriate

Application Number	County Council	Description	Comment
		The proposed development comprises 1. 69 houses and all associated roads, services, visitor parking, public open spaces, changes in level, hard and soft landscaping and boundary treatments where required. 2. The construction of a new foul outfall sewer approx. 3km in length to connect to the existing 600mm diameter foul sewer. 3. The construction of a new vehicular entrance off Hollywoodrath Road, a new footpath and cycle path along the northern and western side of the R121 along the site frontage extending south to the existing Toucan crossing and provision of 2 no. new Toucan crossings on the R121. 4. The development of proposed public open space including walking routes, seating areas, kick about area, playground, dog park, associated landscaping works including planting, changes in level and boundary treatments, and 10 no, public cycle parking spaces. 4. The development of ancillary landscaped areas and sustainable urban drainage systems under the existing ESB powerlines, and all associated ancillary site development infrastructure including: ESB sub-station, public lighting, and foul and surface water drainage; internal roads & footpaths. The project is 756m from proposed cable route Planning Application Boundary. Planning permission granted.	Assessment was not required. The Proposed Development pollution pathway to Rockabill and Dalkey SAC is ecologically inconsequential due to the hydrological distance and dilution factor linking to this European site, and therefore there is no potential for in-combination impacts to this site via the same pathway.
FW21A/0136	Fingal County Council	Compressed Natural Gas Compressor development. The proposed development comprises 1. one single storey compressed natural gas compressor installation. 2. one single storey ESB MV Substation, 1.8m & 2.4m high fences, fuelling dispensers, forecourt, fuel totem. 3. access to existing private road and associated ground works. The project is 270m from proposed cable route Planning Application Boundary. Planning permission granted.	No potential for in-combination effects. The AASR that accompanied this planning application concluded that Stage 2 Appropriate Assessment is not required. Given the lack of significant effects arising from this project and the works taking place in the footprint of existing industrial estate no in-combination effects are predicted.
FW21A/0187 and FW23A/0031	Fingal County Council	Keelings Warehouse development. The proposed development comprises 1. construction of a warehouse unit including ancillary office space, staff facilities and associated development. 2. provision of a new vehicular, pedestrian and cyclist entrance off the Food Central Access Road, internal roadways; and car park and all other ancillary works. The project is 220m from proposed cable route Planning Application Boundary. Planning permission granted.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW22A/0098	Fingal County Council	Hollystown GAA Ground development: GAA grounds on the former Hollystown Golf Course lands development. The proposed development comprises 1. four floodlit GAA pitches with 1 x synthetic all weather pitch and 3 x sand-based grass pitches. 2. renovation and alteration of the former clubhouse. 3. the provision of a separate Indoor Training Facility. 4. the construction of a Spectator Stand. 5. Hurling wall with fenced in floodlit astro-turf hurling practice area. 5. Maintenance and storage building 6. Demolition of existing driving range and pro-shop	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with

Application Number	County Council	Description	Comment
		shed. 7. Internal paths, roads, car parks. 8. Earthworks drainage infrastructure and attenuation, an ESB substation and switch room, retaining structures, signage, landscaping and all other associated site development works above and below ground level. The project is 182m from proposed cable route Planning Application Boundary. Planning permission granted.	mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW22A/0136 and FW23A/0161	Fingal County Council	Keelings Temperature-controlled Warehouse development: The proposed development comprises 1. a new temperature-controlled warehouse incorporating ancillary offices and storage areas and staff facilities. 2. ESB substation and solar PV panels. 3. loading area with associated dock levellers. 4. hard and soft landscaping, boundary treatments, new vehicular entrance, controlled gate, car parking, bicycle parking, HGV parking spaces, trailer parking spaces, lighting, signage, and all associated site development works. The project is 80m from proposed cable route Planning Application Boundary. Planning permission granted.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW22A/0167	Fingal County Council	Nexus Distribution Park development. The development will consist of 1. Five new office buildings and a management building within a business campus setting. 2. associated yard areas, trailer and truck parking together with car and bicycle parking spaces at surface level. 3. new pedestrian, bicycle and vehicular entrances including a new pedestrian and bicycle link to the R121, and internal pedestrian, bicycle and vehicular circulation. 4. associated landscaping, parkland area and public open space, boundary treatments, lighting, signage, CCTV; associated drainage, attenuation and services; and all associated construction compounds and site works. An Environmental Impact Assessment Report accompanies the planning application. The project is approximately 500m from the proposed cable route Planning Application Boundary. Planning permission granted.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW20A/0202 and FW22A/0179	Fingal County Council	Keelings Food processing Warehouse development. The development will comprise 1. the provision of a food processing warehouse facility. 2. an ancillary office building. 3. driver welfare facilities building. 4. a new vehicular entrance off the Food Central Access Road, internal roadways, traffic barriers, pedestrian access, car park, bicycle parking, hard and soft landscaping, signage and boundary treatments. 4. ESB substation and PV panels. 5. a diesel tank with two diesel pumps with a layby, weighbridge, waste storage area, lighting and associated site development works above and below ground. The project is approximately 215m from the proposed cable route Planning Application Boundary. Planning permission and retention granted.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW22A/0201	Fingal County Council	Irishtown Solar Farm development. The development will comprise 1. the construction of a Solar Photovoltaic panels on ground mounted frames/support structures within existing field boundaries. 2. six transformer	This planning application is accompanied by an NIS. In the absence of mitigation, it identified potential for LSEs from pollution to Malahide

Application Number	County Council	Description	Comment
		stations, inverters, three weather stations and all ancillary underground cabling and ducting. 3. internal site access tracks and new vehicular access from R121. 4. security fencing, CCTV structures, one storage container; landscaping including screen planting. 5. temporary construction compound and all associated site development works. The project is adjacent to the proposed cable route Planning Application Boundary. Planning permission granted.	Estuary SAC and Malahide Estuary SPA. Therefore, there is potential for in-combination impacts to these European sites as the Proposed Development has potential to impact these sites via the same pathway. However, with mitigation in place for the project there is no potential for in-combination effects.
FW23A/0036	Fingal County Council	Hollywoodrath House housing development. The development will comprise 1. A 96 home residential development of lands within the curtilage of Hollywoodrath House. 2. 192 car parking spaces and 62 bicycle parking spaces. 3. public open space, landscaping, trees, and boundary treatments. 4. public lighting, bin and cycle storage, ESB substation, foul drainage works along Ratoath Road. 5. all associated site infrastructure and engineering works necessary to facilitate the development. 6. Vehicular and pedestrian access is proposed via Gallanstown Road together with pedestrian access, including 2 new pedestrian crossings, at Ratoath Road. The project is adjacent to the proposed cable route Planning Application Boundary. Application under review.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW23A/0191	Fingal County Council	Cherryhound Logistics/Warehouse Park development. The development will comprise 1. 12 logistics/warehouse buildings (c. 159,924 sq.m), each building will include an attached office building, associated yard areas, trailer and truck parking, and car and bicycle parking spaces at surface level. 2. ancillary facilities to include a campus management/community building with associated outdoor sports/amenity space, a retail/café unit. 3. 12 substations, internal pedestrian, bicycle and vehicular circulation roads, lanes and pathways. 4. primary access via the existing roundabout at Cherryhound-Tyrrelstown M2-M3 Link Road and secondary emergency access via R121. 5. new pedestrian/bicycle links to Hollywoodrath Drive, the R121 and lands to the northeast and the provision of a pedestrian crossing and bus shelter at Hollywoodrath Drive. 6. associated landscaping, public open space, boundary treatments, lighting, signage and CCTV. 7. associated drainage, attenuation and service connections. 8. and all associated temporary construction compounds and site works. The project is adjacent to the proposed cable route Planning Application Boundary. Application under review.	No AASR available, however as this project is located in a significantly large area of functionally linked habitats, this project along with other applications in this table is likely to have in-combination effects with the Proposed Development from disturbance, habitat degradation and mortality increasing the level of stress on QI species. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
314232	An Bord Pleanala	TII – Dart+ West. Electrification and re-signalling of Maynooth and M3 Parkway Line, capacity enhancements at Connolly station, new Spencer Dock station, level crossing closures, new Dart depot west of Maynooth etc. Lodged for planning. No determination as of yet. Approximately 0.3km from proposed cable route Planning Application Boundary. Initially proposed to commence construction in the second half of 2023 (subject to planning approval) but planning is yet to be granted. A 47 month construction programme indicated and there is therefore potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.

Application Number	County Council	Description	Comment
317121	An Bord Pleanala	NTA – BusConnects - Swords to City Centre Core Bus Corridor Scheme. Overlaps with the proposed cable route Planning Application Boundary at the R132 Regional Road. Lodged for planning. No determination at time of writing. Proposed to deliver the BusConnects schemes over the period 2023 to 2028 (subject to planning approval), with a 36 month construction programme indicated. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
312060 / F21A/0401	An Bord Pleanala / Fingal County Council	Gannon Properties - Residential development at Belcamp Hall, Malahide Road, Dublin 17. Located approximately 1km from Planning Application Boundary at Belcamp Substation. Planning permitted. Construction timeline for other development unknown and there is therefore the potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
Exempted Development	Exempted Development	EirGrid CP0869 Maynooth - Woodland 220kV Line Uprate Overlaps with the Proposed Development at Woodland Substation Planning Application Boundary. Construction commenced in 2021 and is due to be completed by 2024. It is not likely that Construction Phases will overlap, but Operational Phases will coincide.	No potential for in-combination effects. Considering the nature, scale and location of this project, there is no potential for operational phase to result in in-combination impacts with the Proposed Development.
2360296	Meath County Council	EirGrid CP1235 Louth - Woodland 220 kV Uprate. Overlaps with the Proposed Development at Woodland Substation Planning Application Boundary. Status of the project is permitted. Construction due to commence in 2025, and be complete by 2029. Exact timeline for this development is unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project (i.e., uprating an existing overhead line), there is no potential for in-combination impacts to occur.
N/A **Future Planned Project as part of the TDP 2023 - 2032**	N/A	EirGrid CP1241 Belcamp Bulk Supply Transfer. Project will overlap with the Proposed Development at Belcamp Substation Planning Application Boundary. Timeline for this development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	No potential for in-combination effects. Considering the nature, scale and location of this project, there is no potential for the construction and operational phase to result in in-combination impacts with the Proposed Development.
314169 / F22A/0136	An Bord Pleanala / Fingal County Council	Gerard Gannon Properties Construction of 40 residential units in one block, including a childcare facility and café at Belcamp Hall, Malahide Road, Dublin 17. Project is 695m from Planning Application Boundary at Belcamp Substation. Planning application granted. Timeline for project unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if Construction Phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
303687	An Bord Pleanala	Amazon Data Services Ireland Ltd. Provision of a double circuit 110kV underground transmission line between the Belcamp 220kV and 110kV substation and the Darndale 110kV substation covering a distance of approximately two kilometres. The project overlaps with the Proposed Development at	No potential for in-combination effects. Considering the nature, scale and location of this project, there is no potential for the construction and operational phase to result in-

Application Number	County Council	Description	Comment
		Belcamp Substation. Planning application granted. Timeline for project unknown. Construction works, testing and reinstatement will take approximately 19 weeks. Limited potential for Construction Phases to overlap. Operational Phases will coincide.	combination impacts with the Proposed Development.
308130	An Bord Pleanala	Enginenode Limited 220kV substation with 2 underground transmission cables between Pace and Bracetown. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide. The project is 3m from proposed cable route Planning Application Boundary. Planning permission granted.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
309833 / FW21A/0003	An Bord Pleanala / Fingal County Council	Montague Ventures Limited Residential development on site of c.1.7 hectares consisting of construction of 52 no. residential units, refurbishment of existing former barracks building on site, carparking spaces, bicycle parking spaces and all associated site works. The projects is 237m from proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
312271	An Bord Pleanala	Glenveagh Homes Limited Demolition of an existing shed, construction of 548 no. residential units (401 no. houses, 147 no. apartments), 2 no. creches and associated site works. The project is 184m from proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Construction is estimated to take approximately 36 months. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
314894	An Bord Pleanala	Kilshane Energy Ltd. Proposed development of a 220kV Gas Insulated Switchgear (GIS) substation on lands at Kilshane Road, and an underground 220kV transmission line connection to the existing Cruiserath 220kV substation. The project is 557m from proposed cable route Planning Application Boundary. Planning permission granted. imeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
F21A/0147 / F23A/0006	Fingal County Council (FCC)	Genvest ULC. 2 no single storey light industrial buildings (total floor area of 3,333 sq.m) accommodating 3 units including ancillary office space at site west of Stockhole Lane/Clonshaugh Road, Clonshaugh, Co. Dublin. The project is 121m from proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
F21A/0681 /3041/22	Fingal County Council / Dublin City Council	Mayne Stability Limited Development of access to the Synchronous Compensator Development (Grid Stabilisation Facility) on the site of a c 0.94 ha. at lands south of Belcamp 220KV substation, Belcamp Dublin 17. The project is 4m from Belcamp Substation Planning Application Boundary.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in

Application Number	County Council	Description	Comment
		Planning permission granted. Timeline for other development unknown. Construction Phase is estimated to take approximately 12 months. Potential for Construction Phases to overlap. Operational Phases will coincide.	place for the Proposed Development there is no potential for in-combination effects.
FW19A/0177	Fingal County Council	ESB Engineering & Major Projects Proposed underground cable route originating from the existing Macetown ESB station (on Damastown Avenue in the townland of Macetown Middle) , running in an easterly direction along Damastown Avenue and the R121 (in the townlands of Macetown Middle, Macetown South, Tyrrelstown, Cruiserath and Buzzardstown), to a permitted medium voltage (MV) substation located within a permitted data storage facility in the townlands of Cruiserath and Tyrrelstown. The project is 1km from the proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Construction works, testing and reinstatement will take approximately 19 weeks. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
F18A/0306	Fingal County Council	Clarke Family Partnership Permission for the construction of 36 residential units consisting of 30 two storey houses (23 three bedroom type, 7 four bedroom type) and 6 number two bedroom apartments in a three storey block, with ancillary open spaces, boundary treatment and site works at Fosterstown North. The project is 1km from proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
FW22A/0156	Fingal County Council	Earlstand Corporation Unlimited Company Construction of 6 no. warehouses/logistics units including ancillary office/administration use and entrance/reception areas over two levels (Units 1-6) with a combined total floor gross area (GFA) of 50,934 sq.m at Mooretown and Northwest Logistics Park, Ballycoolin, Dublin 15. The project is 1km from the proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
F22A/0687	Fingal County Council	Clondev Properties Limited The development will consist of 1. Demolition of existing residential dwelling Hollytree House (c. 449.2 sqm). 2. Construction of 85 no. residential apartments (35 no. 1-bed, 37 no. 2-bed units and 13 no. 3 bed units) within a 5 - 8 no. storey (over undercroft) building, with all apartments served by private terrace or balcony. The project is 1km from proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
4367/19	Dublin City Council	The Electricity Supply Board (ESB)	Considering the nature, scale and location of this project, there is potential for in-

Application Number	County Council	Description	Comment
		200m long medium/low voltage (MV/LV) underground cable (UGC), to be installed in underground cable ducting in a c. 1m wide trench of depth c. 1m within an area of c.200sq.m., connecting the existing ESB network within the former Diamond Innovations site to the existing ESB Darndale substation. The project is 1km from Belcamp Substation Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
RA170873 / 23787	Meath County Council	South Meath Solar Farm Limited Solar farm including photovoltaic panels on ground mounted frames, inverter stations, 1 No. 110KV 4 Bay Electrical Substation at a site in the townlands of Vesingstown, Polleban and Harlockstown, Dunboyne, County Meath. The project is 660m from the proposed cable route Planning Application Boundary. Planning permission granted. Timeline for other development unknown. Potential for Construction Phases to overlap. Operational Phases will coincide.	Considering the nature, scale and location of this project, there is potential for in-combination impacts if construction phases were to overlap. However, with mitigation in place for the Proposed Development there is no potential for in-combination effects.
N/A	N/A	Uisce Éireann Trunk Water Mains Replacement – construction of a new trunk watermain to serve parts of Dublin North City and North County Dublin. Within the Planning Application Boundary for the proposed cable route along Kilreesk Road (north-west of Dublin Airport). Project in progress. Construction Phases not likely to overlap as this project is nearing completion. Operational Phases will coincide.	No potential for in-combination effects. Considering the nature, scale and location of this project, there is no potential for operational phase to result in in-combination impacts with the Proposed Development.
N/A	N/A	NTA Navan Rail Line Project. It is proposed to extend the rail system from the M3 Parkway terminus station (just west of Dunboyne) to Navan town, serving Dunshaughlin and Kilmessan along its route. The project is 225m from proposed cable route Planning Application Boundary. Option selection stage. The Navan Rail Line Project is listed for delivery in the medium-term category under the Greater Dublin Area Transport Strategy 2022 – 2042. Projects under this category are likely to be delivered between 2031 and 2036. There is therefore no potential for the Construction Phases to overlap. The Operational Phases will coincide.	No potential for in-combination effects. Considering the nature, scale and location of this project, there is no potential for operational phase to result in in-combination impacts with the Proposed Development.

7.1 Conclusions of In-combination Effects

There is potential for in-combination effects from three plans: Meath Council Development Plan 2021-2027 (Meath County Council 2021), Fingal County Development Plan 2023-2029 (Fingal County Council 2023) and Dublin City Development Plan 2022-2028 (Dublin City Council 2022).

There is potential for in-combination effects from 41 projects: Metrolink (314724), Shellybanks to Belcamp 220 kV Cable Project, NISA Connection, Finglas to Belcamp 220kV diversion, Greater Dublin Drainage Project (312131), Kilbride Metropolitan Park development (21249 and 21338), Battery Storage Facility at Woodlands Substation (22837 and 23136), Industrial/Office Development at the M3 Park and Ride (23424), Commercial Development at the M3 Park and Ride (2360065), Housing Development at the M3 Park and Ride (2360281 and 2360290), Ballymaglassan Stud development (23880), Belcamp Access development (3041/22), North Apron in Dublin Airport development (F20A/0550 and F23A/0132, Dublin Port to Dublin Airport Fuel Line development (F22A/0682), Belcamp Substation development (F23A/0040), Ryanair Hangar development (F23A/0245), AUL Football Pitch development (F23A/0465), Keelings Warehouse development (FW21A/0187 and FW23A/0031), Hollystown GAA Ground development (FW22A/0098), Keelings Temperature-controlled Warehouse development (FW22A/0136 and FW23A/0161), Nexus Distribution Park development (FW22A/0167), Keelings Food processing Warehouse development (FW20A/0202 and FW22A/0179), Irishtown Solar Farm development (FW22A/0201), Hoollywoodrath House housing development (FW23A/0036), Cherryhound Logistics/Warehouse Park development (FW23A/0191), TII – Dart+West (314232), NTA – BusConnects - Swords to City Centre Core Bus Corridor Scheme (317121), Gannon Properties - Residential development at Belcamp Hall, Malahide Road, Dublin 17 (312060 / F21A/0401), Gerard Gannon Properties (314169 / F22A/0136), Enginenode Limited (308130), Montague Ventures Limited (309833 / FW21A/0003), Glenveagh Homes Limited (312271), Kilshane Energy Ltd. (314894), Genvest ULC. (F21A/0147 / F23A/0006), Mayne Stability Limited (F21A/0681 /3041/22), ESB Engineering & Major Projects (FW19A/0177), Clarke Family Partnership (F18A/0306), Earlstand Corporation Unlimited Company (FW22A/0156), Clondev Properties Limited (F22A/0687), The Electricity Supply Board (ESB) (4367/19) and South Meath Solar Farm Limited (RA170873 / 23787).

Seven of the 41 planning applications had Natura Impact Statements produced for LSEs regarding pollution, while one of these determined LSEs from both pollution and disturbance. As a result, there is potential for in-combination effects in respect of both pollution and disturbance during the Construction Phase. AA Screening and (where required) AA is a statutory requirement for all developments, so whilst not available on the respective planning portals, these assessments must have already been carried out, or will be carried out, 21 of the plans and projects listed above had no AASR or NIS available at the time of writing so on a precautionary basis the assessment found there was potential for in-combination effects from pollution, disturbance and mortality in functionally linked habitat. With the implementation of mitigation measures, either from the plans or projects or as detailed in Section 6 no in-combination effects between these plans/projects and the Proposed Development were identified as there will be no potential linkages from the Proposed Development to other impacts that could arise from other plan/projects.

8. Conclusion

This NIS examined the implications of the Proposed Development, alone or in combination with other plans or projects, on the integrity of the following European sites in view of these sites' conservation objectives: Malahide Estuary SAC , Baldoyle Bay SAC, Malahide Estuary SPA, Baldoyle Bay SPA, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, North-West Irish Sea SPA, Rogerstown Estuary SPA, Ireland's Eye SPA, Lambay Island SPA, Skerries Islands SPA, River Nanny Estuary and Shore SPA, Boyne Estuary SPA, and Dundalk Bay SPA. The NIS details mitigation measures which have been prescribed to ensure the Proposed Development will not result in adverse effects on the integrity of these European sites, either alone or in-combination with other plans or projects.

Based on the best available scientific information and professional judgement, it is considered that with the mitigation measures detailed above, there will be no adverse effects on the integrity of those European sites, alone or in-combination with other plans or projects in light of those European sites' conservation objectives. The NIS contains information which An Bord Pleanála (the competent authority), may consider in making its own complete, precise and definitive findings and conclusions, and upon which it is capable of determining that all reasonable scientific doubt has been removed as to the effects of the Proposed Development, alone or in-combination with any other plan or project, on the integrity of the relevant European sites.

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Appendix A. Photographs

Table 9.1: Photographs showing examples of agricultural fields in which wintering QI bird species were found adjacent to the Proposed Development

Photograph 1: wintering golden plover and black-headed gull recorded within arable stubble field during December surveys.

Photograph 2: field which hosted wintering lapwing, which were recorded within improved agricultural grassland during December surveys.

Photograph 3: A Photograph of a field which hosted wintering birds during surveys (note photograph taken during summer habitat surveys).

Photograph 4: A Photograph of a field which hosted wintering birds during surveys (note photograph taken during summer habitat surveys).

Appendix B. WFD Waterbodies in Vicinity of the Proposed Development

Table 9.2: WFD waterbodies in the vicinity of the Proposed Development. Rivers are listed west to east as the cable route encounters them.

Waterbody name	No. river interactions[6] and their locations according to the EPA.	Site visit assessment	No. river interactions after the site visit.	WFD status 2016-2021	Risk rating
TOLKA_020 (IE_EA_ 09T010600)	2 crossings: WB04: O 01119 43261 WB05: O 01655 43968	WB04 At the cable crossing point north of where it is culverted under the Dunboyne bypass the river is 2 m wide, 15 cm deep, slow flowing. 10% run, 65% glide, 25% pool. 60% silt, 20% sand, 5% gravel, 15% overlying silt, >75% shading. Incomplete vegetated banks, 2.5m high, ivy, hearts tongue fern, cleavers. WB05 This river is crossed where the cable is off-road north of the Dunboyne bypass. At this location the river is 4m wide, 50cm deep, and slow flowing. The water was laden with sediment most likely due to poaching on the east bank, the substrate was assessed to be 50% silt, 5% sand, 10% gravel, 10% pebble, 5% cobble, 5% artificial, 15% overlying silt. Incomplete vegetated banks, 2 m high, undercutting present, no erosion seen, tree roots visible.	2 crossings	Moderate	At risk
	Additional adjacent river WB01: N 94742 47221 (closest to route)	WB01 Downstream section is a ditch which runs to the left of the road. Associated upstream ditch across the road. Overdeepened, approx. 30 cm wide and 5 cm deep. Likely ephemeral. No outfall seen. No fish likely. No white clawed cray fish likely. Upstream section more ditch like than downstream and less likely to host fish. No spawning gravels.	1 adjacent source.		
DUNBOYNE STREAM_010 (IE_EA_ 09D040500)	2 crossings: WB02: N 94483 46404 WB03: O 00537 42674	WB02 Watercourse width about 1.5 m overall with mixed flows and substrates and depths. Highly polluted. Mostly shaded over length and no macrophytes seen. Potential for invertebrates and WCC. Otter possible but unlikely due to pollution. Culvert/bridge apron unpassable for all fish. WB03 The river is culverted under a roundabout where the cable is located. Where the river is culverted under the road the river is 3m wide, 0.5m deep.	2 crossings	Poor	At risk
PINKEEN_010 (IE_EA_ 09P020500)	1 crossing: WB07: O 04094 44965	WB07 Viewed from fields both north and south of crossing point. Flowing south of the crossing point, 30 cm water depth, 2.5 m bank height, 3 m channel width, 2.5 m average wet width. Predominantly silt substrate composition, 50% silt, 5%	1 crossing	Moderate	At risk

[6] River interactions means points where the cable transects a watercourse or where the cable passes in close proximity (<5m) from a watercourse.

Waterbody name	No. river interactions[6] and their locations according to the EPA.	Site visit assessment	No. river interactions after the site visit.	WFD status 2016-2021	Risk rating
		sand, 10% gravel, 10% pebble, 10% cobble, 5% artificial, 10% overlying silt. No turbidity, mainly glide with 30% run, 5% riffle, 40% glide, 25% pool. >75% shaded by trees including conifer plantation, scrub and herbaceous vegetation with some aquatic vegetation present. Slight undercutting present, no erosion seen, tree and ivy roots visible. Droppings, likely otter spraint, found on boulder within water so likely using this watercourse.			
	1 tributary source adjacent to cable: WB06: O 03952 45039	WB06 Viewed from the field to the north of the watercourse. View was obstructed by scrub. 25 cm water depth, 2 m bank height, 2-5 m channel width with an average wet width of 1.7 m. No turbidity, 15% run, 65% glide, 20% pool. Predominantly silt, 55% silt, 5% sand, 5% gravel, 20% pebble, 5% cobble, 5% boulder, 5% overlying silt. 50-75% shaded by trees scrub and herbaceous vegetation with occasional open patches. Minimal undercutting present, no erosion seen, tree and ivy roots visible.	1 adjacent source.		
WARD_020 (IE_EA_ 08W010070)	1 tributary source adjacent to cable: WB08: O 05260 45264	WB08 At this location the tributary was a drainage ditch which begins adjacent to the road in which the cable is to be. It was 1 m wide, 15 cm deep, overgrown with grasses and scrub along the eastern field boundary. However, where it is mapped to flow east into the Ward River network there is a road for Belgree Court which blocks the hydrological link as there is no culvert to connect the drainage ditch to the watercourse. As such there is no interaction with the watercourse here.	No interaction in-road crossing.	Moderate	At risk
	3 crossings: WB12: O 07317 44650 WB13: O 07378 44541 WB14: O 07489 44351	WB12 The river runs adjacent to the cable for 170 m and is then crossed where the cable route is in the Kilbride Road. Upstream of this road the river runs adjacent to the road as a field drainage ditch which was 1m wide, 10cm deep and heavily vegetated. It is then culverted under the road. Downstream of the road it becomes 2-3 m wide, 10–30 cm deep with moderate flow. 50% silt, 10% sand, 5% pebble and 25% overlying silt. 25% glide and 75% pool. Vegetated banks which are 2m high and providing 75% shading of the watercourse. Willow, hawthorn, beech, ash, ivy, brambles, nettle, doc, herb Robert, cow parsley and hearts tongue fern. WB13 The river is crossed again where the cable route is in the Kilbride Road. Upstream of the road the river is a drainage ditch which it ranges from ponded to dry in sections. The ponded sections are 10cm deep and contained duck weed, nettle, water cress and greater willow herb. It is then culverted under the road where is widens into a river. Downstream of the road it is 2-3 m wide, 30-40 cm deep and slow flowing. Banks were 4 m high and vegetated with bramble, blackthorn, hawthorn, ivy and rose.	3 crossings.		

Waterbody name	No. river interactions[6] and their locations according to the EPA.	Site visit assessment	No. river interactions after the site visit.	WFD status 2016-2021	Risk rating
		WB14 At this location the tributary was not a river but instead a dry drainage ditch which would only potentially be hydrologically linked to the main stream into the east in periods of heavy rain.			
WARD_010 (IE_EA_ 08W010050)	3 mapped crossings: WB09: O 05634 45422 WB10: O 05654 45457 WB11: O 06599 45597	WB09 This crossing could not be assessed upstream as it flowed behind private residences and was extensively culverted under the road. It connects to the WB10 in this culvert and so downstream this river is assessed as part of WB10. WB10 The river is crossed where the cable is off-road north of the Priest Town Crossroads within a woodland. At this point the river is 3 m wide 25 cm deep, slow flow, 30% run, 25% riffle, 40% glide, 5% pool. 25% silt, 5% sand, 15% gravel, 25% pebble, 15% cobble, 5% artificial with 10% overlying silt. Vegetated banks 5m high with >75% shading from the woodland either side: sycamore, ash, hawthorn, ivy, bramble, hearts tongue fern, nettle, cleavers. Aquatic vegetation watercress, greater willow herb. WB11 The river is crossed where the cable is off-road west of the Kilbride Petrol Station. At this point the river is 2 m wide, 30 cm deep, moderate flow. 70% silt/sand, 30% cobble with 15% overlying silt. 10% run 5% riffle, 45% glide, 40% pool. Heavily vegetated banks 2 m high: Ash, rose, bramble, ivy, willow, hawthorn. Aquatic vegetation water mint, meadow sweet and water cress.	2 actual crossings.	Poor	At risk
WARD_030 (IE_EA_ 08W010300)	7 tributary sources adjacent to cable: WB15: O 09528 44520 WB16: O 10245 45153 WB17: O 10370 45217 WB18: O 10840 45522	WB15 At this location the cable route is partially off road and partially in the R121 road. The river is mapped to be adjacent to the cable route. However, site visits found no river at this location and instead a wet drainage ditch, overgrown with very little water. It was culverted under the road and so is considered a crossing. Further south the drainage ditch deepens with 2.5 m high banks but very shallow water. As such there is only an interaction in periods of heavy rain. WB16 At this location the cable route is in the R121 road. The river is mapped to run along the field to the northeast of the roundabout. There was a drainage ditch found 150 m north of the cable route in the mapped location, however, no river or drainage ditch was found directly adjacent to the route. As such there is no interaction with the watercourse here. WB17	4 crossings.	Moderate	At risk

Waterbody name	No. river interactions[6] and their locations according to the EPA.	Site visit assessment	No. river interactions after the site visit.	WFD status 2016-2021	Risk rating
		At this location the cable route is in the R121 road. At this point the river is a drainage ditch culverted under the road running north into a larger watercourse in the Ward River network. The drainage ditch was 50 cm wide and 5 cm deep. The banks were 1 m high and lined on one side with a managed hawthorn hedgerow and a grassy road verge on the other side. Although the river is mapped to be adjacent to the road, our site visit found the river to be culverted under the road from a drainage ditch to the south. As such this is considered a crossing of the river. WB18 At this location the cable is in the R121. At this location the river is a drainage ditch running south-east along a field boundary into the wider river network. The ditch was 2 m wide, 1m bank height, water depth 5-10 cm and slow flowing. Covered by vegetation, organic matter present, low ecological value. The ditch cuts under road and comes out other side and so is considered a crossing. Lined by sheet metal in parts.			
	3 crossings: WB19: O 11650 45815 WB20: O 13141 44724 WB21: O 14066 44606	WB19 At this location the cable route is in the R121. At this location the river crosses under the road flowing north-east. The river was 1 m wide, 15 cm deep and fast flowing. 15% silt, 10% gravel, 35% pebble, 15% cobble, 10% boulder, 5% artificial substances and 10% overlying silt. Upstream of the road there is dense overhanging brambles. Downstream the banks were 2 m high and were a mixture of grassy and scrubbed over with bramble. WB20 At this location the cable route is in the Kilreesk Lane. At this location the river crosses under the road flowing north. At this point the river is 2 m wide, 15 cm deep with moderate flow. Could not assess substrate, the channel was vegetated with water cress, willow herb sp., and nettles. The banks were 2.5 m high and grassy. WB21 At this location the cable route is in the R108. The river is culverted under the road flowing north. Downstream of the road it was 1m wide and slow flowing. The banks were 1-2 m high and had over hanging brambles on one bank and grassy vegetation on the other bank with willow herb sp., cleavers, thistle. The channel was vegetated with water cress. Upstream of the road could not be assessed as it was within the airport grounds.	3 crossings.		
SLUICE_010 (IE_EA_ 09S071100)	1 crossing: WB22: O 16415 44423	WB22 At this location the cable route is in the Naul Road. The river is mapped to cross the Naul Road and flow north along the Forrest Road. However, the site visit found the river was culverted 140 m north of the cable route and it was unclear if the river continued underground along the route where it was mapped. Where it emerged from the culvert the river was 2 m wide, 10 cm deep and slow flowing. It was 80% silt, 5% overlying silt	1 crossing.	Poor	At risk

Waterbody name	No. river interactions[6] and their locations according to the EPA.	Site visit assessment	No. river interactions after the site visit.	WFD status 2016-2021	Risk rating
		and 5% sand. 20% pool and 80% glide. It was 95% shaded with bramble, ash, hawthorn, winter heliotrope, nettle and male fern.			
MAYNE_010 (IE_EA_ 09M030500)	1 crossing: WB23: O 19003 42112	WB23 At this location the cable is off-road and travels through arable fields. The river is 1-2 m wide, 40 cm deep and fast flowing. 20% silt, 40% sand, 10% gravel, 15% pebble, 5% cobble and 10% overlying silt. 10% run, 65% glide and 25% pool. Banks were 2.5m high with interspersed grassy banks, nettle dock, cow parsley, and scrub banks with bramble and hawthorn.	1 crossing.	Poor	At risk

Appendix C. Figures

Figure 1

Legend

- Planning Application Boundary (PAB)
- Proposed Cable Route
- Special Protection Areas (SPA)

Stabannan-Braganstown SPA
Dundalk Bay SPA
Lough Sheelin SPA
North-West Irish Sea SPA
Boyne Estuary SPA
River Boyne and River Blackwater SPA
River Nanny Estuary and Shore SPA
Lough Derravaragh SPA
Rockabill SPA
Skerries Islands SPA
Planning Application Boundary
Rogerstown Estuary SPA
Lambay Island SPA
Malahide Estuary SPA
Baldoyle Bay SPA
Ireland's Eye SPA
North Bull Island SPA
Howth Head Coast SPA
South Dublin Bay and River Tolka Estuary SPA
Dalkey Islands SPA
Poulaphouca Reservoir SPA
Wicklow Mountains SPA
The Murrough SPA
Wicklow Head SPA

N

0 10 Kilometres

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	SMD	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

Drawing Title: Figure 1 - Special Protection Areas

Drawing Status	FINAL	
Scale @ A3	1:400,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0274	

Figure 2

Legend

- Planning Application Boundary (PAB)
- Proposed Cable Route
- Special Area of Conservation (SAC)

Dundalk Bay SAC
Clogher Head SAC
Boyne Coast and Estuary SAC
Killyconny Bog (Cloghbally) SAC
Moneybeg and Clareisland Bogs SAC
White Lough, Ben Loughs and Lough Doo SAC
River Boyne And River Blackwater SAC
Girley (Drewstown) Bog SAC
Lough Lene SAC
Lough Bane And Lough Glass SAC
Wooddown Bog SAC
Mount Hevey Bog SAC
Planning Application Boundary
Rogerstown Estuary SAC
Lambay Island SAC
Malahide Estuary SAC
Rockabill to Dalkey Island SAC
Baldoyle Bay SAC
Ireland's Eye SAC
North Dublin Bay SAC
Howth Head SAC
Rye Water Valley/Carton SAC
South Dublin Bay SAC
Codling Fault Zone SAC
The Long Derries, Edenderry SAC
Ballynafagh Bog SAC
Ballynafagh Lake SAC
Glenasmole Valley SAC
Knocksink Wood SAC
Ballyman Glen SAC
Bray Head SAC
Mouds Bog SAC
Pollardstown Fen SAC
Red Bog, Kildare SAC
Wicklow Mountains SAC
Glen of the Downs SAC
Carriggower Bog SAC
Mountmellick SAC
The Murrough Wetlands SAC
River Barrow And River Nore SAC
Slaney River Valley SAC
Vale of Clara (Rathdrum Wood) SAC
Wicklow Reef SAC
Deputy's Pass Nature Reserve SAC
Ballyprior Grassland SAC
Magherabeg Dunes SAC

N

0 10 Kilometres

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	SMD	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

Drawing Title: Figure 2 - Special Areas of Conservation

Drawing Status	FINAL	
Scale @ A3	1:400,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0275	

Figure 3

Legend

- Planning Application Boundary (PAB)
- Proposed Cable Route
- Temporary Construction Compound
- Substation Footprint
- Special Area of Conservation (SAC)
- Special Protection Areas (SPA)

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	BP	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

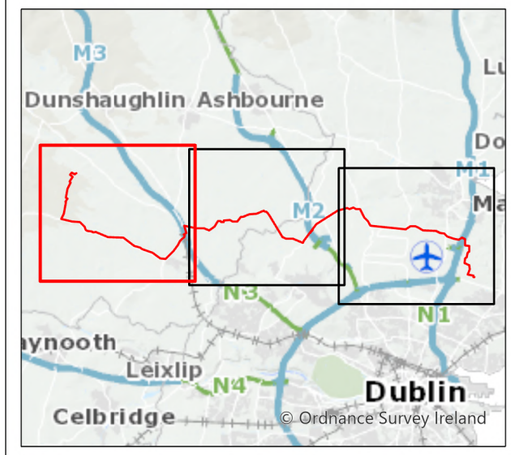
Drawing Title: Figure 3 – European Sites in Relation to the Proposed Development

Drawing Status	FINAL	
Scale @ A3	1:300,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0026	

Figure 4

Legend

- Proposed Cable Route
- Planning Application Boundary (PAB)
- HDD Compound
- Temporary Construction Compound
- Substation Footprint
- Silt Fencing Location
- Location of Screening (Point)
- Location of Screening (Line)
- River



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	SMD	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

Drawing Title: Figure 4 - Location of Screening for Wintering Birds and Silt Traps for Watercourses

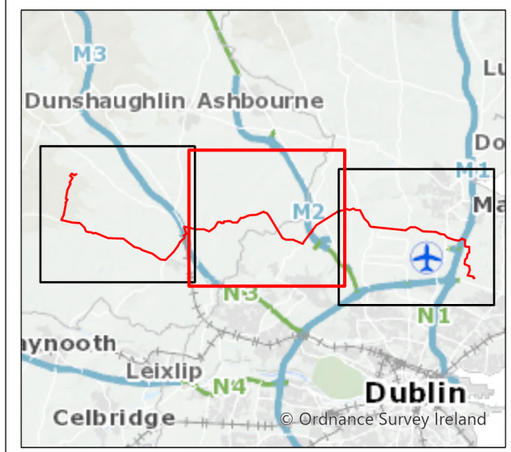
Drawing Status	FINAL	
Scale @ A3	1:30,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0443	

0 500 Metres

Figure 4

Legend

- Proposed Cable Route
- Planning Application Boundary (PAB)
- HDD Compound
- Temporary Construction Compound
- Silt Fencing Location
- Location of Screening (Point)
- Location of Screening (Line)
- River



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	SMD	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

Drawing Title: Figure 4 - Location of Screening for Wintering Birds and Silt Traps for Watercourses

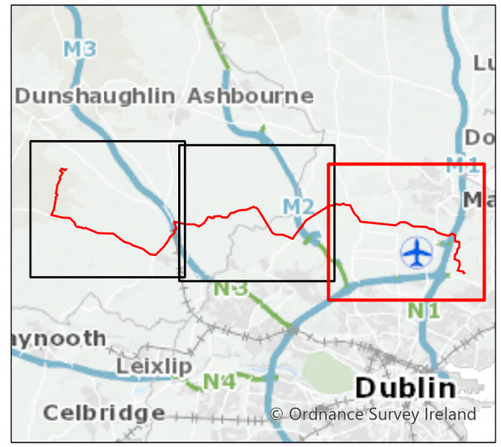
Drawing Status	FINAL	
Scale @ A3	1:30,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0444	

0 500 Metres

Figure 4

Legend

- Proposed Cable Route
- Planning Application Boundary (PAB)
- HDD Compound
- Temporary Construction Compound
- Substation Footprint
- Silt Fencing Location
- Location of Screening (Point)
- Location of Screening (Line)
- River



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	Mar 2024	Final	SMD	PB	PB	GS

Jacobs

Client: EirGrid

Project: East Meath - North Dublin Grid Upgrade

Drawing Title: Figure 4 - Location of Screening for Wintering Birds and Silt Traps for Watercourses

Drawing Status	FINAL	
Scale @ A3	1:30,000	DO NOT SCALE
OSI Sheet No.		
Jacobs No.	3321084AJ	
Drawing No.	321084AJ-JAC-ZZ-XX-DR-G-0445	

0 500 Metres

Appendix D. Qualifying Interest Foraging/ Roosting Distances

Table 9.3 contains the results of a desk-based study was carried out in November 2023 which researched the available literature, in particular Woodward et al.'s paper (2019) on the foraging/roosting distances for all Qualifying Interest species assessed. This information has been used to inform pathways for impacts upon the Special Protection Areas and the QIs, of which they have been designated for. Note: only available data has been tabulated and no information was found for some of the species and therefore, has not been added to the table below. It should be noted however, that as the source-pathway-receptor model was used to identify the ZoI all SPA species potentially impacted by the Proposed Development have been included in the assessment.

Table 9.3: Foraging/roosting distances of SCI bird species and their associated designated areas within the ZoI of the Proposed Development. (Woodward *et al.* 2019; Legagneux *et al.* 2009; Clausen *et al.* 2013; Birdlife International, 2013; SNH, 2016; Birdlife International).

Species	Max (km)	Mean Max (km)	Mean (km)	Category[7]	Confidence[8]	SPAs in ZoI with this species as SCI
Arctic tern	46	25.7±14.8	6.1±4.4	Direct	Good	South Dublin Bay and River Tolka Estuary SPA North-West Irish Sea SPA Dalkey Islands SPA Rockabill SPA
Black-headed gull	18.5	18.5	7	Direct	Uncertain	North Bull Island SPA South Dublin Bay and River Tolka Estuary SPA North-West Irish Sea SPA Dundalk Bay SPA
Common gull	50	50	25	Survey	Poor	North-West Irish Sea SPA Dundalk Bay SPA
Common tern	37	33.81	8.67	Direct	Good	South Dublin Bay and River Tolka Estuary SPA North-West Irish Sea SPA Dalkey Islands SPA Rockabill SPA

[7] Direct = Foraging ranges were obtained through direct attachment of devices such as VHF tags or GPS tags to individual seabirds, enabling precise measurement of seabird movements. This category also includes visual tracking of terns in boats equipped with a GPS device. Survey = Foraging ranges were estimated using visual surveys of birds at sea, based on the assumption that the concentrations of birds observed are breeding birds which are associated with the nearest colony.

[8] Assigned in Woodward et al.'s (2019) paper on foraging distances. Not available for all species

Species	Max (km)	Mean Max (km)	Mean (km)	Category[7]	Confidence[8]	SPAs in ZoI with this species as SCI
Cormorant	35	25.6±8.3	7.1±3.8	Direct	Moderate	Ireland's Eye SPA North-West Irish Sea SPA Skerries Islands SPA Lambay Island SPA
Great black-backed gull	73	73	16.7	Direct	Low	North-West Irish Sea SPA
Greylag goose	N/A	N/A	15-20	N/A	N/A	Rogerstown Estuary SPA Lambay Island SPA Dundalk Bay SPA
Guillemot	338	73.2±80.5	33.1±36.5	Direct	Highest	Ireland's Eye SPA. North-West Irish Sea SPA Lambay Island SPA
Herring gull	92	58.8±26.8	14.9±7.5	Direct	Good	Ireland's Eye SPA Lambay Island SPA North-West Irish Sea SPA Skerries Islands SPA River Nanny and Shoreline SPA Dundalk Bay SPA
Kittiwake	770	156.1±144.5	54.7±50.4	Direct	Good	Ireland's Eye SPA Howth Head Coast SPA North-West Irish Sea SPA
Lesser black back gull	533	127±109	43.3±18.4	Direct	Highest	Lambay Island SPA North-West Irish Sea SPA
Light-bellied Brent goose	94	53	N/A	N/A	N/A	Malahide Estuary SPA Baldoyle Bay SPA North Bull Island SPA South Dublin Bay and River Tolka Estuary SPA Rogerstown Estuary SPA Skerries Islands SPA Dundalk Bay SPA

Species	Max (km)	Mean Max (km)	Mean (km)	Category[7]	Confidence[8]	SPAs in ZoI with this species as SCI
Little tern	11	6.94	4.14	N/A	N/A	North-West Irish Sea SPA Boyne Estuary SPA
Manx shearwater	2890	1346.8±1018.7	136.1±88.7	Direct	Moderate	North-West Irish Sea SPA
Razorbill	313	88.7±75.9	61.3±33.4	Direct	Good	Ireland's Eye SPA North-West Irish Sea SPA Lambay Island SPA
Red-throated diver	9	9 11-13.5km recorded on Western Isles	4.5	Direct	Low	North-West Irish Sea SPA
Roseate tern	24 30	12.6±10.6 18.28	4.1±2.6 12.3	Direct	Moderate	South Dublin Bay and River Tolka Estuary SPA North-West Irish Sea SPA Dalkey Islands SPA Rockabill SPA
All other QI species did not have known foraging/roosting distances.	N/A	N/A	N/A	N/A	N/A	Malahide Estuary SPA Baldoyle Bay SPA South Dublin Bay and River Tolka Estuary SPA North Bull Island SPA Dundalk Bay SPA Rogerstown Estuary SPA Boyne Estuary SPA North-West Irish Sea SPA Lambay Island SPA River Nanny and Shoreline SPA Rockabill SPA Skerries Islands SPA

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Appendix E. Conservation Status of Qualifying Interests Exposed to Risk For Each of the European Sites Screened in for Appropriate Assessment

Table 9.4: Conservation Status and Key Conditions of Qualifying Interests of Malahide Estuary SAC (EEA 2013; NPWS 2013n)

QI	National Conservation Status	Site Level Status	Key conditions supporting favourable conservation status	Main pressures and threats	Mapping available for QI
Mudflats and sandflats not covered by seawater at low tide [1140]	Unfavourable-inadequate	Not available	Reduce/eliminate marine pollution from marine aquaculture. Other measures to reduce marine aquaculture infrastructures and operation	Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution. Agricultural activities generation marine pollution. Marine aquaculture generating marine pollution.	Yes, Ireland distribution presented on page 44 (NPWS, 2019b) Yes, site distribution presented on map 3 of conservation objectives (NPWS 2013a)
Salicornia and other annuals colonising mud and sand [1310]	Favourable	Favourable – potential to decline	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities.	Invasive species (other than those on the third schedule). Intensive grazing by livestock.	Yes, Ireland distribution presented on page 170 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2013a)
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Unfavourable-inadequate	Favourable	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities.	Intensive grazing or overgrazing by livestock. Sports, tourism and leisure activities. Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams). Agriculture activities not referred to above. Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures). Invasive species (other than species on the third schedule).	Yes, Ireland distribution presented on page 188 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2013a)

QI	National Conservation Status	Site Level Status	Key conditions supporting favourable conservation status	Main pressures and threats	Mapping available for QI
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Unfavourable-inadequate	Favourable	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities	Intensive grazing or overgrazing by livestock. Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams). Agriculture activities not referred to above. Extensive grazing or under grazing by livestock.	Yes, Ireland distribution presented on page 206 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2013a)

Table 9.5: Conservation status and key conditions of Qualifying Interests of Baldoyle Bay SAC potentially exposed to risk (EEA 2013; NPWS 2012b)

QI	National Conservation Status	Site Level Status	Key conditions supporting favourable conservation status	Main pressures and threats	Mapping available for QI
Mudflats and sandflats not covered by seawater at low tide [1140]	Unfavourable-inadequate	Not available	Reduce/eliminate marine pollution from marine aquaculture. Other measures to reduce marine aquaculture infrastructures and operation	Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution. Agricultural activities generation marine pollution. Marine aquaculture generating marine pollution.	Yes, Ireland distribution presented on page 44 (NPWS, 2019b) Yes, site distribution presented on map 2 of conservation objectives (NPWS 2012a)
Salicornia and other annuals colonising mud and sand [1310]	Favourable	Favourable – potential to decline	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities.	Invasive species (other than those on the third schedule). Intensive grazing by livestock.	Yes, Ireland distribution presented on page 170 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2012a)
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Unfavourable-inadequate	Favourable	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities.	Intensive grazing or overgrazing by livestock Sports, tourism and leisure activities Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams) Agriculture activities not referred to above	Yes, Ireland distribution presented on page 188 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2012a)

QI	National Conservation Status	Site Level Status	Key conditions supporting favourable conservation status	Main pressures and threats	Mapping available for QI
				Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures) Invasive species (other than species on the third schedule)	
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Unfavourable-inadequate	Favourable	Manage drainage and irrigation operations and infrastructures in agriculture. Habitat restoration of areas impacted by residential, commercial, industrial and recreational infrastructures, operations and activities	Intensive grazing or overgrazing by livestock Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams) Agriculture activities not referred to above Extensive grazing or under grazing by livestock.	Yes, Ireland distribution presented on page 206 (NPWS, 2019b) Yes, site distribution presented on map 5 of conservation objectives (NPWS 2012a)

Table 9.6: Conservation status and key conditions of Qualifying Interests of Malahide Estuary SPA potentially exposed to risk (EEA 2013; NPWS 2013i)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Great crested grebe	(B) short-term - stable (W) short-term - fluctuating	Favourable	Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Outdoor sports and leisure activities, recreational activities Pollution to surface waters Marine water pollution	No
Light-bellied Brent Goose	(W) short and long-term increasing	Favourable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms) Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas. Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	No

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Shelduck	(B) short-term increasing, long term unknown (W) long-term stable	Favorable	None available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines. Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	No
Pintail	(W) short-term fluctuating, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Marine and freshwater aquaculture Pollution to surface waters Marine water pollution and other forms of pollution Human induced changes in hydraulic conditions	No
Goldeneye	(W) short-term and long-term decreasing	Unfavourable	Changes in biotic conditions Pollution to surface waters Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Marine and Freshwater Aquaculture Marine water pollution and other forms of pollution	No
Red-breasted merganser	(B) short-term and long-term stable (W) short-term fluctuating, long-term decreasing	Favourable	Renewable abiotic energy use Marine and freshwater aquaculture Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution	No
Oystercatcher	(B) unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	No

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Golden Plover	(B) short and long- term decreasing (W) short-term decreasing, long-term unknown	Highly Unfavourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Marine water pollution	No
Grey Plover	(W) short-term decreasing, long-term unknown	Intermediate unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	No
Knot	(W) short-term increasing, long-term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	No
Dunlin	(B) short-term and long-term decreasing (W) short and long-term decreasing	Highly unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	No
Black-tailed godwit	(W) short-term and long-term increasing	Intermediate unfavourable	Marine and Freshwater Aquaculture Renewable abiotic energy use Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities	No

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Modification of cultivation practices	
Bar-tailed Godwit	(W) short-term increasing, long-term decreasing	Highly unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	No
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	No
Wetland & Waterbirds	N/A	N/A	N/A	N/A

Table 9.7: Conservation status and key conditions of Qualifying Interests of Baldoyle Bay SPA potentially exposed to risk (NPWS 2012c; EEA 2013)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Light-bellied Brent goose	(W) short and long-term increasing	Favorable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms) Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas.	Yes, on page 55 of the supporting document (NPWS 2012c).

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	
Shelduck	(B) short-term increasing, long term unknown (W) short-term fluctuating, long-term stable	Favorable	None available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines. Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	Yes, on page 58 of the supporting document (NPWS 2012c).
Ringed plover	(B) short-term stable, long-term unknown (W) short-term stable, long-term unknown	Intermediately unfavourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Renewable energy (windfarms) Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 56 of the supporting document (NPWS 2012c).
Golden plover	(B) short and long- term decreasing (W) short-term decreasing, long-term unknown	Unfavorable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Marine water pollution	Yes, on page 59 of the supporting document (NPWS 2012c).
Grey plover	(W) short-term decreasing, long-term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 60 of the supporting document (NPWS 2012c).

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Bar-tailed godwit	(W) short-term increasing, long-term decreasing	Highly unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 57 of the supporting document (NPWS 2012c).
Wetland & Waterbirds	N/A	N/A	N/A	N/A

Table 9.8: Conservation status and key conditions of Qualifying Interests of North-West Irish Sea SPA potentially exposed to risk (EEA 2013 & Gilbert *et al.*. 2021).

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Little gull	(W) short-term and long-term unknown	Not available	Wind, wave, and tidal power, including infrastructure.	Not available
Black-headed gull	(B) short-term and long-term increasing (W) short-term and long-term unknown	Not available	No available threats or pressures for this QI, likely similar to other gulls within this table.	Not available
Lesser black-back gull	(B) short-term and long-term increasing (W) short term and long-term unknown	Not available	Wind, wave, and tidal power, including infrastructure. Industrial or commercial activities and structures generating marine macro- and micro-particulate pollution (e.g., plastic bags, Styrofoam) Residential or recreational activities and structures generating marine macro- and micro-particulate pollution (e.g., plastic bags, Styrofoam) Other invasive alien species (other than species of Union concern)	Not available
Greater black-back gull	(B) short-term increasing, long-term decreasing	Not available	Residential or recreational activities and structures generating marine macro- and micro-particulate pollution (e.g., plastic bags, Styrofoam) Industrial or commercial activities and structures generating marine macro- and micro-particulate pollution (e.g. plastic bags, Styrofoam) Bycatch and incidental killing (due to fishing and hunting activities) Wind, wave, and tidal power, including infrastructure.	Not available

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species. Other invasive alien species (other than species of Union concern)	
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Not available	Wind, wave, and tidal power, including infrastructure. Residential or recreational activities and structures generating marine macro- and micro-particulate pollution (e.g., plastic bags, Styrofoam) Industrial or commercial activities and structures generating marine macro- and micro-particulate pollution (e.g., plastic bags, Styrofoam)	Not available
Common gull	(B) short-term increasing, long-term decreasing (W) short-term and long-term unknown	Not available	No available threats or pressures for this QI, likely similar to other gulls within this table.	Not available

Table 9.9: Conservation status and key conditions of Qualifying Interests of North Bull Island SPA potentially exposed to risk (EEA 2013; NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Light-bellied Brent goose	(W) short and long-term increasing	Favourable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms) Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas. Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	Yes, on page 89 of the supporting document (NPWS 2014f)
Shelduck	(B) short-term increasing, long-term unknown (W) short-term fluctuating, long-term stable	Intermediate unfavorable	None available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines. Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	Yes, on page 90 of the supporting document (NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Teal	(B) short-term stable, long-term decreasing (W) short-term stable, long-term unknown	Favourable	Renewable abiotic energy use Hunting and collection of wild animals Outdoor sports and leisure activities, recreational activities Pollution to surface waters Marine water pollution and other forms of pollution human induced changes in hydraulic conditions	Yes, on page 91 of the supporting document (NPWS 2014f)
Pintail	(W) short-term fluctuating, long-term unknown	Intermediate unfavourable	Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Marine and freshwater aquaculture Pollution to surface waters Marine water pollution and other forms of pollution Human induced changes in hydraulic conditions	Yes, on page 92 of the supporting document (NPWS 2014f)
Shoveler	(B) short-term and long-term increasing (W) short-term fluctuating, long-term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Pollution to surface waters Marine water pollution and other forms of pollution	Yes, on page 93 of the supporting document (NPWS 2014f)
Oystercatcher	(B) unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	Yes, on page 94 of the supporting document (NPWS 2014f)
Golden plover	(B) short and long- term decreasing (W) short-term decreasing, long term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Marine water pollution	Yes, on page 96 of the supporting document (NPWS 2014f)
Grey Plover	(W) short-term decreasing, long-term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture	Yes, on page 97 of the supporting document (NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	
Knot	(W) short-term increasing, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 98 of the supporting document (NPWS 2014f)
Dunlin	(B) short-term and long-term decreasing (W) short and long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 100 of the supporting document (NPWS 2014f)
Black-tailed godwit	(W) short-term and long-term increasing	Favourable	Marine and Freshwater Aquaculture Renewable abiotic energy use Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Modification of cultivation practices	Yes, on page 101 of the supporting document (NPWS 2014f)
Bar-tailed godwit	(W) short-term increasing, long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture	Yes, on page 102 of the supporting document (NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	
Curlew	(B) short-term and long-term decreasing (W) short-term and long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 103 of the supporting document (NPWS 2014f)
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 104 of the supporting document (NPWS 2014f)
Black-headed gull	(B) short-term and long-term increasing (W) short-term and long-term unknown	Unfavourable	Agricultural grazing practices Changes in abiotic conditions	Yes, on page 106 of the supporting document (NPWS 2014f)

Table 9.10: Conservation status and key conditions of Qualifying Interests of South Dublin Bay and River Tolka Estuary SPA potentially exposed to risk (EEA 2013; NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Light-bellied Brent goose	(W) short and long-term increasing	Favourable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms)	Yes, on page 89 of the supporting document (NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas. Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	
Oystercatcher	(B) unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	Yes, on page 94 of the supporting document (NPWS 2014f)
Ringed plover	(B) short-term stable, long-term unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Renewable energy (windfarms) Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 95 of the supporting document (NPWS 2014f)
Grey Plover	(W) short-term decreasing, long-term unknown	Unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 97 of the supporting document (NPWS 2014f)
Knot	(W) short-term increasing, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use	Yes, on page 98 of the supporting document (NPWS 2014f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	
Dunlin	(B) short-term and long-term decreasing (W) short and long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 100 of the supporting document (NPWS 2014f)
Bar-tailed godwit	(W) short-term increasing, long-term decreasing	Highly unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 102 of the supporting document (NPWS 2014f)
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 104 of the supporting document (NPWS 2014f)
Black-headed gull	(B) short-term and long-term increasing (W) short-term and long-term unknown	Unfavourable	Agricultural grazing practices Changes in abiotic conditions	Yes, on page 106 of the supporting document (NPWS 2014f)

Table 9.11: Conservation status and key conditions of Qualifying Interests of Rogerstown Estuary SPA (EEA 2013; NPWS 2013j)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Greylag goose	(B) short-term and long-term unknown (W) short-term decreasing, long-term unknown	Highly unfavourable	Modification of cultivation practices and other agricultural processes Renewable energy (windfarms) Hunting and collection of wild animals Utility and service lines Outdoor sports and leisure activities, recreational activities Other forms of pollution	Yes, on page 68 of the supporting document (NPWS 2013j)
Light-bellied Brent goose	(W) short and long-term increasing	Favourable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms) Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas. Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	Yes, on page 63 of the supporting document (NPWS 2013j)
Shelduck	(B) short-term increasing, long-term unknown (W) short-term fluctuating, long-term stable	Favourable	Non-available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines. Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	Yes, on page 64 of the supporting document (NPWS 2013j)
Shoveler	(B) short-term and long-term increasing (W) short-term fluctuating, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Pollution to surface waters Marine water pollution and other forms of pollution	Yes, on page 69 of the supporting document (NPWS 2013j)
Oystercatcher	(B) unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture	Yes, on page 65 of the supporting document (NPWS 2013j)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
	(W) short-term stable, long-term unknown		Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	
Ringed plover	(B) short-term stable, long-term unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Renewable energy (windfarms) Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 66 of the supporting document (NPWS 2013j)
Grey plover	(W) short-term decreasing, long-term unknown	Intermediate unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 70 of the supporting document (NPWS 2013j)
Knot	(W) short-term increasing, long-term unknown	Highly unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 67 of the supporting document (NPWS 2013j)
Dunlin	(B) short-term and long-term decreasing (W) short and long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use	Yes, on page 71 of the supporting document (NPWS 2013j)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	
Black-tailed godwit	(W) short-term and long-term increasing	Favourable	Marine and Freshwater Aquaculture Renewable abiotic energy use Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Modification of cultivation practices	Yes, on page 72 of the supporting document (NPWS 2013j)
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 73 of the supporting document (NPWS 2013j)

Table 9.12: Conservation status and key conditions of Qualifying Interests of Ireland's Eye SPA (EEA 2013)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Unknown	Marine water pollution Fishing and harvesting aquatic resources. Renewable abiotic energy use Other ecosystem modifications	No

Table 9.13: Conservation status and key conditions of Qualifying Interests of Lambay Island SPA (EEA 2013)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Greylag goose	(B) short-term and long-term unknown (W) short-term decreasing, long-term unknown	Unknown	Modification of cultivation practices and other agricultural processes Renewable energy (windfarms) Hunting and collection of wild animals Utility and service lines Outdoor sports and leisure activities, recreational activities Other forms of pollution	No
Lesser black-backed gull	(B) short-term and long-term increasing (W) short-term and long-term unknown	Unknown	Marine water pollution Fishing and harvesting aquatic resources. Renewable energy (windfarms) Other ecosystem modifications	No
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Unknown	Marine water pollution Fishing and harvesting aquatic resources. Renewable energy (windfarms) Other ecosystem modifications	No

Table 9.14: Conservation status and key conditions of Qualifying Interests of Skerries Islands SPA (EEA 2013; Gilbert *et al.* 2021)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Light-bellied Brent goose	(W) short and long-term increasing	Unknown	Sports, tourism, and leisure activities Transmission of electricity and communications (cables) Modification of coastline, estuary, and coastal conditions for development, use and protection of residential, commercial, industrial, and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures) Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary, and coastal conditions) Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species	No

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Unknown	Wind, wave, and tidal power, including infrastructure. Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g., plastic bags, Styrofoam) Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g., plastic bags, Styrofoam)	No

Table 9.15: Conservation status and key conditions of Qualifying Interests of River Nanny Estuary and Shore SPA (EEA 2013; Gilbert *et al*. 2021).

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Oystercatcher	(W) short and long-term decreasing (B) unknown insufficient or no data available	Favourable	Sports, tourism, and leisure activities. Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species. Other impacts from marine aquaculture, including infrastructure. Wind, wave, and tidal power, including infrastructure. Modification of coastline, estuary, and coastal conditions for development, use and protection of residential, commercial, industrial, and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures).	Yes, on page 57 of the supporting document (NPWS, 2012e)
Ringed plover	(B) short-term stable, long-term unknown (W) short-term stable, long-term unknown	Favourable	Sports, tourism, and leisure activities. Other impacts from marine aquaculture, including infrastructure. Wind, wave, and tidal power, including infrastructure. Modification of coastline, estuary, and coastal conditions for development, use and protection of residential, commercial, industrial, and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures). Sea-level and wave exposure changes due to climate change	Yes, on page 54 of the supporting document (NPWS, 2012e)
Golden plover	(B) short and long- term decreasing (W) short-term decreasing,	Highly Unfavourable	Hunting. Temperature changes (e.g., rise of temperature and extremes) due to climate change. Wind, wave, and tidal power, including infrastructure. Sports, tourism, and leisure activities.	Yes, on page 58 of the supporting document (NPWS, 2012e)

	long-term unknown		Modification of flooding regimes, flood protection for residential or recreational development. Intensive grazing or overgrazing by livestock. Conversion to forest from other land uses, or afforestation (excluding drainage). Problematic native species. Other invasive alien species (other than species of Union concern). Drainage for use as agricultural land. Conversion from one type of agricultural land use to another (excluding drainage and burning). Burning for agriculture. Wind, wave and tidal power, including infrastructure.	
Knot	(W) short-term increasing, long-term unknown	Favourable	Sports, tourism, and leisure activities. Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species. Other impacts from marine aquaculture, including infrastructure. Wind, wave, and tidal power, including infrastructure. Modification of coastline, estuary, and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defences or coastal protection works and infrastructures). Sea-level and wave exposure changes due to climate change.	Yes, on page 55 of the supporting document (NPWS, 2012e)
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Not Assessed	Wind, wave, and tidal power, including infrastructure. Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g., plastic bags, Styrofoam) Industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g., plastic bags, Styrofoam)	Yes, on page 59 of the supporting document (NPWS, 2012e)

Table 9.16: Conservation status and key conditions of Qualifying Interests of Boyne Estuary SPA potentially exposed to risk (EEA 2013; NPWS 2012f)20152fc)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Shelduck	(B) short-term increasing, long-term unknown (W) short-term fluctuating, long-term stable	Favourable	None available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines.	Yes, on page 63 of the supporting document (NPWS 2012f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	
Oystercatcher	(B) unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	Yes, on page 64 of the supporting document (NPWS 2012f)
Lapwing	(B) short-term and long-term decreasing (W) short-term and long-term decreasing	Unfavourable	Modification of cultivation practices Mining and quarrying Mowing / cutting of grassland Forest planting on open ground Fertilisation Fire and fire suppression Grazing Interspecific faunal relations invasive non-native species Changes in biotic conditions	Yes, on page 66 of the supporting document (NPWS 2012f)
Golden Plover	(B) short and long-term decreasing (W) Short term decreasing, long term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Marine water pollution	Yes, on page 59 of the supporting document (NPWS 2012f)
Grey plover	(W) short-term decreasing, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 65 of the supporting document (NPWS 2012f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Knot	(W) short-term increasing, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 60 of the supporting document (NPWS 2012f)
Black-tailed godwit	(W) short-term and long-term increasing	Favourable	Marine and Freshwater Aquaculture Renewable abiotic energy use Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Modification of cultivation practices	Yes, on page 61 of the supporting document (NPWS 2012f)
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Intermediate unfavourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 68 of the supporting document (NPWS 2012f)

Table 9.17: Conservation status and key conditions of Qualifying Interests of Dundalk Bay SPA (EEA 2013; NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
Great crested grebe	(B) short-term - stable	Moderately unfavourable	Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture	Yes, on page 88 of the supporting document (NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
	(W) short-term - fluctuating		Outdoor sports and leisure activities, recreational activities Pollution to surface waters Marine water pollution	
Light-bellied Brent Goose	(W) short and long-term increasing	Favourable	Sports, tourism, and leisure activities. Utility and service lines. Renewable energy (windfarms) Agricultural activities including modification to cultivation practices. Conversion of other land uses to housing, settlement, or recreational areas. Marine fish and shellfish harvesting causing reduction species/prey and disturbance of species. Modification of coastline, estuary, and coastal conditions for development. Pollution including marine pollution. Invasive non-native species.	Yes, on page 86 of the supporting document (NPWS 2011f)
Shelduck	(B) short-term increasing, long-term unknown (W) short-term fluctuating, long-term stable	Favourable	None available in the Article 12 reporting. General impacts discussed in the sites supporting document (NPWS 2012c) are: Disturbance from human activities on site. Sports, tourism, and leisure activities. Utility and service lines. Transport infrastructure, rail and roads. Other impacts from marine aquaculture, including infrastructure and port activities.	Yes, on page 98 of the supporting document (NPWS 2011f)
Teal	(B) short-term stable, long-term decreasing (W) short-term stable, long-term unknown	Favourable	Renewable abiotic energy use Hunting and collection of wild animals Outdoor sports and leisure activities, recreational activities Pollution to surface waters Marine water pollution and other forms of pollution human induced changes in hydraulic conditions	Yes, on page 99 of the supporting document (NPWS 2011f)
Mallard	(B) short-term and long-term stable (W) short-term fluctuating, long-term unknown	Favourable	Renewable abiotic energy use Hunting and collection of wild animals Outdoor sports and leisure activities, recreational activities Pollution to surface waters	Yes, on page 100 of the supporting document (NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Marine water pollution and other forms of pollution Human induced changes in hydraulic conditions	
Pintail	(W) short-term fluctuating, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Hunting and collection of wild animals Renewable abiotic energy use Marine and freshwater aquaculture Pollution to surface waters Marine water pollution and other forms of pollution Human induced changes in hydraulic conditions	Yes, on page 101 of the supporting document (NPWS 2011f)
Red-breasted merganser	(B) short-term and long-term stable (W) short-term fluctuating, long-term decreasing	Favourable	Renewable abiotic energy use Marine and freshwater aquaculture Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution	Yes, on page 87 of the supporting document (NPWS 2011f)
Oystercatcher	(B) unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Renewable energy (windfarms) Marine water pollution Human induced changes in hydraulic conditions	Yes, on page 89 of the supporting document (NPWS 2011f)
Ringed plover	(B) short-term stable, long-term unknown (W) short-term stable, long-term unknown	Favourable	Outdoor sports and leisure activities, recreational activities Marine and Freshwater Aquaculture Renewable energy (windfarms) Fishing and harvesting aquatic resources. Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 103 of the supporting document (NPWS 2011f)
Golden Plover	(B) short and long- term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Marine water pollution	Yes, on page 90 of the supporting document (NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
	(W) short-term decreasing, long-term unknown			
Grey Plover	(W) short-term decreasing, long-term unknown	Moderately unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 104 of the supporting document (NPWS 2011f)
Lapwing	(B) short-term and long-term decreasing (W) short-term and long-term decreasing	Intermediate unfavourable	Modification of cultivation practices Mining and quarrying Mowing / cutting of grassland Forest planting on open ground Fertilisation Fire and fire suppression Grazing Interspecific faunal relations invasive non-native species Changes in biotic conditions	Yes, on page 105 of the supporting document (NPWS 2011f)
Knot	(W) short-term increasing, long-term unknown	Intermediate unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	Yes, on page 91 of the supporting document (NPWS 2011f)
Dunlin	(B) short-term and long-term decreasing	Moderately unfavourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and freshwater aquaculture	Yes, on page 92 of the supporting document (NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
	(W) short and long-term decreasing		Renewable abiotic energy use Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	
Black-tailed godwit	(W) short-term and long-term increasing	Favourable	Marine and Freshwater Aquaculture Renewable abiotic energy use Fishing and harvesting aquatic resources. Outdoor sports and leisure activities, recreational activities Marine water pollution Human induced changes in hydraulic conditions Other ecosystem modifications Modification of cultivation practices	Yes, on page 93 of the supporting document (NPWS 2011f)
Bar-tailed Godwit	(W) short-term increasing, long-term decreasing	Favourable	Outdoor sports and leisure activities, recreational activities Fishing and harvesting aquatic resources. Marine and Freshwater Aquaculture Renewable energy (windfarms) Changes in abiotic conditions Marine water pollution human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 94 of the supporting document (NPWS 2011f)
Curlew	(B) short-term and long-term decreasing (W) short-term and long-term decreasing	Moderately unfavourable	Outdoor sports and leisure activities, recreational activities Renewable energy (windfarms) Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Human induced changes in hydraulic conditions Other ecosystem modifications	Yes, on page 95 of the supporting document (NPWS 2011f)
Redshank	(B) short-term and long-term decreasing (W) short-term stable, long-term increasing	Favourable	Outdoor sports and leisure activities, recreational activities Renewable abiotic energy use Marine and Freshwater Aquaculture Fishing and harvesting aquatic resources. Marine water pollution	Yes, on page 96 of the supporting document (NPWS 2011f)

QI	National Conservation Status	Site Level Status	Main pressures and threats	Mapping available for QI
			Human induced changes in hydraulic conditions Other ecosystem modifications Changes in abiotic conditions	
Common gull	(B) short-term increasing, long-term decreasing (W) short-term and long-term unknown	Favourable	No threats or pressures available for this QI	Yes, on page 106 of the supporting document (NPWS 2011f)
Herring gull	(B) short-term and long-term decreasing (W) short-term and long-term unknown	Moderately unfavourable	Wind, wave, and tidal power, including infrastructure	Yes, on page 107 of the supporting document (NPWS 2011f)