



Appropriate Assessment AA Screening Report

February 2023



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Acronyms and Abbreviations

AA	Appropriate Assessment
ABP	An Bord Pleanála
AC	Alternating Current
AEP	Annual Exceedance Probability
BNHR	Birds and Natural Habitats Regulations
CIÉ	Córas Iompair Éireann
CMU	Catchment Management Unit
DART	Dublin Area Rapid Transport (IE's Electrified Network)
DC	Direct Current
DEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EPA	Environmental Protection Agency
EU	European Union
GDA	Greater Dublin Area
GI	Ground Investigation
IAPS	Invasive Alien Plant Species
IROPI	Imperative Reasons of Overriding Public Interest
LOC	Location Cases
LSE	Likely Significant Effects
LVR	Low Voltage Room
NBDC	National Biodiversity Data Centre
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
OBJ	Object Controller Cabinet
OHLE	Overhead Line Electrical
OPW	Office of Public Works
QI	Qualifying Interests
REB	Relocatable Equipment Building
RBMP	River Basin Management Plan
SAC	Special Areas of Conservation

SER	Signalling Equipment Room
SCI	Special Conservation Interests
SHD	Strategic Housing Development
SID	Strategic Infrastructure Development
SPA	Special Protection Areas
SPT	Standard Penetration Testing
STC	Single Track Cantilever
TER	Telecom Equipment Room
TRL	Transport Research Laboratory
TTA JV	TYPSA, TUC RAIL and ATKINS Design Joint Venture
TTC	Two Track Cantilever
ZoI	Zone of Influence

1. Introduction

1.1. Purpose of the Report

The report to inform Screening for Appropriate Assessment (AA) – Stage 1 – for the DART+ South West Project (hereafter referred to as “the proposed Project”) is prepared by RPS and TTA-JV (Typsa, Tuc Rail and Atkins Joint Venture) on behalf of Iarnród Éireann (who is a wholly owned subsidiary of Córas Iompair Éireann (the applicant)). The screening report was prepared in Q1 of 2022.

The purpose of this report is to inform and assist the Competent Authority – An Bord Pleanála – to carry out the screening determination for Appropriate Assessment. This report is an examination of whether, in view of best scientific knowledge and applying the precautionary principle, the proposed Project, either individually or in combination with other plans or projects, is likely to have a significant effect on any European site(s). The assessment was carried out in accordance with the legislative context outlined in Section 1.2.

1.2. Legislative Context

1.2.1. Introduction

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as “The Habitats Directive”, and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, better known as “The Birds Directive”, provides legal protection for habitats and species of European importance. Ireland has given effect to the Habitats and Birds Directives through Part XAB of the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) as amended. Section 177U(2)(b) of the Planning and Development Act 2000 (as amended) provides that the Competent Authority (in this case An Bord Pleanála - for the Railway Order) shall carry out a screening for appropriate assessment under Section 177U(1) of the PDA 2000 before consent for proposed development can be given. Section 177U(8)(f) of the PDA 2000 then defines ‘consent for proposed development’ as inter alia including approval for development under Section 43 of the Transport (Railway Infrastructure) Act 2001.

Further, the European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the EIA Directive (EU Directive 2011/92/EU as amended by Directive 2014/52/EU) on the assessment of the effects of certain public private projects on the environment by amending the Transport (Railway Infrastructure) Act 2001 (“the 2001 Act”). An examination, analysis and evaluation is carried out by An Bord Pleanála in order to identify, describe and assess, in the light of each individual case, the direct and indirect significant effects of the proposed railway works, including significant effects derived from the vulnerability of the activity to risks of major accidents and disasters relevant to it, on: population and human health; biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives; land, soil, water, air and climate; material assets, cultural heritage and the landscape, and the interaction between the above factors. In carrying out an EIA in respect of an application made under Section 37 of the 2001 Act, An Bord Pleanála is required, where appropriate,

to co-ordinate the assessment with any assessment under the Habitats Directive or the Birds Directive.

1.2.2. European Sites

Articles 3 to 9 of the Habitats Directive provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of a European Union (EU)-wide network of sites known as Natura 2000 (hereafter referred to as 'European sites').

The requirements arising out of Article 6(3) of the Habitats Directive are transposed into Irish law by Part XAB of the Planning and Development Act 2000 (as amended and substituted) and by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) as amended (the Habitats Regulations), including Part 5 thereof.

The Natura 2000 network of sites comprises Special Areas of Conservation (SAC, including candidate SAC) designated under legislation transposing the obligations under Directive 92/43/EEC, and Special Protection Areas (SPAs, including proposed SPAs) classified under the Birds Directive (Directive 2009/147/EC on the conservation of wild birds) and designated under Irish legislation. SAC and SPA make up the pan-European network of Natura 2000 sites in Ireland and they are referred to as European sites.

1.2.3. Appropriate Assessment

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment (AA):

“Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In 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 [European] 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.”

1.3. Stages of Appropriate Assessment

Consideration of the above legislation is subject to a staged approach based on the four stages set out below. This document addresses Stage 1 only.

Stage 1: Screening / Test of Significance

This process identifies whether the proposed Project is directly connected to or necessary for the management of a European site(s) and identifies whether the development is likely to have significant impacts upon a European site(s) either alone or in combination with other projects or plans.

The output from this stage is a determination for each European site(s) of not significant, significant, potentially significant, or uncertain effects. The latter three determinations will cause the proposed Project to be taken forward to Stage 2 of the assessment process.

This report is the output of Stage 1 Screening of Appropriate Assessment for the proposed Project; prepared to assist the Competent Authority, An Bord Pleanála in discharging its legal duties with respect to the above legislation.

Stage 2: Appropriate Assessment

This stage considers the impact of the proposed Project on the integrity of a European site(s), either alone or in combination with other projects or plans, with respect to: (i) the site's conservation objectives; and (ii) the site's structure, function and its overall integrity. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts is undertaken.

The output from this stage is a Natura Impact Statement (NIS). This document must include sufficient information for the competent authority to carry out the appropriate assessment. If the assessment is negative, (i.e. adverse effects on the integrity of a site cannot be excluded), despite the application of measures to reduce or eliminate adverse effects, then the process must consider alternatives (Stage 3).

Stage 3: Assessment of Alternatives

This process examines alternative ways of achieving the objectives of the proposed Project that avoid adverse impacts on the integrity of the European site. This assessment may be carried out concurrently with Stage 2 in order to find the most appropriate solution. If no alternatives exist or all alternatives would result in negative impacts to the integrity of the European sites then the process either moves to Stage 4 or the proposed Project is abandoned.

Stage 4: Assessment where Adverse Impacts Remain

This stage includes the identification of compensatory measures where, in the context of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

Summary of Steps

As mentioned, Article 6(3) of the Habitats Directive provides for a two-stage process when it comes to a competent authority's consideration and evaluation of the implications of a proposed 'plan or project' for an area protected under the Habitats Directive.¹ The first stage involves a screening for appropriate assessment: a 'Stage 1 screening' and this document addresses Stage 1 only.

¹ The term 'European Site' is used and is taken from the Planning and Development Act 2000 (as amended).

The second stage is the ‘Stage 2 appropriate assessment’ and arises where, having ‘screened’ the application/development proposal, the competent authority determines that an appropriate assessment is required, in which case it must then carry out that appropriate assessment.

The two stages have been considered by the Superior Courts in Ireland in numerous cases; the following cases set out the key questions and tests to be applied by the competent authority at each stage:

- *Kelly (Ted) v. An Bord Pleanála* [2014] IEHC 400 (High Court, Finlay-Geoghegan J.);
- *Connelly v. An Bord Pleanála* [2018] IESC 31 (Supreme Court, Clarke C.J.);
- *Kelly (Eoin) v-An Bord Pleanála* [2019] IEHC 84 (High Court, Barniville, J.).

The 2014 decision of Finlay-Geoghegan J. in *Kelly (Ted) v An Bord Pleanála* was based on a detailed review of the provisions of the Habitats Directive and of the caselaw of the Court of Justice of the European Union (CJEU) and of the implementing provisions in Ireland.² The approach and analysis of the High Court was also approved by the Supreme Court in *Connelly* (2018).

Stage 1: Screening for Appropriate Assessment

The following principles apply to the Stage 1 screening for appropriate assessment. These are taken principally from the analysis of Barniville J. in *Kelly (Eoin) v An Bord Pleanála* (2019) which, of the three decisions referenced above, is the decision in which the earlier stage, that is the Stage 1 screening for appropriate assessment, was most in issue.

(i) Measures which are not permitted to be taken into account at the screening stage are those measures which are intended to avoid or reduce the harmful effects of the particular plan or project envisaged on the relevant European sites. (While there is no reference in Article 6(3) of the Habitats Directive to the concept of a ‘mitigation measure’, such measures are sometimes generally referred to as ‘mitigation measures’);

(ii) The threshold test is that an appropriate assessment will be required if the proposed development is ‘*likely to have a significant effect*’ on a European Site either individually or in combination with other plans or projects;

(iii) The triggering of the requirement to proceed to the Stage 2 appropriate assessment is not dependent on a determination that the proposed development will *definitely* have significant effects on a European Site; such a requirement (for the Stage 2 appropriate assessment) will arise if significant effects are a ‘*mere probability*’ (in this regard, Barniville J. noted that the CJEU decision in *Waddenzee*³ referred to ‘*a probability or a risk*’);

(iv) In light of the precautionary principle, such a ‘*risk*’ exists if ‘*it cannot be excluded on the basis of objective information*’ that the development ‘*will have significant effects*’ on a European Site. (underscoring added);

² Contained in Part XAB of the Planning and Development Act 2000.

³ *Waddenzee* (Case C-127/02) [2004] ECR I-07405

(v) In Ireland, Section 177U(4) of the Planning and Development Act 2000 (“PDA 2000”) employs the expression ‘*cannot be excluded*’. Under Section 177U(4), an appropriate assessment will be required if, on the basis of objective information, a ‘*significant effect*’, on a European Site ‘*cannot be excluded*’;

(vi) Under Section 177U(5) PDA 2000 an appropriate assessment will not be required if, on the basis of objective information, a ‘*significant effect*’ on a European Site, ‘*can be excluded*’;

(vii) In the case of ‘*doubt as to the absence of significant effects*’ an appropriate assessment must be carried out. The requirement to conduct appropriate assessment will arise where, at screening stage, it is ascertained that the particular development is ‘*capable of having any effect*’ (albeit this must be any ‘*significant effect*’) on the European site;

(viii) The ‘*possibility*’ of there being a ‘*significant effect*’ on the European Site will give rise to a requirement to carry out an appropriate assessment for the purposes of Article 6(3). There is no need to ‘*establish*’ such an effect and it is merely necessary to determine that there ‘*may be*’ such an effect;

(ix) In order to meet the threshold of likelihood of significant effect, the word ‘*likely*’ in Article 6(3) Habitats Directive and Section 177U(1) PDA 2000 should be read as being *less than the balance of probabilities*. The test does not require any ‘*hard and fast evidence that such a significant effect is likely*’. It merely has to be shown there is a ‘*possibility*’ that this significant effect is likely;

(x) The assessment of whether there is a risk of ‘*significant effect*’ on the European Site must be made in light, *inter alia*, of the ‘*characteristics and specific environmental conditions of the site concerned*’ by the relevant plan or project;

(xi) Plans or projects or applications for developments which have ‘*no appreciable effect*’ on the protected site are excluded from the requirement to proceed to appropriate assessment. If all applications for permission for proposed developments capable of having ‘*any effect whatsoever*’ on the protected site were to be caught by Article 6(3) (or Section 177U) ‘*activities on or near the site would risk being impossible by reason of legislative overkill.*’⁴;

(xii) While the threshold at the screening stage of Article 6(3) and Section 177U is ‘*very low*,⁵ nonetheless it is a threshold which must be met before it is necessary to proceed to the Stage 2 appropriate assessment.

While this report does not address Stage 2 Appropriate Assessment, the following principles apply to the Stage 2 process:

⁴ Per Barniville J. at para 68 of *Kelly (Eoin) v An Bord Pleanála* [2019] IEHC 84, referencing the Opinion of Advocate General Sharpston in *Sweetman & Others v An Bord Pleanála* (Case C-258/11) ECLI: EU:C:2012:743

⁵ Per Barniville J. at para 68 of *Kelly (Eoin) v An Bord Pleanála* [2019] IEHC 84, referencing (1) the Opinion of Advocate General Sharpston *Sweetman & Others v An Bord Pleanála* (Case C-258/11) ECLI: EU:C:2012:743 (para 49) and (2) the decision of Finlay-Geoghegan J. in *Kelly (Ted) v An Bord Pleanála* [2014] para 30.

Stage 2: Appropriate Assessment

The Stage 2 appropriate assessment is the consideration of whether there is an adverse effect on the integrity of (a) European Site(s). The threshold at the second stage is 'noticeably higher than that laid down at the first stage'⁶.

This stage assesses whether a plan or project, either alone or in combination with other plans and projects, would adversely affect the integrity of (a) European Site(s) in view of the Site's conservation objectives.

The determination which the competent authority makes on this issue in the Stage 2 appropriate assessment determines its jurisdiction to undertake the decision on the development consent. Unless the Stage 2 appropriate assessment determination is that the proposed development will not adversely affect the integrity of any relevant European Site, the competent authority may not take a decision giving consent for the proposed development.

An appropriate assessment carried out under the Irish legislation must meet the requirements of Article 6(3) of the Habitats Directive as set out and interpreted in the CJEU caselaw. Hence, an appropriate assessment conducted in Ireland, in order to reflect and be compliant with the findings of the CJEU caselaw on Article 6(3), must (in terms of approach and methodology) include an *examination, analysis, evaluation, findings, conclusions, and a final determination*.⁷

There are four distinct requirements which must be satisfied for a valid Stage 2 appropriate assessment decision, as a necessary pre-condition to a development consent where an appropriate assessment is required. After reviewing and approving the analysis of Finlay-Geoghegan J. in *Kelly (Ted) v An Bord Pleanála* (2014), Clarke CJ. (in *Connelly*) distilled these to precisely the following:

First, the appropriate assessment must identify, in the light of the best scientific knowledge in the field, all aspects of the development project which can, by itself or in combination with other plans or projects, affect the European site *in the light of its conservation objectives*.

Second, there must be complete, precise, and definitive **findings and conclusions** regarding the previously identified potential effects on any relevant European Site. As a matter of EU law, there is a separate obligation to make specific scientific findings which allow the subsequent conclusion to be reached.

Third, on the basis of those findings and conclusions, the competent authority must be able to determine that *no scientific doubt remains* as to the absence of the identified potential effects.

Fourth and finally, where the preceding requirements are satisfied, the competent authority may determine that the proposed development will not adversely affect the integrity of any relevant European site.

Clarke CJ emphasised in *Connelly* '...there seems, as a matter of EU law, to be a separate obligation to make specific scientific findings which allow that conclusion to be reached.' Therefore, the overall

⁶ *Sweetman & Others v An Bord Pleanála* (Case C-258/11) ECLI: EU:C:2012:743

⁷ CJEU in *Waddenzee* (Case C-127/02) [2004] ECR I-7405, *Commission v. Spain* (Case C-404/09) [2011] E.C.R. I-11853 and *Sweetman* (Case C-258/11)



conclusion which must be reached before the competent authority has jurisdiction to grant a development consent after an appropriate assessment is that all scientific doubt about the potential adverse effects on the sensitive area have been removed.

2. Description of the Proposed Development

The second of the infrastructural projects of the DART+ Programme to be delivered will be the DART+ South West Project, the subject of this report.

The DART+ South West Project will require modernisation and modifications to the existing railway line. There is a range of general linear works required along the full length of the proposed Project to enable the electrification of the line and the upgrade of the existing network.

This Project Description sets out the main elements of the proposed Project and has been used for the purposes of the Stage 1 – Screening.

2.1. DART+ South West Overview

The DART+ Programme is a key transportation improvement to form a high-quality and integrated public transport system. It will have benefits for the residents of the Greater Dublin Area and also those living in the other regions. It will assist in providing a sustainable transport system and a societal benefit for current and future generations.

The current electrified DART network is circa 50km long, extending from Malahide / Howth to Bray / Greystones and the DART+ Programme seeks to increase the high capacity and electrified network to 150km. The DART+ Programme is required to facilitate increased train capacity to meet current and future demands which will be achieved through a modernisation of the existing railway corridors. This modernisation includes the electrification, resignalling and certain interventions to remove constraints across the four main rail corridors within the Greater Dublin Area, as per below:

- **DART+ South West (this Project)** – circa 16km between Hazelhatch & Celbridge Station to Heuston Station and also circa 4km between Heuston Station to Glasnevin Junction, via the Phoenix Park Tunnel Branch Line.
- DART+ West – circa 40km from Maynooth & M3 Parkway Stations to the City Centre.
- DART+ Coastal North – circa 50km from Drogheda to the City Centre.
- DART+ Coastal South – circa 30km from Greystones to the City Centre.
- DART+ Fleet – purchase of new electrified fleet to serve new and existing routes.

The second of the infrastructural projects of the DART+ Programme to be delivered will be the DART+ South West Project. The DART+ South West Project will deliver an electrified network, with increased passenger capacity and enhanced train service from Hazelhatch & Celbridge Station to Heuston Station (circa 16km) on the Cork Mainline, and from Glasnevin Junction via Phoenix Park Tunnel Branch Line (circa 4km).

DART+ South West Project will complete four tracking between Park West & Cherry Orchard Station and Heuston Station, in addition to re-signalling and electrification of the entire route. The completion of the four tracking will remove a significant existing constraint on the line, which is currently limiting the number of train services that can operate on this route. DART+ South West will also deliver track improvements along the Phoenix Park Tunnel Branch Line, which will allow a greater number of trains to access the city centre.



Upon completion of the electrification of the DART+ South West route, new DART trains will be used on this railway corridor, similar to those currently operating on the Malahide / Howth to Bray /Greystones Line. DART+ South West will improve performance and increase train and passenger capacity on the route between Hazelhatch & Celbridge Station and Heuston Station and through the Phoenix Park Tunnel Branch Line to the City Centre, covering a distance of circa 20km.

Figure 2-1 provides a schematic layout of the proposed DART+ South West Project.

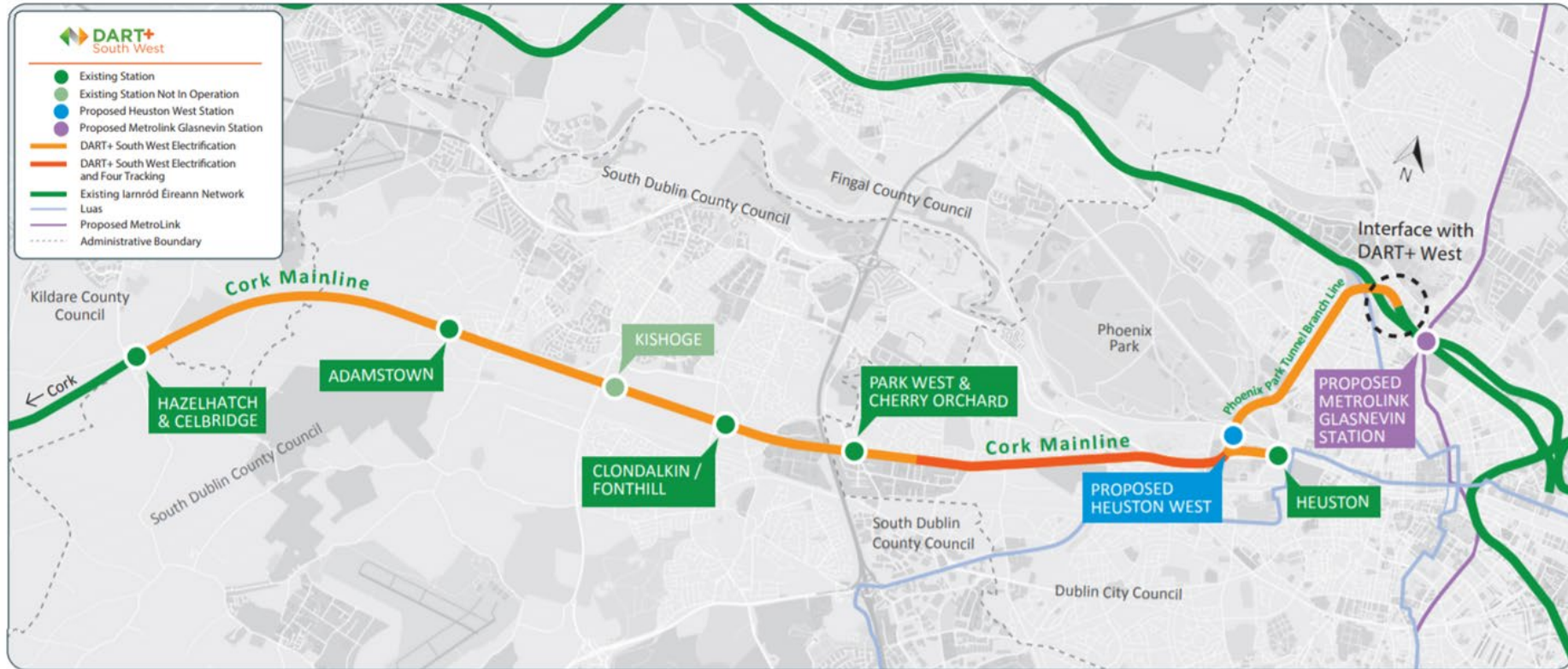


Figure 2-1 DART+ South West

2.2. Introduction to General Linear Works (End to End)

Given that much of the general linear works manifest along the full extent of the scheme, these elements are described first in this section to avoid the need for repetition. In addition, elements of the scheme which, although arising at discrete locations throughout the scheme, are proposed to be provided with common treatment are also described in this section (for example, additional signalling).

The elements of the proposed Project that are relevant to the entire length of the railway corridor are:

- Overhead electrification equipment which will be required along the full extent of the railway line from Hazelhatch & Celbridge Station to Heuston Station and through the Phoenix Park Tunnel Branch Line up to Glasnevin Junction, where it will link with the proposed DART+ West Project. The equipment will be similar to the overhead electrification equipment currently used on the existing DART network;
- Signalling upgrades and additional signalling infrastructure;
- Telecommunications infrastructure including buildings;
- Ancillary equipment cabins;
- Works to the Permanent Way (or track or railway corridor) including all ancillary installations such as rails, sleepers, ballast interfaces with existing utilities, boundary treatments, drainage works, vegetation management and other ancillary works;
- Construction of a new portal structure at the South Circular Road Junction; and
- Horizontal and vertical realignment of tracks to ensure that structural and passing clearances are achieved.

There are a number of discrete Project elements, which are required along the full length of the proposed Project, that are addressed in more detail in following sections, and which include the following:

- Diversions for utilities located along the route as part of the enabling works for the proposed Project;
- Six electrical substations will be required at intervals along the rail line to provide power to the network;
- Where existing bridges do not provide the necessary clearance for overhead electrification of the lines or lateral clearance for four-tracking, options have been considered on a case-by-case basis, these include:
 - Provision of specialist electrical solutions for the OHLE with reduced clearance;
 - Lowering the rail track under the bridge;
 - Modification of the existing structure;
 - Removal of the existing structure and provision of a replacement structure; or
 - A combination of the above.

- Retaining walls supporting widening of the rail corridor and replacement bridges;
- Overhead electrified line protection works at bridges; and
- Construction compounds.

2.3. Signalling, Electrical and Telecommunications (SET)

2.3.1. Signalling System

The signalling system is used to safely control and monitor train movement on the Irish Rail network. The system comprises a network of sensors, controls, signs and lights; it also includes localised control cabinets and cabins. In order to achieve the necessary capacity enhancements and performance required for the DART+ Programme, it will be necessary to upgrade the existing signalling system as well as replacing some of the legacy signalling system. This will include the provision of Signalling Equipment Buildings/Rooms (SEB/SER), and Location Cases (LOC) where required along the route in order to accommodate signalling equipment and associated power supplies and backup.

The proposed signalling system will incorporate similar components to those already in use on the DART line. Signal masts, signals gantries, and location cases (LOC's) are described and depicted in the images in Section 2.3.1.1 to Section 2.3.1.3 below.

2.3.1.1. Signals

Signals may be mounted on posts, masts or large structures, such as gantries and cantilevers. Gantries and cantilevers will generally be placed only where required, due to clearance issues. Figure 2-2 shows a typical signalling cantilever and trackside signal post.



Figure 2-2 Typical Existing Signalling Infrastructure

2.3.1.2. Location Cases (LOC)

In the railway system, the movement of the train is controlled by an interlocking system. Such an interlocking system consists of different components, including a central device (computer) that controls and senses the condition of important equipment such as switches, signals, track sections, etc. This equipment is collectively referred to as an object or rail side object. The equipment that handles the interface between the central device and the object is referred to as an object controller

(OBJ). A typical Object Controller Cabinet is shown in Figure 2-3. These typically measure 4m x 2m x 1m (length x width x height).



Figure 2-3 Typical Object Controller Cabinet (OBJ)

In addition, Location Cases (LOC) accommodate railway Low Voltage (LV) to provide the required power to the signalling and telecom systems. Location Cases are fed through a 650 V AC (Alternating Current) line. Inside the LOC there are 650 / 110 V AC step down transformers to feed the signalling equipment housed inside the LOC. A typical existing Location Case is shown in Figure 2-4.



Figure 2-4 Typical Location Cases

2.3.2. Electrical

It is a project requirement to provide an electrification system that is compatible with the existing DART system and other electrification projects associated with the DART+ Programme. Equally to the existing DART network, the new DART+ Programme will operate at 1,500V DC (Direct Current), with trains being powered via the Overhead Line Equipment OHLE.

The power supply is required along the full length of the proposed Project, from Celbridge & Hazelhatch Station to Heuston Station and through the Phoenix Park Tunnel up to the Glasnevin Junction where the line connects with the proposed DART+ West scheme.

The OHLE system will be supplied with electrical power from the ESB distribution network at regular intervals, at locations known as substations. These substations will receive power from the local power distribution network and transform this into the required 1,500V DC for distribution along the OHLE system. The specific voltage to be adopted will be determined at a later date in discussions with the ESB.

A 'DART System-Wide Power Study' identified that six substations will be required at various locations along the length of the DART+ South West Project to provide power to the network.

The proposed substation locations along the line, are proposed at:

- Islandbridge/ Heuston;
- Kylemore (Inchicore Depot);
- Park West;
- Kishoge;
- Adamstown;
- Hazelhatch.

The substations will comprise a secured, fenced compound surrounding a building which will house all the necessary electrical switching and feeding equipment. Welfare facilities are also required for Iarnród Éireann's maintenance teams. The characteristics of the substation compound and buildings for the DART+ South West Project are as follows:

- The footprint of a typical substation compound will generally be 50m (length) x 20m (wide) (i.e. approximately 1,000sq m). The substation dimensions will generally be 45m (length) x 10m (width) and 6m (height);
- The substation building will comprise of an ESB 38kV switchgear building and DART traction power substation building. The DART traction substation building typically contains a high voltage room, mess rooms and control room for telecoms; and
- They will have a similar appearance to a substation shown in Figure 2-5.



Figure 2-5 Sample Electrical Substation

2.3.3. Telecommunications System

The purpose of the Telecoms Equipment Room (TER) is to house servers, storage devices, switches, routers, cabling patch panels and any additional passive electronics to provide IT services (access control, CCTV, intrusion detection, patch panels, public address system, voice announcement system, distributed antenna systems) in the station and its area of influence. This is where the physical connection between the field equipment (signals, train detectors, etc.) and the electronic equipment takes place.

TER will typically be located within stations on Córas Iompair Éireann (CIÉ) owned land, for existing stations, a new TER will be considered when the existing TER lacks sufficient capacity for new equipment.

The following requirements apply to TER rooms / buildings:

- The Station TER shall be as per current IE specifications e.g. min 4m x 3m, false floor, air conditioned, dedicated power board, 24hr access, access monitoring, fire detection;
- The TER shall be built as close as possible to the existing TER to facilitate the migration of the existing infrastructure into the new facility; and
- Secured external light switch shall activate the internal equipment room lights.

2.4. Overhead Electrification Equipment (OHLE)

Overhead Line Equipment (OHLE) generally refers to the mechanical and electrical equipment items used to carry and deliver electrical power to the trains.

Electrical energy is supplied to the train through contact between the equipment mounted on the top of the train (pantograph) and an electrically live overhead cable. This cable is suspended from a system of steel masts. The live overhead cable is fed electrically from individual substations which are located along the route.

The existing rail corridor is not currently electrified and no OHLE infrastructure has been installed. OHLE will therefore be required. Options for OHLE are currently being considered and will be subject to more detailed assessment as the design progresses. However, the OHLE concept for DART+ Programme will comprise a pre-sagged simple (2-wire) auto-tensioned system, supported on galvanised steel support structures. While functionally similar to the OHLE on the existing DART network, modern design is being considered to maximise reliability and safety on the route.

While a standardised approach to electrification will be adopted, specific arrangements will also need to be considered at particular locations.

OHLE is formed by auto-tensioned section lengths by means of a fixed-point anchor at one end and balance weights or spring solutions at the opposite end ensuring constant tension regardless of the variation of temperature.

The mechanical tension can be achieved by two main solutions, springs or counterweights/balance weights. The type of OHLE mechanical compensation equipment shall be determined at a later stage of the design process when further information is available.

OHLE masts will carry support frameworks for the OHLE system over each of the electrified tracks. Vertical hangers will support and separate the upper and lower wires; additional feeder cables, insulators and earth wire.

OHLE foundations will be a critical and key element for the electrification works to be undertaken under the DART+ Programme. Three foundation options are under consideration (steel pile driven, concrete bored pile and concrete PAD). The type of foundation shall be determined at a later stage of the design process when further information is available.

2.4.1. OHLE Arrangement

The OHLE arrangement will vary at different sections along the route depending on the track configuration, clearance to structures and local site conditions.

Single Track Cantilevers (STC) are placed on either side of the line and are used to support the OHLE over one track. Figure 2-6 shows a typical arrangement.

Two Track Cantilevers (TTC) are generally only be placed on one side of the line, to support OHLE on the two tracks. TTC will be the predominant OHLE arrangement from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station.

Below are some examples of typical OHLE cross-sections that will be applied to the proposed Project.

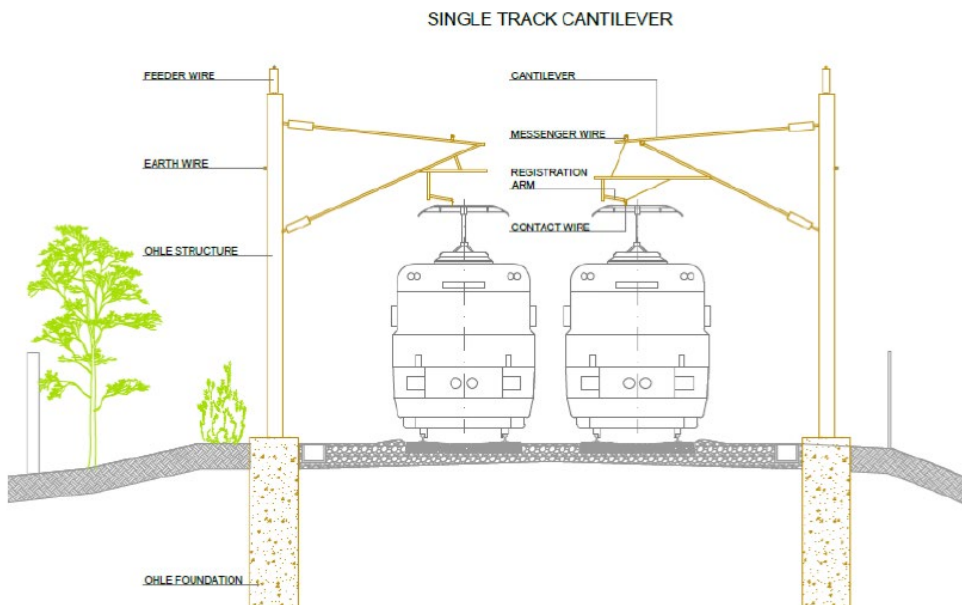


Figure 2-6 Single Track Cantilevers (STC) in 2-Track Section

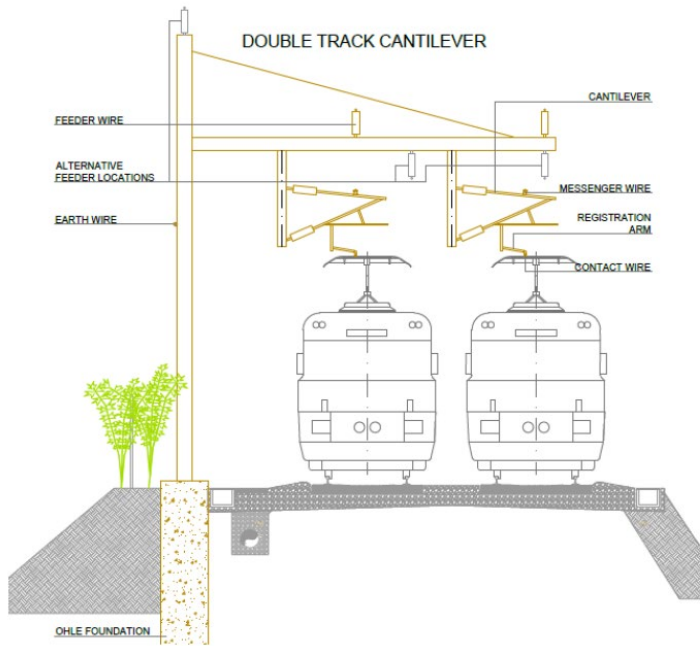


Figure 2-7 Twin Track Cantilevers (TTC) in 2-Track Section

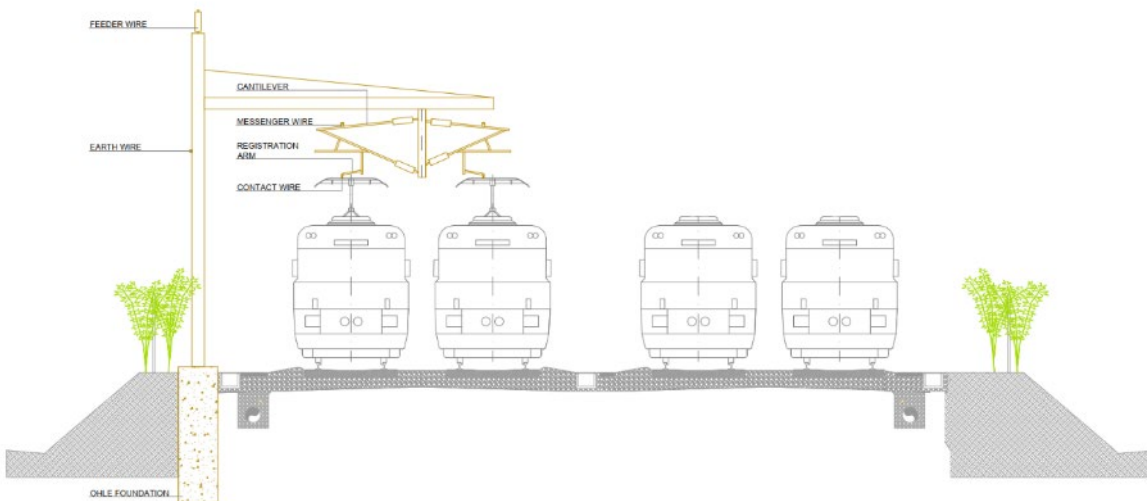


Figure 2-8 Typical OHLE TTC Arrangement in Four Track Open Route

The area through the stations will be provided with TTCs or Portals on the platform, see Figure 2-9.

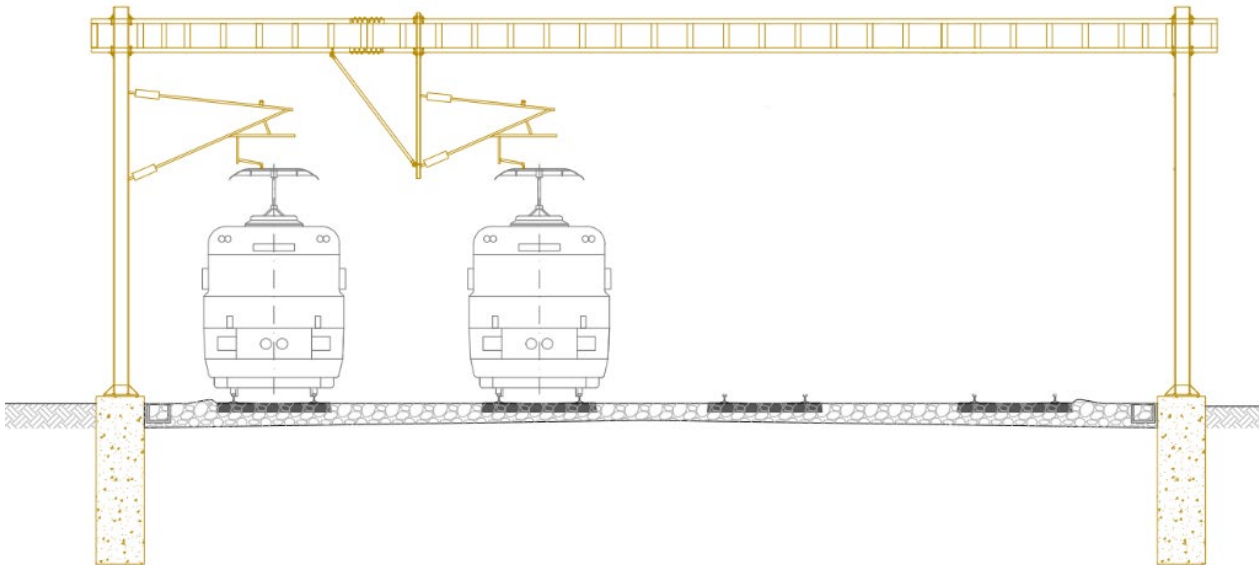


Figure 2-9 Typical OHLE Portal Arrangement

2.4.2. Clearance at Bridges

Wherever a bridge crosses over the railway, it is necessary to ensure that the OHLE passes safely below the bridge. Where existing bridges do not, provide the necessary clearance for overhead electrification of the lines or horizontal clearance for four tracking, a range of options have been considered on a case-by-case basis in the design development. The options considered in design development included the following (either standalone or in combination):

- Provision of specialist electrical solutions for the OHLE with reduced clearance;
- Lowering the rail track under the bridge;
- Modification of the existing structure; and
- Removal of the existing structure and provision of a replacement structure.

2.4.3. Bridge Parapets

The existing bridges along the route must comply with necessary safety requirements by providing suitable protection for the general public to prevent accidental contact with the OHLE. The existing bridges which are to be retained, have been assessed to determine if existing parapet heights comply with the safety requirements.

Reasonable steps to prevent people from accidentally or otherwise falling onto or touching the OHLE are required to:

- Prevent access.
- Prevent falling.
- Prevent contact / sparking.

Two main options to achieve the necessary level of protection are currently under consideration and involve increasing the heights of existing bridge parapets (by either wall or panels) or installing safety screens over the OHLE.

2.5. Track (Permanent Way)

The Permanent Way (PW) is a term used to describe the track or railway corridor and includes all ancillary installations such as rails, sleepers, ballast as well as lineside retaining walls, fencing and signage. The DART+ South West Project includes:

- Widening of the railway corridor and completion of four-tracking between Park West & Cherry Orchard Station and Heuston Station;
- Track lowering arising from electrical clearance requirements;
- New / additional crossovers (when a train switches from one track to another across points) to accommodate the new operational model;
- The sidings strategy at Inchicore Works, to allow continuity of the operations;
- Track geometry improvements (within the current corridor's limits) to remove existing speed restrictions; and
- Suitable and safe access for the rail maintenance teams is required to be provided.

A key aspect of the permanent way is where intervention is required, (e.g. at bridge locations), as it has knock on issues extending beyond the area of intervention of the bridge location itself, with implications for track alignment, road levels on adjoining roads, other bridges etc and hence the need for a solution to be considered more holistically. PW will also result in excavations associated with widening and track lowering generating materials which will require disposal. This may include contaminated material.

2.6. Ancillary Works

2.6.1. Attenuation

Elements of the DART+ South West Project which can modify the performance of the current drainage system include track lowering, an increase in the rail corridor width (resulting in a larger catchment area for rainfall), and the introduction of slab track along parts of the corridor.

A preliminary assessment of existing drainage system along the proposed Project route corridor and the attenuation requirements for the DART+ South West Project has been undertaken. Relevant considerations include:

- Existing and potential levels of run-off including the existing outfall to the River Liffey;
- The source and quantity of seepage into the Phoenix Park Tunnel; and
- The possibilities for the existing attenuation system (including pumping stations, pressure pipes, attenuation tanks and soakaways) to cope with the potential changes.

Stormwater attenuation tanks are currently recommended for the following locations: west of Inchicore Depot, east of Inchicore Depot and west of the proposed Heuston West Station. Where possible these will be accommodated along the railway corridor or on adjoining land owned by Córas Iompair Éireann. Attenuation tanks will also result in excavations associated with installation which will require disposal. This may include contaminated material.

2.6.2. Utility Diversions

The utilities that cross the existing rail corridor along the proposed Project route corridor are generally concentrated in road bridges and train stations. There are also several utilities that cross underneath the tracks or run parallel to the tracks, such as Irish Water pipes (including both water supply and wastewater) and ESB ducts.

Utilities will be constraints during both the design and construction phases. As such, their treatment in the temporary and permanent situations has been carefully considered during the development of options.

2.7. Retaining Walls

A variety of retaining wall types are required along the length of the rail corridor to accommodate track widening depending on the height of the retained soil, the soil conditions and the proximity of buildings to the railway corridor. These potential solutions are:

- Secant Piled Walls;
- Gabion Basket Walls; and
- King Post Retaining Walls.

2.8. Construction Compounds

Works on this linear Project will require construction compounds at specific locations. The sites will need to accommodate offices for the contractor and client teams, storage facilities, recycling facilities, parking for cars and plant and potentially fabrication areas. It is a prerequisite that the construction compounds are located close to and ideally with direct access to the respective work site. The sites must be fully serviced with electricity, water, sewerage and telecoms and must have good access to the public road network.

The compounds are required at specific construction sub-sites and also distributed along the scheme by geographical features. For example, compounds will be required at each of the bridge reconstruction locations, they will also be required for material processing and storage of construction components. The compounds will be used to support earthworks, enabling works, site clearance, utility diversions work, civil works, the demolition of bridges, OHLE, track installation, signalling and telecoms equipment and all ancillary works.

3. Methodology

3.1. Appropriate Assessment Guidance

EU and national guidance exist in relation to Member States' fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this AA has had regard to the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government (DEHLG, 2009);
- Communication from the Commission on the Precautionary Principle (EC, 2000);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (known as MN2000), Office for Official Publications of the European Communities, Luxembourg (EC, 2018);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);
- 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);
- Nature and biodiversity cases: Ruling of the European Court of Justice (EC, 2006);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013); and
- Article 6 of the Habitats Directive: Rulings of the European Court of Justice (EC, 2014).

There have been significant changes to AA practice since both the EC (2001) and the DEHLG (2010) guidance, arising from practice and rulings in European and Irish courts. These changes have been considered in the preparation of this report.

3.2. Screening Process (Stage 1)

The Screening for Appropriate Assessment (Stage 1) will incorporate the following steps:

- Describing the project or plan (see Section 2);
- Identifying the European sites potentially affected by the project or plan (see Section 4.1);
- Determining whether a project or plan is directly connected with or necessary to the management of any European sites (see Section 5.3);
- Identifying and assessing whether the project or plan is likely to have a significant effects on a European site(s), either alone or in-combination with other plans/projects (see Section 5.3); and

3.3. Ecological Data

3.3.1. Desk Study

A desk study was completed to assess the potential for all Qualifying Interests (QI) and Special Conservation Interests (SCI) of European sites to occur, given their ecological requirements identified by Balmer *et al.*, (2013) for SCI, and the National Parks and Wildlife Service (NPWS) for QI (NPWS, 2019a, b, c).

SCI Birds and mobile QI species can travel many kilometres from their core areas, and desktop surveys assessed the potential presence of such species beyond the European sites for which they are QI/SCI. Desktop studies had particular regard for the following sources:

- EPA online interactive mapping tool⁸;
- Information on ranges of mobile QI populations in Volume 1 of NPWS Status of EU Protected Habitats and Species in Ireland (NPWS, 2019a), and associated digital shapefiles obtained from the NPWS Research Branch;
- Information on ranges of mobile SCIs bird populations from Bird Atlas 2007–11 (Balmer *et al.*, 2013), excluding birds of prey whose ranges were determined with reference to Hardey *et al.*, (2013);
- Mapping of European site boundaries and Conservation Objectives for relevant sites in County Dublin and beyond, as relevant, available online from the NPWS;
- Distribution records for QI and SCI species of European sites held online by the National Biodiversity Data Centre (NBDC)⁹;
- Data including surface and ground water quality status, and river catchment boundaries available from the online database of the Environmental Protection Agency (EPA);
- National and regional surveys of semi-natural habitats, including grasslands (O'Neill *et al.*, 2013), saltmarsh (McCorry and Ryle, 2009; Devaney and Perrin, 2015), and woodland (Perrin *et al.*, 2008); and
- Boundaries for catchments with confirmed or potential freshwater pearl mussel (FWPM) *Margaritifera* populations in GIS format available online from the NPWS.

3.3.2. Field Study

This report was informed by a preliminary ecological walkover survey carried out over a three day period during August 2020 by RPS Ecologists; in part to inform this Stage 1 - Screening.

3.4. Relevant European Sites

The identification of relevant European sites to be included in this report was based on the identification of the Zone of Influence (Zoi) of the proposed Project. A source-pathway-receptor

⁸ Available online at <https://gis.epa.ie/EPAMaps/default>. Accessed February 2022.

⁹ Assessing records up to 10 years old (from date of search), for an area of 5 km from the Project site. Available online at: <https://maps.biodiversityireland.ie/Map>, Accessed February 2022.

model was used to identify likely impacts and effects and the likely significance of these impacts and effects.

3.4.1. Source-Pathway-Receptor Model

The likely effects of the proposed Project on European Sites have been assessed using a source-pathway-receptor model, where:

- A ‘source’ is defined as the individual element of the proposed Project that has the potential to impact on a European site, its qualifying features and its conservation objectives;
- A ‘pathway’ is defined as the means or route by which a source can affect the ecological receptor; and
- A ‘receptor’ is defined as the Special Conservation Interests (SCI) of SPAs or Qualifying Interests (QI) of SACs for which conservation objectives have been set for the European sites being screened.

A source-pathway-receptor model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The source-pathway-receptor model was used to identify European sites, and their QIs/SCIs, with potentially links to the proposed Project. These are termed as ‘relevant’ European sites/QIs/SCIs throughout this report.

3.4.2. Zone of Influence

The proximity of the Project to European sites, and more importantly QI/SCI of the European sites, is of importance when identifying potentially likely significant effects. This approach assesses all Q/SCIs of European sites with connectivity to the proposed Project (i.e. potential receptors), instead of only listing European sites within buffer zones (e.g. 15km). The initial Zone of Influence is therefore combined to capture 15km around the proposed Project, the Catchment Management Unit (CMU) as a whole, and the relevant groundwater bodies (see Section 3.4). This initial Zone of Influence is based upon the source-pathway-receptor analysis where appropriate. Further consideration in relation to hydrological linkages are discussed in Appendix A.

This follows Irish departmental guidance on AA:

“For projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects” (DEHLG, 2010; p.32, para 1).

With reference to guidance set out by the NRA (2009), the proposed Project has been evaluated based on an identified Zol with regard to the potential impact pathways to ecological feature (e.g. mobile and static). The Zol of the proposed Project on mobile species (e.g. birds, mammals, and fish), and static species and habitats (e.g. saltmarshes, woodlands, and flora) is considered differently. Mobile species have ‘range’ outside of the European site in which they are QI/SCI which varies considerably, from several metres (e.g. in the case of whorl snails *Vertigo* spp.), to hundreds of kilometres (in the case of migratory wetland birds). Whilst static species and habitats are generally considered to have Zol within close proximity of the proposed Project, they can be significantly

affected at considerable distances from an effect source; for example, where an aquatic QI habitat or plant is located many kilometres downstream from a pollution source.

Hydrological linkages between the proposed Project and European sites (and their QI/SCI) can occur over significant distances; however, any effect will be site specific depending on the receiving water environment and nature of the potential impact. As a precautionary measure, a reasonable worst-case Zol for water pollution from the proposed Project site is considered to be the surface water catchment. In this report, the surface water catchment is defined at the scale of Catchment Management Unit (CMU), as adopted in the River Basin Management Plan (RBMP) for Ireland 2018-2021 (DHPLG, 2018). The Zone of Influence then extends into the first coastal water body.

Hydrogeological linkages between the Project and European sites (and their QIs/SCIs) are highly variable based on the characteristics of the groundwater body, methodologies used, and the presence of groundwater dependant habitats and species. As a precautionary measure, a reasonable worst-case Zol for water pollution from the proposed Project site is considered to capture the entirety of each groundwater body the Project overlies.

3.4.3. Scoping of European Sites

Following the identification of European sites within the initial Zol, a secondary scoping was carried out before sites were taken forward to the assessment stage. Each of the sites were considered in detail to establish potential connectivity and pathways (if any) both directly and indirectly. Disturbance buffers, hydrological and hydrogeological linkages extending from the proposed Project were considered to determine if sources of impact/effect arising from the Project could result in likely significant effects on QI/SCI habitats and species from the European Sites identified.

Where it was deemed that there is potential for one QI or SCI habitat/species from a European site within the Zol to be impacted/affected, the entire European site is brought into the assessment stage.

3.4.4. Identification of Likely Significant Effects

The Commission's Notice (EC, 2018) advises that the appropriate assessment procedure under Article 6(3) is triggered, not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

A significant effect is triggered when:

- There is a probability or a risk of a plan or project having a significant effect on a European site;
- The plan is likely to undermine the site's conservation objectives;
- A significant effect cannot be excluded on the basis of objective information; and
- Measures to prevent or offset risk [mitigation measures] would be required.

3.5. Screening Process

The Screening for Appropriate Assessment (Stage 1) will incorporate the following steps:



- Describing the project or plan;
- Identifying the European sites potentially affected by the project or plan;
- Determining whether a project or plan is directly connected with or necessary to the conservation management of any European sites;
- Identifying and describing any potential effects of the project or plan on European sites, alone, in-combination and cumulatively with other plans/projects; and
- Assessing the likelihood of significant effects on European sites.

4. Receiving Environment

A detailed desk study has been completed to inform this AA screening. Where information is specific and relevant to the QI and SCI in this report, they have been considered in further detail in this section. The remaining desktop information, although supportive but non-specific and non-relevant to the QI and SCI in this report can be found in Appendix A. Relevant field study information has also been detailed in this section, where appropriate.

4.1. European Sites

A total of 13 SAC and 9 SPA were identified to have connectivity within the ZOI of the proposed Project and are detailed in Appendix A. Of these sites, 12 have been brought forward for further assessment (highlighted in grey- Appendix A) based on potential connectivity to the Project. These 12 sites are listed in Table 4.1 and are shown on Figure 4-1. They consist of 6 SAC and 6 SPA as follows:

- Baldoyle Bay SAC (000199);
- Ireland's Eye SAC (002193);
- South Dublin Bay SAC (000210);
- Howth Head SAC (000202);
- Rockabill to Dalkey Island SAC (003000);
- North Dublin Bay SAC (000206);
- South Dublin Bay and River Tolka Estuary SPA (004024);
- North Bull Island SPA (004006);
- Baldoyle Bay SPA (004016);
- Ireland's Eye SPA (004117);
- Howth Head Coast SPA (004113); and
- Dalkey Islands SPA (004172).

Table 4.1: Conservation Objectives of Relevant European Sites

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
<p>Baldoyle Bay SAC [000199], located approx. 10 km north east of the proposed Project, CO's-Specific Version 1.0 [19/11/12]. (NPWS, 2012a)</p>	<p>Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p>	<p>To maintain the favourable conservation condition</p>	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
<p>Ireland's Eye SAC [002193], located approx. 14.3km north east of the proposed Project, CO's- Specific Version 1.0 [27/01/17]. (NPWS, 2017b)</p>	<p>Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p>	<p>To maintain the favourable conservation condition</p>	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
<p>South Dublin Bay SAC [000210], located approx. 5.6km north east of the proposed Project, CO's-Specific Version 1.0 [22/08/13]. (NPWS, 2013a)</p>	<p>Mudflats and sandflats not covered by seawater at low tide [1140]</p>	<p>To maintain the favourable conservation condition</p>	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
Howth head SAC [000202] , located 12km east of the proposed Project, CO's- Specific Version 1.0 [06/12/16]. (NPWS, 2016)	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
European dry heaths [4030]	To maintain the favourable conservation condition		
Rockabill to Dalkey Island SAC [003000] , located approx. 12.3km east of the proposed Project, CO's Specific Version 1.0 [06/11/13]. (NPWS, 2013c)	Reefs [1170]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
Harbour porpoise <i>Phocoena phocoena</i> [1351]	To maintain the favourable conservation condition		
North Dublin Bay SAC [000206] , located 6.3km east of the proposed Project, CO's Specific Version	Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay.
Annual vegetation of drift lines [1210]	To restore the favourable conservation condition		
<i>Salicornia</i> and other annuals colonising mud and sand [1310]	To restore the favourable conservation condition		

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
1.0 [07/05/13]. (NPWS, 2013b)	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	To maintain the favourable conservation condition	Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
	Petalwort <i>Petalophyllum ralfsii</i> [1395]	To maintain the favourable conservation condition	
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	To maintain the favourable conservation condition	
	Embryonic shifting dunes [2110]	To restore the favourable conservation condition	
	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	To restore the favourable conservation condition	
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition	
	Humid dune slacks [2190]	To restore the favourable conservation condition	
South Dublin Bay and River Tolka Estuary SPA [004024] , located approx. 5.6km east of the proposed Project, CO's- Generic Version 7.0 [09/03/15] (NPWS, 2015a)	Light-bellied Goose <i>Branta bernicla hrota</i> [A046]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent. Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision with proposed overhead lines at the River
	Oystercatcher <i>Haematopus ostralegus</i> [A130]	To maintain the favourable conservation condition	
	Ringed Plover <i>Charadrius hiaticula</i> [A137]	To maintain the favourable conservation condition	
	Grey Plover <i>Pluvialis squatarola</i> [A141]	Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.	
	Knot <i>Calidris canutus</i> [A143]	To maintain the favourable conservation condition	
	Sanderling <i>Calidris alba</i> [A144]	To maintain the favourable conservation condition	

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
	Dunlin <i>Calidris alpina alpina</i> [A149]	To maintain the favourable conservation condition	Liffey crossing. No species preference analysis yet completed. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	To maintain the favourable conservation condition	
	Redshank <i>Tringa tetanus</i> [A162]	To maintain the favourable conservation condition	
	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	To maintain the favourable conservation condition	
	Roseate Tern <i>Sterna dougallii</i> [A192]	To maintain the favourable conservation condition	
	Common Tern <i>Sterna hirundo</i> [A193]	To maintain the favourable conservation condition	
	Arctic Tern <i>Sterna paradisaea</i> [A194]	To maintain the favourable conservation condition	
	Wetlands [A999]	To maintain the favourable conservation condition	
North Bull Island SPA [004006] , located approx. 6.3km east of the proposed Project, CO's- Generic Version 7.0 [09/03/15] (NPWS, 2015b)	Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent. Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional
	Shelduck <i>Tadorna tadorna</i> [A048]		
	Teal <i>Anas cracca</i> [A052]		
	Pintail <i>Anas acuta</i> [A054]		
	Shoveler <i>Anas clypeata</i> [A056]		
	Oystercatcher <i>Haematopus ostralegus</i> [A130]		
	Golden Plover <i>Pluvialis apricaria</i> [A140]		
	Grey Plover <i>Pluvialis squatarola</i> [A141]		
	Knot <i>Calidris canutus</i> [A143]		
	Sanderling <i>Calidris alba</i> [A144]		
Dunlin <i>Calidris alpina</i> [A149]			

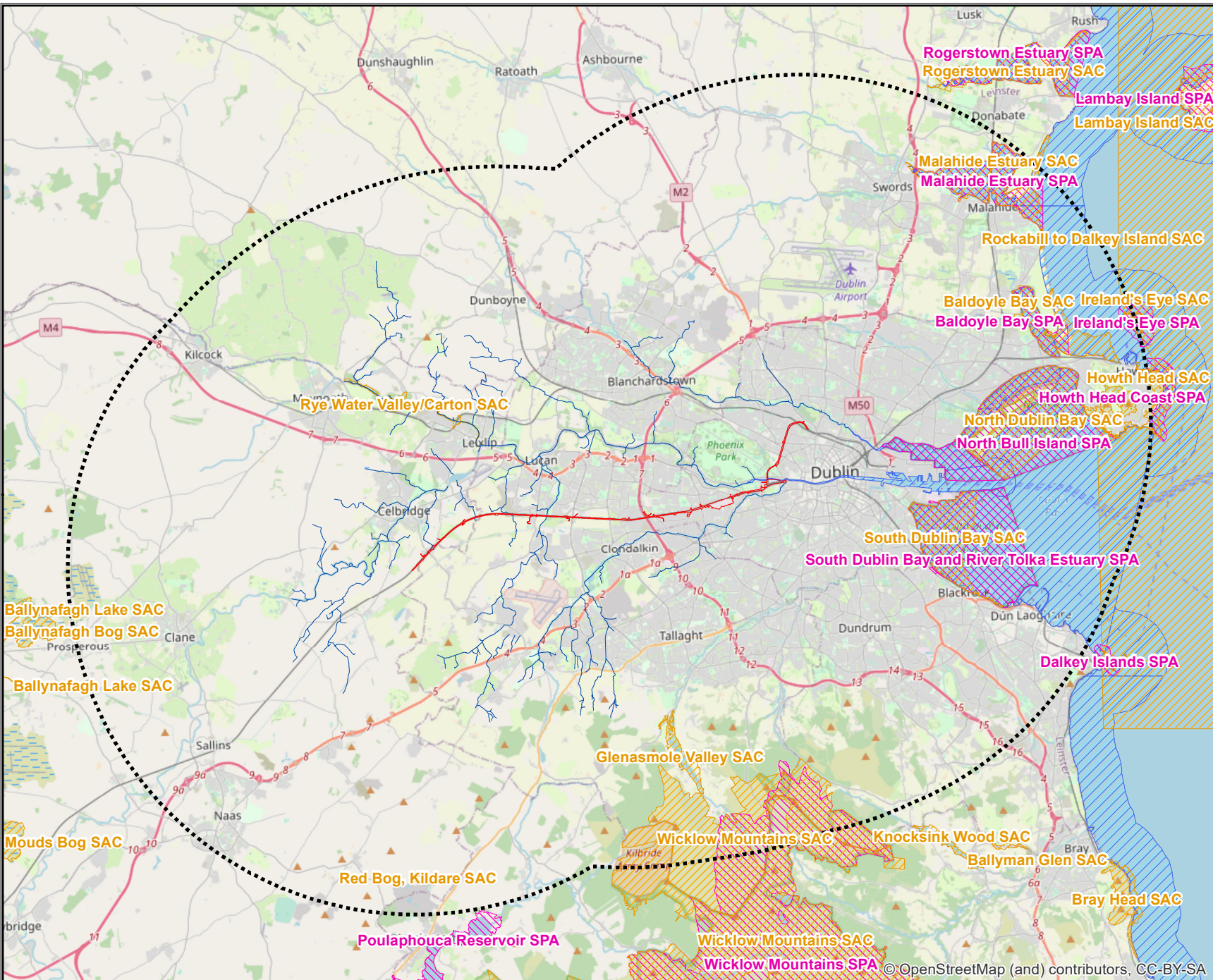
Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
	Black-tailed Godwit <i>Limosa limosa</i> [A156] Bar-tailed Godwit <i>Limosa lapponica</i> [A157] Curlew <i>Numenius arquata</i> [A160] Redshank <i>Tringa totanus</i> [A162] Turnstone <i>Arenaria interpres</i> [A169] Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] Wetland and Waterbirds [A999]		<p>risk of collision with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
Baldoye Bay SPA [004016] , located approx. 10.4km east of the proposed Project, CO's- Specific Version 1.0 [27/03/13] (NPWS, 2013d)	Brent Goose <i>Branta bernicla hrota</i> [A046] Shelduck <i>Tadorna tadorna</i> [A048] Ringed Plover <i>Charadrius hiaticula</i> [A137] Golden Plover <i>Pluvialis apricaria</i> [A140] Grey Plover <i>Pluvialis squatarola</i> [A141] Bar-tailed Godwit <i>Limosa lapponica</i> [A157] Wetlands [A999]	To maintain the favourable conservation condition	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet</p>

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
			determined and therefore precautionary principles applied.
Ireland's Eye SPA [004117] , located approx. 14.2km east of the proposed Project CO's- Generic Version 7.0 [07/04/20] (NPWS, 2022a)	Cormorant <i>Phalacrocorax carbo</i> [A017] Herring Gull <i>Larus argentatus</i> [A184] Kittiwake <i>Rissa tridactyla</i> [A188] Guillemot <i>Uria aalge</i> [A199] Razorbill <i>Alca torda</i> [A200]	To maintain or restore the favourable conservation condition	<p>Yes.</p> <p>Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
Howth Head Coast SPA [004113] , located	Kittiwake <i>Rissa tridactyla</i> [A188]	To maintain or restore the favourable conservation condition	<p>Yes.</p>

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
<p>approx. 14.6km east of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2022b)</p>			<p>Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
<p>Dalkey Islands SPA [004172], located approx. 15km southeast of the proposed Project, CO's- Generic Version 7.0 [07/04/20]</p>	<p>Roseate Tern <i>Sterna dougallii</i> [A192] Common Tern <i>Sterna hirundo</i> [A193] Arctic Tern <i>Sterna paradisaea</i> [A194]</p>	<p>To maintain or restore the favourable conservation condition</p>	<p>Yes.</p> <p>Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially</p>



Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
(NPWS, 2022c)			<p>influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>

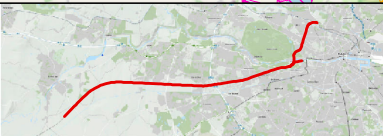


- ### Legend
- Redline Development Boundary
 - Zone of Influence (15km Buffer)
 - Watercourses
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - Transitional/Coastal Waterbodies



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Rev	Date	Dm	Chk'd	App'd	Description
v02	11/11/2022	NR	HF	AG	Description
v01	08/09/2022	NR	HF	AG	Description

Client		Engineering Designer	
Iarnród Éireann Irish Rail		ATKINS TYPSA Member of the SNC-Lavalin Group Supported by: FPS	
Date	Scale	Drawn	Checked
24/11/2022	1:230,000 @ A4	NR	HF
Project Code	Issuer	OMS Code	Approved
6195886	TTA		AG

Project Title	DART + SOUTH WEST		
Drawing Title	Figure 4.1: European Sites within the Zol of the Project		
Drawing File Name	DP-04-23-DWG-EV-TTA-23807	Version	Status
		v02	S3

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4.2. Species of European Sites

4.2.1. Qualifying Interests

The desk study returned records for three QI species within 5km of the proposed Project from the preceding 10 years, namely European otter *Lutra lutra* (2018), Grey Seal *Halichoerus grypus* (2012) and White-clawed Crayfish *Austropotamobius pallipes* (2016). Only European otter is considered potentially relevant in the context of the Wicklow Mountains SAC; however this has been screened out as documented in Appendix A.

4.2.2. Special Conservation Interests

The desk study returned records for 47 SCI bird species within 5km of the proposed Project from the preceding 10 years, (see Appendix A), nine of which are potentially relevant to this assessment (see Table 4.2). Six of the SPA that are located downstream of the proposed Project are designated for containing important populations of 32 SCI birds. The majority of SCI birds associated with downstream European Sites are almost exclusively coastal.

Table 4.2: Special Conservation Interest Birds Returned from NBDC Data Search

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁰
Arctic Tern <i>Sterna paradisaea</i>	2	31/12/2011	Summer visitor from March to September to all Irish coasts. Mainly a coastal breeding bird, but in Ireland the species also breeds inland on the fresh water lakes of Lough Corrib (Co. Galway) and Lough Conn (Co. Mayo). More colonies are found on the west coast.
Bar-tailed Godwit <i>Limosa lapponica</i>	4	31/12/2011	Winter visitor to coastal estuaries from October to April from Russia and Scandinavia. Wintering distribution entirely coastal. They are largely confined to estuaries, with largest numbers recorded on sandy estuaries. Small numbers recorded using non-estuarine coastline.
Black-headed Gull <i>Larus ridibundus</i>	131	21/05/2020	Resident along all Irish coasts, wintering inland also. Breeding nests on the ground in wetland areas, (i.e. bogs, marshes, man-made lakes). Widespread across agricultural fields, and urban areas.
Common Tern <i>Sterna hirundo</i>	5	31/12/2011	Summer visitor from March to October to all Irish coasts. Ground nester on coasts and inland on islets in freshwater lakes.
Dunlin <i>Calidris alpina</i>	6	31/12/2011	Summer and winter visitor to coastal areas, tidal mudflats and estuaries are preferred. Breeding in machair habitats.
Grey Plover <i>Pluvialis squatarola</i>	3	31/12/2011	Distribution in Ireland is widespread, but exclusively coastal. They occur mostly along eastern and southern coasts, most often on large muddy estuaries. They regularly roost among dense flocks during high tide, while their distribution is more

¹⁰ <https://birdwatchireland.ie/>

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁰
			scattered while feeding.
Herring Gull <i>Larus argentatus</i>	198	16/07/2020	Resident along all Irish coasts, breeding inland also. Widespread distribution.
Ringed Plover <i>Charadrius hiaticula</i>	6	31/12/2011	Resident & winter visitor. Peak numbers between August and early October. Winter around the entire coastline but are quite sparse along the north and southeast coasts. Mostly recorded along sandy stretches or along the upper shores of estuaries and non-estuarine coastline.
Sanderling <i>Calidris alba</i>	3	31/12/2011	First seen along the Irish coastline in July or August, though most arrive in Ireland between September & April. Found along sandy coastlines, especially non-estuarine.

5. Screening Assessment

5.1. Introduction

Article 6(3) of the Habitats Directive requires that any plan or project (i) not directly connected with or necessary to the management of a European site but (ii) likely to have a significant effect on such a site, 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.

5.2. Summary of Information Required

The screening assessment for AA follows the methodologies set out in Section 3, and analysis of the following information:

- Zol of effect from the proposed Project; and
- Distribution and assessment of QI and SCI in relation to the Zol.

5.3. Likely Significant Effects

5.3.1. Assessment of Likely Significant Effects

As described in the methodology (Section 3.4), the Screening for AA report assessment adopts a precautionary approach for which the starting point is an initial Zol scoping followed by the identification of potential impact/effects and an assessment stage on relevant European sites and their QI/SCI (source-pathway-receptor model). In this context, Table 5.1 assess likely significant effects on European Sites for the proposed Project.

Table 5.1: Assessment of Likely Significant Effects

Likely Significant Effects	
Construction Phase	<p>Potential habitat deterioration</p> <ul style="list-style-type: none"> • Changes in water quality (contaminants)- During construction, contaminated surface water run-off and/or accidental spillage or pollution event has potential to negatively impact water quality (and associated habitats) and subsequently affect aquatic and wetland habitats within and downstream of the proposed Project. This can result in interference and deterioration to QI habitats and the habitats which support SCI species for all or part of their life cycle within the European site. Although a potential indirect hydrological pathway exists; the reach of any potential effect along this pathway from impacts generated by the the propsoed Project have not yet been characterised. These will be characterised once the detailed Project Description has been prepared. Therefore a precautionary approach has been adopted for the purpose of Stage 1 – Screening. • Changes in water quality (siltation)- During construction, silt-laden water has potential to negatively impact water quality (surface and groundwater) and subsequently affect aquatic and wetland habitats (i.e. intertidal habitat) within and downstream of the proposed Project. This can result in interference and deterioration to QI habitats and the habitats which support

Likely Significant Effects	
	<p>SCI species for all or part of their life cycle within the European site. Although a potential indirect hydrological pathway exists; the reach of any potential effect along this pathway from impacts generated by the proposed Project have not yet been characterised. These will be characterised once the detailed Project Description has been prepared. Therefore a precautionary approach has been adopted for the purpose of Stage 1 – Screening. In addition, the majority of the downstream receptors identified have siltation events as part of their ecosystem function.</p>
Operational Phase	<p>Habitat deterioration</p> <ul style="list-style-type: none"> • Changes in water quality (contaminants)- During operation, contaminated surface water run-off and/or accidental spillage or pollution event has potential to negatively impact water quality (and associated habitats) and subsequently affect aquatic and wetland habitats within and downstream of the proposed Project. This can result in interference and deterioration to QI habitats and the habitats which support SCI species for all or part of their life cycle within the European site. Although a potential indirect hydrological pathway exists; the reach of any potential effect along this pathway from impacts generated by the proposed Project have not yet been characterised. These will be characterised once the detailed Project Description has been prepared. Therefore a precautionary approach has been adopted for the purpose of Stage 1 – Screening. • Changes in water quality (siltation)- During operation, silt-laden water has potential to negatively impact water quality (surface and groundwater) and subsequently affect aquatic and wetland habitats (i.e. intertidal habitat) within and downstream of the proposed Project. This can result in interference and deterioration to QI habitats and the habitats which support SCI species for all or part of their life cycle within the European site. Although a potential indirect hydrological pathway exists; the reach of any potential effect along this pathway from impacts generated by the proposed Project have not yet been characterised. These will be characterised once the detailed Project Description has been prepared. Therefore a precautionary approach has been adopted for the purpose of Stage 1 – Screening. • Potential SCI Species Mortality due to Electrification of the River Liffey Crossing- During operation, electrical infrastructure proposed for the proposed Project could result in direct species mortality due to collision between SCI species and overhead electrical infrastructure at the River Liffey crossing.

5.4. In-Combination Effects

Legislation, guidance and case law (See Section 1.2 and Section 3.1) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the proposed Project on relevant European sites considered by the Stage 1 – Screening.

5.4.1. Plans

A search was conducted of national, regional and local plans which were deemed relevant to the proposed Project (see Appendix A). Plans identified at the time (Q1 of 2022 when this screening report was prepared) include:

- Project Ireland 2040, National Development Plan;
- Project Ireland 2040, National Planning Framework
- 3rd National Biodiversity Action Plan 2017-2021 (and draft 4th plan in prep);
- Dublin City Development Plans 2016-2022 (and draft 2022-2028 plan in prep);
- South Dublin Development Plan 2016-2022 (and draft 2022-2028 plan in prep);
- Kildare County Development Plan 2017-2023;
- Celbridge Local Area Plan 2017-2023; and
- The 2nd Cycle River Basin Management Plan 2018-2021 (and draft 3rd Cycle River Basin Management Plan 2022-2027 in prep).

Plans do not generally identify specifics of arising development, therefore it is difficult to identify LSEs. However, several protective policies are in place across these plans aiming to preserve biodiversity and water quality. Furthermore, specific projects arising from plans and/or programmes will be subject to AA processes in their own right prior to consents being granted. As such, in-combination effects from plans are not deemed likely.

5.4.2. Projects

A search was conducted of planning applications (projects) at the time of the preparation of the screening report which were deemed relevant to the proposed Project (see Appendix A). Several consented and proposed projects within the vicinity of the proposed Project have the potential to result in in-combination impacts such as, railway improvement works, transport projects, wastewater treatment infrastructure, housing developments, flood protection, greenways, and data centres. These projects have the potential to result in disturbances or surface water pollution within waterbodies connected to the River Liffey which provides connectivity to downstream European Sites; however, such applications were subject to statutory processes and additional commitments required in the specific grant of planning permission. As LSE for the proposed Project cannot be ruled out at this stage (see Section 5.3) it is therefore not possible to rule out in-combination impacts at the Stage 1 - Screening.

6. Screening Conclusions and Statement

RPS supporting TTA-JV (Typsa, Tuc Rail and Atkins Joint Venture) has prepared this Screening Report to assess whether the DART+ South West Project, either individually or in combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European site(s).

The potential LSE of the proposed Project have been considered in the context of the European sites potentially affected, their qualifying interests and/or special conservation interests, and their conservation objectives.

The assessment concludes the following:

- The proposed Project is not directly connected with or necessary to the management of a European site;
- Applying the precautionary principle, the proposed Project is likely to have a significant effect on a number of European sites. The LSE relate primarily to potential downstream impacts to water quality (contamination and sedimentation) and potential collision risk of one or more SCI species with the electrification of the River Liffey crossing; and
- Also, in combination with other plans or projects, it is not possible to conclude at this stage no in combination LSE of the proposed Project with these other plans and projects.

It is therefore recommended that the proposed Project is brought forward to Stage 2 and a Natura Impact Statement is prepared for consideration of adverse effects on integrity of European sites and the need for mitigation of these effects. A Natura Impact Statement (NIS) should be prepared to provide the Board with the scientific information upon which it will base its findings and conclusions in relation to the Appropriate Assessment.

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Appendix A. Supporting Information

1. Receiving Environment

1.1. European Sites

Table 1.1: Conservation Objectives of European Sites within the Zol of the proposed Project (those in grey have been brought forward for assessment).

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
Glenasmole Valley SAC [001209] , located approx. 8.54km south of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2020a)	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites)* [6210]	To maintain or restore the favourable conservation condition	No. Site is located upstream and is separated from the Project by existing river water bodies and groundwater bodies.
	<i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]		
	Petrifying springs with tufa formation (Cratoneurion)* [7220]		
Rye Water Valley/Carton SAC [001398] , located approx.2.9km north of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2020b)	Petrifying springs with tufa formation (Cratoneurion)* [7220]	To maintain or restore the favourable conservation condition	No. Site is located upstream of the proposed Project but is connected via the Dublin Groundwater body. This GWB consists of general flow paths over a distance of less than a kilometre and flow toward the nearest surface water body (i.e. the River Liffey) which is directly adjacent to and/or intersects the proposed Project. Where groundwater discharges to surface water, it then flows
	Narrow-mouthed Whorl Snail <i>Vertigo angustior</i> [1014]		
	<i>Desmoulin's Whorl Snail Vertigo moulinsiana</i> [1016]		

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
			<p>toward the coast.</p> <p>It is highly unlikely that groundwater flow from the proposed Project will interact with this SAC and therefore, connectivity between the proposed Project and this SAC is ruled out.</p>
<p>Red Bog, Kildare SAC [000397], located approx. 12.4km southwest of the proposed Project, CO's-Specific Version 1.0 [17/07/19]. (NPWS, 2019)</p>	<p>Transition mires and quaking bogs [7140]</p>	<p>To maintain the favourable conservation condition</p>	<p>No.</p> <p>Site is separated from the proposed Project by existing river water bodies and groundwater bodies.</p>
<p>Rogerstown Estuary SAC [000208], located approx. 15km north east of the proposed Project, CO's- Specific Version 1.0 [14/08/13]. (NPWS, 2013d)</p>	<p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p><i>Salicornia</i> and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]</p> <p>Fixed coastal dunes with herbaceous vegetation (grey</p>	<p>To maintain the favourable conservation condition</p> <p>To maintain the favourable conservation condition</p> <p>To maintain the favourable conservation condition</p> <p>To restore the favourable conservation condition</p> <p>To maintain the favourable conservation condition</p> <p>To restore the favourable conservation condition</p> <p>To restore the favourable conservation condition</p>	<p>No.</p> <p>Site is separated from the proposed Project by existing river water bodies and groundwater bodies. The site is also located outside the first coastal waterbody (Dublin Bay) within the North-western Irish Sea coastal waterbody. Therefore, it is scoped out for further assessment.</p>

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
	dunes) [2130]		
Malahide Estuary SAC [000205] , located approx. 11.5km north east of the proposed Project, CO's-Specific Version 1.0 [27/05/13]. (NPWS, 2013e)	Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition	No.
	Salicornia and other annuals colonising mud and sand [1310]	To maintain the favourable conservation condition	Site is separated from the proposed Project by existing river water bodies and groundwater bodies., Therefore it is scoped out for further assessment.
	<i>Spartina</i> swards (<i>Spartinion maritimae</i>) [1320]	<i>Spartina</i> swards (<i>Spartinion maritimae</i>) was originally listed as a qualifying Annex I habitat for Malahide Estuary SAC due to historical records of two rare forms of cordgrass– small cordgrass (<i>Spartina maritima</i>) and Townsend's cordgrass (<i>S. x townsendii</i>). However, Preston et al. (2002) considers both forms to be alien. In addition, all stands of cordgrass in Ireland are now regarded as common cordgrass (<i>S. anglica</i>) (McCorry et al., 2003; McCorry and Ryle, 2009). As a consequence, a conservation objective has not been prepared for this habitat. It will therefore not be necessary to assess the likely effects of plans or projects against this Annex I habitat at this site.	
	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	To restore the favourable conservation condition	
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	To maintain the favourable conservation condition	
	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	To restore the favourable conservation condition	
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition	
Ballynafagh Bog	Active raised bogs [7110]	To restore the favourable conservation condition	

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
<p>SAC [000391], located approx. 14.7km southwest of the proposed Project, CO's-Specific Version 1.0 [10/11/15]. (NPWS, 2015c)</p>	<p>Degraded raised bogs still capable of natural regeneration [7120]</p>	<p>The long-term aim for Degraded raised bogs still capable of natural regeneration is that its peat-forming capability is re-established; therefore, the conservation objective for this habitat is inherently linked to that of Active raised bogs (7110) and a separate conservation objective has not been set in Ballynafagh Bog SAC</p>	<p>Site is separated from the proposed Project by existing river water bodies and groundwater bodies.</p>
	<p>Depressions on peat substrates of the Rhynchosporion [7150]</p>	<p>Depressions on peat substrates of the Rhynchosporion is an integral part of good quality Active raised bogs (7110) and thus a separate conservation objective has not been set for the habitat in Ballynafagh Bog SAC</p>	
<p>Baldoyle Bay SAC [000199], located approx. 10km north east of the proposed Project, CO's- Specific Version 1.0 [19/11/12]. (NPWS, 2012a)</p>	<p>Mudflats and sandflats not covered by seawater at low tide [1140]</p>	<p>To maintain the favourable conservation condition</p>	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
	<p>Salicornia and other annuals colonising mud and sand [1310]</p>		
	<p>Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]</p>		
	<p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p>		
<p>Ireland's Eye SAC [002193], located approx. 14.3km north east of the proposed Project, CO's- Specific Version 1.0 [27/01/17]. (NPWS, 2017b)</p>	<p>Perennial vegetation of stony banks [1220]</p>	<p>To maintain the favourable conservation condition</p>	<p>Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore</p>
	<p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p>		

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
			precautionary principles applied.
South Dublin Bay SAC [IE 000210], located approx. 5.6km north east of the proposed Project, CO's-Specific Version 1.0 [22/08/13]. (NPWS, 2013a)	Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
Howth head SAC [IE000202], located approx. 12km east of the proposed Project, CO's-Specific Version 1.0 [06/12/16]. (NPWS, 2016)	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay.
	European dry heaths [4030]	To maintain the favourable conservation condition	Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
Rockabill to Dalkey Island SAC	Reefs [1170]	To maintain the favourable conservation condition	Yes.

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
[003000], located approx. 12.3km east of the proposed Project, CO's Specific Version 1.0 [06/11/13]. (NPWS, 2013c)	Harbour porpoise <i>Phocoena phocoena</i> [1351]	To maintain the favourable conservation condition	Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
North Dublin Bay SAC [IE000206], located approx. 6.3km east of the proposed Project, CO's Specific Version 1.0 [07/05/13]. (NPWS, 2013b)	Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
	Annual vegetation of drift lines [1210]	To restore the favourable conservation condition	
	<i>Salicornia</i> and other annuals colonising mud and sand [1310]	To restore the favourable conservation condition	
	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	To maintain the favourable conservation condition	
	Petalwort <i>Petalophyllum ralfsii</i> [1395]	To maintain the favourable conservation condition	
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	To maintain the favourable conservation condition	
	Embryonic shifting dunes [2110]	To restore the favourable conservation condition	
	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	To restore the favourable conservation condition	
	Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition	
Humid dune slacks [2190]	To restore the favourable conservation condition		
Wicklow	Otter <i>Lutra lutra</i> [1355]	To maintain the favourable conservation	No.

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
Mountains SAC [002122] , located approx. 11.7km southeast of the proposed Project, CO's Specific Version 1.0 [31/07/17]. (NPWS, 2017a)		condition	This SAC is located upstream of the proposed Project c. 16.5km southwest via surface waterbodies. Although there is likely to be some connectivity in the regional otter population the core population of the SAC is unlikely to be significantly affected due to the known ecology of otter; particularly territory extents.
	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]	To maintain the favourable conservation condition	
	Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130]	To maintain the favourable conservation condition	
	Natural dystrophic lakes and ponds [3160]	To maintain the favourable conservation condition	
	Northern Atlantic wet heaths with <i>Erica Tetralix</i> [4010]	To maintain the favourable conservation condition	
	European dry heaths [4030]	To restore the favourable conservation condition	
	Alpine and Boreal heaths [4060]	To restore the favourable conservation condition	
	Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]	To restore the favourable conservation condition	
	Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]	To maintain the favourable conservation condition	
	Blanket bogs (* if active bog) [7130]	To restore the favourable conservation condition	
	Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110]	To restore the favourable conservation condition	
	Calcareous rocky slopes with chasmophytic vegetation [8210]	To maintain the favourable conservation condition	
	Siliceous rocky slopes with chasmophytic vegetation [8220]	To restore the favourable conservation condition	
Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	To restore the favourable conservation condition		
Poulaphouca Reservoir SPA [004063] , located	Greylag Goose <i>Anser anser</i> [A043]	To maintain or restore the favourable conservation condition	No. Site is separated from the proposed Project by existing river water bodies and
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]		

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
approx. 14.6km south of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2020c)			groundwater bodies.
South Dublin Bay and River Tolka Estuary SPA [004024] , located approx. 5.6km east of the proposed Project, CO's- Generic Version 7.0 [09/03/15] (NPWS, 2015a)	Light-bellied Goose <i>Branta bernicla hrota</i> [A046]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent. Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed. Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
	Oystercatcher <i>Haematopus ostralegus</i> [A130]	To maintain the favourable conservation condition	
	Ringed Plover <i>Charadrius hiaticula</i> [A137]	To maintain the favourable conservation condition	
	Grey Plover <i>Pluvialis squatarola</i> [A141]	Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species.	
	Knot <i>Calidris canutus</i> [A143]	To maintain the favourable conservation condition	
	Sanderling <i>Calidris alba</i> [A144]	To maintain the favourable conservation condition	
	Dunlin <i>Calidris alpina alpina</i> [A149]	To maintain the favourable conservation condition	
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	To maintain the favourable conservation condition	
	Redshank <i>Tringa tetanus</i> [A162]	To maintain the favourable conservation condition	
Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	To maintain the favourable conservation condition		

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
	Roseate Tern <i>Sterna dougallii</i> [A192]	To maintain the favourable conservation condition	
	Common Tern <i>Sterna hirundo</i> [A193]	To maintain the favourable conservation condition	
	Arctic Tern <i>Sterna paradisaea</i> [A194]	To maintain the favourable conservation condition	
	Wetlands [A999]	To maintain the favourable conservation condition	
North Bull Island SPA [004006] , located approx. 6.3km east of the proposed Project, CO's- Generic Version 7.0 [09/03/15] (NPWS, 2015b)	Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent. Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed. Extent of potential effects from Project activities not yet
	Shelduck <i>Tadorna tadorna</i> [A048]		
	Teal <i>Anas cracca</i> [A052]		
	Pintail <i>Anas acuta</i> [A054]		
	Shoveler <i>Anas clypeata</i> [A056]		
	Oystercatcher <i>Haematopus ostralegus</i> [A130]		
	Golden Plover <i>Pluvialis apricaria</i> [A140]		
	Grey Plover <i>Pluvialis squatarola</i> [A141]		
	Knot <i>Calidris canutus</i> [A143]		
	Sanderling <i>Calidris alba</i> [A144]		
	Dunlin <i>Calidris alpina</i> [A149]		
	Black-tailed Godwit <i>Limosa limosa</i> [A156]		
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]		
	Curlew <i>Numenius arquata</i> [A160]		
Redshank <i>Tringa totanus</i> [A162]			
Turnstone <i>Arenaria interpres</i> [A169]			
Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]			

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
	Wetland and Waterbirds [A999]		determined and therefore precautionary principles applied.
Wicklow Mountains SPA [004040] , located approx. 11.7km south of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2020d)	Merlin <i>Falco columbarius</i> [A098] Peregrine Falco peregrinus [A103]	To maintain or restore the favourable conservation condition	No. Site is separated from the proposed Project by existing river water bodies and groundwater bodies. Both species for which this site is designated are unlikely to occur within the area of the proposed Project.
Baldoyle Bay SPA [004016] , located approx. 10.4km east of the proposed Project, CO's- Specific Version 7.0 [19/11/12] (NPWS, 2012b)	Brent Goose <i>Branta bernicla hrota</i> [A046] Shelduck <i>Tadorna tadorna</i> [A048] Ringed Plover <i>Charadrius hiaticula</i> [A137] Golden Plover <i>Pluvialis apricaria</i> [A140] Grey Plover <i>Pluvialis squatarola</i> [A141] Bar-tailed Godwit <i>Limosa lapponica</i> [A157] Wetlands [A999]	To maintain the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent. Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
			Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.
Malahide Estuary SPA [004025] , located approx. 11.7km south of the proposed Project, CO's- Specific Version 1.0 [16/08/13] (NPWS, 2013e)	Great Crested Grebe <i>Podiceps cristatus</i> [A005] Brent Goose <i>Branta bernicla hrota</i> [A046] Shelduck <i>Tadorna tadorna</i> [A048] Pintail <i>Anas acuta</i> [A054] Goldeneye <i>Bucephala clangula</i> [A067] Red-breasted Merganser <i>Mergus serrator</i> [A069] Oystercatcher <i>Haematopus ostralegus</i> [A130] Golden Plover <i>Pluvialis apricaria</i> [A140] Grey Plover <i>Pluvialis squatarola</i> [A141] Knot <i>Calidris canutus</i> [A143] Dunlin <i>Calidris alpina</i> [A149] Black-tailed Godwit <i>Limosa limosa</i> [A156] Bar-tailed Godwit <i>Limosa lapponica</i> [A157] Redshank <i>Tringa totanus</i> [A162] Wetlands [A999]	To maintain the favourable conservation condition	No. Site is separated from the proposed Project by existing river water bodies and groundwater bodies. However, there is connectivity via the marine environment but by virtue of distance (c. 28km) and dilution of potential pollutants within the marine environment, it is scoped out for further assessment.
Ireland's Eye SPA [004117] , located approx. 14.2km east of the proposed Project CO's- Generic Version 7.0 [07/04/20] (NPWS,	Cormorant <i>Phalacrocorax carbo</i> [A017] Herring Gull <i>Larus argentatus</i> [A184] Kittiwake <i>Rissa tridactyla</i> [A188] Guillemot <i>Uria aalge</i> [A199] Razorbill <i>Alca torda</i> [A200]	To maintain or restore the favourable conservation condition	Yes. Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
2022a)			<p>which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
<p>Howth Head Coast SPA [004113], located approx. 14.6km east of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2022b)</p>	<p>Kittiwake <i>Rissa tridactyla</i> [A188]</p>	<p>To maintain or restore the favourable conservation condition</p>	<p>Yes.</p> <p>Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at</p>

Site (Code), Distance from the proposed Project, and Conservation Objectives Version	Qualifying Interest(s) (*Priority Habitat) and Special Conservation interest(s)	Conservation Objective(s)	Identified Potential Pathways
			<p>the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>
<p>Dalkey Islands SPA [004172], located approx. 15km southeast of the proposed Project, CO's- Generic Version 7.0 [07/04/20] (NPWS, 2022c)</p>	<p>Roseate Tern <i>Sterna dougallii</i> [A192] Common Tern <i>Sterna hirundo</i> [A193] Arctic Tern <i>Sterna paradisaea</i> [A194]</p>	<p>To maintain or restore the favourable conservation condition</p>	<p>Yes.</p> <p>Indirect hydrological connectivity via the River Liffey and its tributaries, and Liffey Estuary which discharges into Dublin Bay. The discharges potentially influencing the habitat upon which the SCI species are dependent.</p> <p>Potential use of the River Liffey corridor for bird movements from the SPA to inland areas with provisional risk of collision risk with proposed overhead lines at the River Liffey crossing. No species preference analysis yet completed.</p> <p>Extent of potential effects from Project activities not yet determined and therefore precautionary principles applied.</p>

1.2. Hydrological Connectivity and Flood Risk

1.2.1. Hydrological Connectivity

There are several watercourses that intersect the existing railway line. Starting at the southwestern end of the development, the Castletown_09 (IE_EA_09C500830) intersects the railway line at Hazelhatch and flows in a northerly direction toward the Liffey at Celbridge. The Coneyburrow_09 (IE_EA_09L011900), Lucan Stream (IE_EA_09L012100) and the Griffeen (IE_EA_09L012100) intersect the railway line at Stacummy and Adamstown and all flow in a northerly direction where they re-join with the River Liffey.

Within Dublin, the Camac (IE_EA_09C020500) and the River Liffey (IE_EA_09L012360) both intersect the railway line at Islandbridge and Heuston Station. Further north at Cabra, the River Tolka (IE_EA_09T011150) is located c. 0.8km from the proposed Project.

Analysis of the EPA online mapper identified that these river water bodies provide indirect hydrological connectivity over a significant distance to twelve European Sites (see Figure 4-1).

The River Water Body Status (2013-2018) for Castletown_09 (IE_EA_09C500830) is 'good' using 'Expert Judgement' by the EPA and is placed at 'review' regarding meeting WFD objectives. The Coneyburrow_09 (IE_EA_09L011900) is 'good' and is placed at 'review' regarding meeting WFD objectives. The Lucan Stream (IE_EA_09L012100) and the Griffeen (IE_EA_09L012100) are both 'good' and are identified as 'at risk' of failing to meet its WFD objectives.

The River Water Body Status (2013-2018) for the Camac (IE_EA_09C020500) is 'poor' and is placed at 'at risk' regarding meeting WFD objectives. The River Liffey (IE_EA_09L012360) is 'moderate' and is placed at 'at risk' regarding meeting WFD objectives.

The proposed Project is within the Dublin (IE_EA_G_008) groundwater body. Typical groundwater flow paths are towards the coast and toward the River Liffey¹¹. The fissured nature and the moderate permeability of the bedrock close to the surface imply that water will move at high velocities. This groundwater body is classified as being of 'good' status, for the period 2013-2018.

1.2.2. Flood Risk

The OPW Flood Risk Management Maps¹² indicate low probability (0.1% AEP) flood risk for the lands surrounding the proposed Project, where the railway line intersects a water body. The flood maps also indicate low probability (0.1% AEP¹³) coastal flood risk along River Liffey, where the Liffey Estuary intersects with Islandbridge.

A review of local flooding history¹² where the railway line intersects several watercourses identified a number of flood events in close proximity to the railway line. Recorded events are as follows:

¹¹ Geological Survey Ireland: Groundwater bodies- Dublin.

https://secure.dccae.gov.ie/GSI_DOWNLOAD/Groundwater/Reports/GWB/DublinGWB.pdf Accessed February 2022.

¹² Available online at <http://www.floodinfo.ie/map/floodmaps/#> Accessed February 2022.

¹³ Low Probability flood events have an indicative 1-in-a-1000 chance of occurring or being exceeded in any given year. This is also referred to as an Annual Exceedance Probability (AEP) of 0.1%.

- Bridgewater Quay Apartments, Islandbridge, Dublin 8 (October 2011, 0.2km west): Flooding was associated with surface water runoff from the Phoenix Park. The River Liffey did not burst its banks in this area; it flooded a low-lying pedestrian walkway.
- Beech Row Ronanstown (Recurring, 0.2km north): Flooding here is associated with the Liffey catchment. This area is being reviewed by South Dublin County Council as a vulnerable area to flooding.
- Shinkeen, Hazelhatch River Road (November 2000, 0.1km east of the rail line);
- Shinkeen Hazelhatch (Recurring, 0.2km southeast on the Hazelhatch Road, R405); recurring flooding issues.
- The area surrounding Hazelhatch station has had a number of past flood events, but its status is 'under review' according to the flood maps. One flooding event along Hazelhatch railway lines caused closure of the southern train services (RPS, 2020). No further flood events were noted within the study area along the railway line or associated railway stations according to the OPW Floodmaps.

1.3. Species of European Sites

1.3.1. Qualifying Interests

Table 1.2: Qualifying Interest Species Returned from NBDC Data Search

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁴
Mammals			
European Otter <i>Lutra lutra</i>	31	16/07/2018	Lakes and ponds, watercourses, riparian woodland, estuaries, sea inlets and bays, saltmarshes, swamps.
Grey Seal <i>Halichoerus grypus</i>	1	11/02/2012	Occurs around all Irish coasts. This species forages at sea, within the continental shelf boundary. Haul-out sites in the breeding season will most often be onto shores of islands or onto remote mainland shores. In Britain and Ireland breeding sites are above high water mark.
Crustaceans			
Freshwater White-clawed Crayfish <i>Austropotamobius pallipes</i>	17	02/09/2016	Found in rivers, streams and lakes in Ireland particularly in those with a calcareous influence. Necessity for refuges whether this be vegetation, boulders or man-made features. Hard substrates were found to be preferable to muddy substrates.

¹⁴ Available online at <https://species.biodiversityireland.ie/>. Accessed February 2022.

1.3.2. Special Conservation Interests

Table 1.3: Special Conservation Interest Birds Returned from NBDC Data Search

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁵
Arctic Tern <i>Sterna paradisaea</i>	2	31/12/2011	Summer visitor from March to September to all Irish coasts. Mainly a coastal breeding bird, but in Ireland the species also breeds inland on the fresh water lakes of Lough Corrib (Co. Galway) and Lough Conn (Co. Mayo). More colonies are found on the west coast.
Barnacle Goose <i>Branta leucopsis</i>	1	15/02/2015	Local winter visitor from Greenland, occurring in Ireland between October & April. Mostly on remote islands in the northwest Ireland where it is relatively free from disturbance. Highly gregarious.
Bar-tailed Godwit <i>Limosa lapponica</i>	4	31/12/2011	Winter visitor to coastal estuaries from October to April from Russia and Scandinavia. Wintering distribution entirely coastal. They are largely confined to estuaries, with largest numbers recorded on sandy estuaries. Small numbers recorded using non-estuarine coastline.
Black-headed Gull <i>Larus ridibundus</i>	131	21/05/2020	Resident along all Irish coasts, wintering inland also. Breeding nests on the ground in wetland areas, i.e. bogs, marshes, man-made lakes. Widespread across agricultural fields, and urban areas.
Black-legged Kittiwake <i>Rissa tridactyla</i>	4	01/03/2018	Winters at sea. Breeds on steep sea cliffs where it builds a nesting platform on the most vertical and sometimes improbably steep areas.
Black-tailed Godwit <i>Limosa limosa</i>	3	31/12/2011	Winter visitor to both inland and coastal estuarine habitats. Rare Irish breeding sites in lowland wet grassland and marshes.
Common Coot <i>Fulica atra</i>	92	20/08/2021	Resident at ponds and lakes throughout Ireland. Wintering in lakes, coastal estuaries and river systems.
Common Goldeneye <i>Bucephala clangula</i>	5	31/12/2011	Resident to Irish coastal waters. Comes ashore to nest on cliff edges from May onwards.
Common Greenshank <i>Tringa nebularia</i>	4	31/12/2011	Winter visitor to estuaries from September to April.
Common Kingfisher <i>Alcedo atthis</i>	60	01/05/2021	Resident on Irish streams, rivers and canals. Wintering in lakes and coasts during extended poor weather.
Common Pochard <i>Aythya ferina</i>	15	31/12/2011	Scarce summer visitor and widespread winter migrant between October & February to large shallow eutrophic waters i.e. well-vegetated

¹⁵ <https://birdwatchireland.ie/>

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁵
			marshes and swamps and slow flowing rivers.
Common Redshank <i>Tringa tetanus</i>	15	31/12/2011	Resident and visitor populations. A common wader of wetlands throughout the country, though mainly coastal estuaries in winter. Nests in grassy tussock, in wet, marshy areas and occasionally heather. Breeds mainly in midlands.
Common Shelduck <i>Tadorna tadorna</i>	9	31/12/2011	Resident and winter migrant to sheltered estuaries or tidal mudflats. Breeds in open areas along seashores, larger lakes and rivers. Nest in holes in banks, trees, occasionally strawstacks or buildings. Increasing displacement to inland sites.
Common Tern <i>Sterna hirundo</i>	5	31/12/2011	Summer visitor from March to October to all Irish coasts. Ground nester on coasts and inland on islets in freshwater lakes.
Dunlin <i>Calidris alpina</i>	6	31/12/2011	Summer and winter visitor to coastal areas, tidal mudflats and estuaries are preferred. Breeding in machair habitats.
Eurasian Curlew <i>Numenius arquata</i>	26	09/07/2021	Winter visitor to Irish wetlands. Breeding throughout Ireland in floodplains, bog lands, meadows, rough pasture and heather.
Eurasian Oystercatcher <i>Haematopus ostralegus</i>	16	31/08/2017	Resident & winter visitor to all coastal habitats, and particularly favour open sandy coasts. Nests principally on shingle beaches, dunes, salt marshes and rocky shores around the coast.
Eurasian Teal <i>Anas crecca</i>	20	26/02/2017	Resident & winter migrant. Wetland preferences in covered freshwater lakes, pools and small upland streams away from the coast. Wintering in coastal lagoons and estuaries and inland marshes, lakes, ponds and turloughs.
Eurasian Wigeon <i>Anas penelope</i>	10	31/12/2011	Fairly widespread and common winter visitor. Can be found in flocks up to and over 1000 birds on large wetlands and waterbodies. Non-breeding in Ireland.
European Golden Plover <i>Pluvialis apricaria</i>	11	31/12/2011	Widespread distribution during wintering in coastal and inland habitats. Summer populations restricted to uplands in NW Ireland with heather moors, blanket bogs, and acidic grasslands.
Gadwall <i>Anas strepera</i>	4	31/12/2011	Localised wintering distribution at a variety of inland and coastal sites. Nest on a variety of freshwater and brackish wetlands, especially shallow lakes with abundant emergent vegetation, slow moving rivers and marshes.
Great Cormorant <i>Phalacrocorax carbo</i>	53	17/07/2021	Irish resident either at sea or on inland lakes and rivers. Breeds in colonies mainly around the coast of Ireland, with some birds breeding inland.
Great Crested Grebe <i>Podiceps cristatus</i>	11	31/12/2011	Winter distribution is widespread with greatest concentration in the north midlands and northeast and birds from the continent join the resident population. Outside the breeding season are often

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁵
			solitary with some birds moving to the coast through the winter. Breed on large, shallow eutrophic loughs, and along canals and slow flowing rivers – wetlands with emergent vegetation bordered by open water are generally selected.
Great Northern Diver <i>Gavia immer</i>	1	31/12/2011	Great Northern Divers occur along the Irish coastline between September and April and are usually observed as single birds or small groups. They are the most numerous of the divers occurring in Ireland and are particularly abundant off the south, west and northwest coasts over the winter. Do not breed in Ireland.
Greater Scaup <i>Aythya marila</i>	6	27/10/2017	Winter visitor to coastal estuaries and bays, on brackish lagoons and in shallow marine waters, usually less than 10 m in depth. Does not breed in Ireland.
Grey Heron <i>Ardea cinerea</i>	160	23/08/2021	Common resident at wetlands, estuaries and along rivers throughout Ireland.
Grey Plover <i>Pluvialis squatarola</i>	3	31/12/2011	Distribution in Ireland is widespread, but exclusively coastal. They occur mostly along eastern and southern coasts, most often on large muddy estuaries. They regularly roost among dense flocks during high tide, while their distribution is more scattered while feeding.
Greylag Goose <i>Anser anser</i>	2	15/01/2020	Winter migrant between November & April wintering mostly at coastal sites near estuaries and grasslands for feeding. Feral birds are present year round. Breeds by lakes and reservoirs, with the nest site often close to water and hidden in reeds or other waterside vegetation.
Hen Harrier <i>Circus cyaneus</i>	4	31/12/2011	Winter visitor to low-lying countryside along the coast. Breeding in upland areas and bogs confined to heather moorland and young forestry plantations.
Herring Gull <i>Larus argentatus</i>	198	16/07/2020	Resident along all Irish coasts, breeding inland also. Widespread distribution.
Lesser Black-backed Gull <i>Larus fuscus</i>	43	01/05/2021	Summer populations are distributed across the Irish coastline including offshore islands, islands in inland lakes, sand dunes and coastal cliffs. Winter visitors to more inland lakes.
Little Grebe <i>Tachybaptus ruficollis</i>	95	20/08/2021	Resident on vegetated ponds and lakes throughout Ireland. Wintering habitat extends to include ephemeral wetlands and are often encountered on sheltered coasts, estuaries and coastal lakes and lagoons
Mallard <i>Anas platyrhynchos</i>	199	01/05/2021	Resident across all wetland habitats in Ireland.
Merlin <i>Falco columbarius</i>	6	09/03/2014	Favours upland habitats in summer and lowland and coastal sites October-April. Nesting on the ground on moorland, mountain and blanket bog. Also nests in woodland and has taken to nesting in forestry plantations adjacent to moorland.

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁵
Mew Gull <i>Larus canus</i>	37	28/07/2019	Widespread across Irish coastland. Nests on the ground in a wide variety of situations, including, islands, cliffs and shingle banks. Breeds on the coast and inland lakes in the west of Ireland.
Northern Lapwing <i>Vanellus vanellus</i>	31	21/12/2016	Irish resident and summer visitor across wetlands, pasture and rough land adjacent to bogs. Breed on open farmland, and bare fields.
Northern Pintail <i>Anas acuta</i>	2	31/12/2011	Local winter visitor to wetlands throughout Ireland from October to March. In winter, they form large flocks on brackish coastal lagoons, in estuaries and on large inland lakes.
Northern Shoveler <i>Anas clypeata</i>	4	31/12/2011	Resident & winter migrant. Most occur between October and March. Prefer shallow eutrophic waters rich in plankton, and occur on a variety of habitats while wintering in Ireland, including coastal estuaries, lagoons and inland lakes and callows.
Peregrine Falcon <i>Falco peregrinus</i>	25	16/09/2017	Widespread resident in Ireland favouring coastal sites and cities with high vantage points
Red Knot <i>Calidris canutus</i>	3	31/12/2011	Winter visitor to Irish coasts between October & February. The preferred habitat mostly includes estuarine sites with extensive areas of muddy sand. They occur mostly in large flocks and on fewer estuaries than other wader species. Breed at low density, and often close to the coast, nesting on well concealed and sparsely vegetated gravel and rocky slopes.
Red-breasted Merganser <i>Mergus serrator</i>	3	31/12/2011	Resident and winter visitor to brackish and marine waters, particularly in shallow protected estuaries and bays and lagoons, and also offshore. Nest on sheltered lakes and large rivers throughout the west and north of the country, though they are largely absent from Clare and a few pairs have been recorded in Wexford.
Red-throated Diver <i>Gavia stellata</i>	2	31/12/2011	Winter visitor to all Irish coasts from September to April. There is a very small breeding population in County Donegal. During the winter they are well distributed around the Irish coastline and are typically associated with shallow sandy bays. In Ireland they breed on small fresh water loughs. Ireland is the most southerly breeding location in the species' range.
Ringed Plover <i>Charadrius hiaticula</i>	6	31/12/2011	Resident & winter visitor. Peak numbers between August and early October. Winter around the entire coastline, but are quite sparse along the north and southeast coasts. Mostly recorded along sandy stretches or along the upper shores of estuaries and non-estuarine coastline.
Ruddy Turnstone <i>Arenaria</i>	3	31/12/2011	Winter visitor, occurs late July to late April. Winters all around the Irish coast, particularly on rocky shores, headlands, islands and piers. Does not

Species Name	Record Count	Date of Last Record	Habitat Preferences ¹⁵
<i>interpres</i>			breed in Ireland.
Sanderling <i>Calidris alba</i>	3	31/12/2011	First seen along the Irish coastline in July or August, though most arrive in Ireland between September & April. Found along sandy coastlines, especially non-estuarine.
Tufted Duck <i>Aythya fuligula</i>	92	20/08/2021	Resident & winter visitor. Preference for large open lakes in lowland areas for breeding, where nests are built in waterside vegetation. Also seen on town lakes, canals and slow-moving rivers.
Whooper Swan <i>Cygnus cygnus</i>	5	31/12/2011	Winter visitor to wetlands and nearby open farmland throughout Ireland. Breeding in open shallow water, by coastal inlets, estuaries and rivers

*Greylag Goose *Anser anser* is also listed as a third schedule invasive alien animal under the European Communities (Bird and Natural Habitat Regulations) 2011-2015. Occurrence of this species is treated as the SCI bird and not domestic breed due to nature of NBDC sighting information for the specific records.

1.4. Invasive Alien Plants and Animals

Table 1.4: Invasive alien plants and animals, scheduled to the European Communities (Bird and Natural Habitat Regulations) 2011-2015 Returned from NBDC Data Search

Common Name Scientific Name	Record Count	Date of Last Record	Location
Flowering Plant			
Japanese Knotweed <i>Fallopia japonica</i>	139	01/05/2021	Throughout the study area. Dominant within County Dublin particularly at Heuston Station, Inchicore and areas in and around Hazelhatch Station.
Brazilian Giant-rhubarb <i>Gunnera manicata</i>	2	29/03/2019	0.8km northeast of Glasnevin Cemetery.
Bohemian knotweed <i>Fallopia x bohemica</i>	4	17/06/2015	0.2km southeast of the Royal Hospital Kilmainham, 0.5km north of the railway line at Tolka Valley Park, 0.2km south of the line at Shandon Gardens road near the Grand Canal.
Giant Hogweed <i>Heracleum mantegazzianum</i>	163	26/04/2021	0.6km north of the line near Clondalkin at Collinstown, throughout the northeast section of the line at North Circular Road, Phoenix Park and Glasnevin (all <1km from the line)
Three-cornered Garlic <i>Allium triquetrum</i>	22	21/05/2021	0.6km northwest near Broombridge Railway station, 0.4km north at Glasnevin Cemetery including locations at Chapelizod and Portobello.
Giant Knotweed <i>Fallopia sachalinensis</i>	3	03/08/2017	0.3km north at the Irish National War Memorial Gardens.
Giant-rhubarb <i>Gunnera tinctoria</i>	2	28/06/2020	1.2km north at Chapelizod, near the southwest boundary of Phoenix Park.
Indian Balsam <i>Impatiens glandulifera</i>	152	11/09/2021	Throughout the northeast end of the study area. Particularly dominant at Islandbridge, Kilmainham, Heuston Station and Drumcondra. Records also noted at Celbridge, Co. Kildare.
New Zealand Pigmyweed <i>Crassula helmsii</i>	4	31/07/2009	Noted throughout the areas of Drumcondra and Glasnevin. Data shows records within 0.1km of the railway line.
Nuttall's Waterweed <i>Elodea nuttallii</i>	32	18/07/2020	Throughout the northeast end of the study area. Particularly dominant at Drumcondra, Glasnevin, Islandbridge, Kilmainham and Ballyfermot, Closest records noted within 0.1km of the line. In Co. Kildare, a single record 0.9km south of the line at Gollierstown.
Parrot's-feather <i>Myriophyllum aquaticum</i>	2	31/07/2009	Two records noted 0.8km south near the Luas Red line at Suir Road and Drimnagh.
Spanish Bluebell <i>Hyacinthoides</i>	3	06/05/2018	Closest records are noted

Common Name	Scientific Name	Record Count	Date of Last Record	Location
	<i>hispanica</i>			approximately 2.5 km south of the line in Corkagh Park in Clondalkin and Eamonn Ceannt Park in Kimmage.
American Skunk-cabbage	<i>Lysichiton americanus</i>	3	29/03/2019	0.9km north at the National Botanic Gardens.
Canadian Waterweed	<i>Elodea canadensis</i>	33	08/07/2020	Throughout the northeast end of the study area. Particularly dominant at Islandbridge, Kilmainham, Heuston Station, Phoenix Park and Inchicore. Records also noted at Celbridge, Co. Kildare.
Fern				
Water Fern	<i>Azolla filiculoides</i>	10	20/05/2011	Noted throughout the areas of Drumcondra and Glasnevin. Data shows records within 0.1km of the railway line. Other records noted >1.5km of the railway line at Dolphins Barn and Phoenix Park.
Terrestrial Mammal				
American Mink	<i>Mustela vison</i>	9	02/08/2018	Closest records are noted 1.7km from the line at Celbridge, Newcastle and Skeagh.
Brown Rat	<i>Rattus norvegicus</i>	24	26/05/2020	Throughout the study area. Data shows records within 0.1 km of the railway line at Lucan, Islandbridge and Cabra West
Eastern Grey Squirrel	<i>Sciurus carolinensis</i>	143	01/09/2020	Throughout the study area.
Siberian Chipmunk	<i>Tamias sibiricus</i>	1	15/07/2011	1.5km south of the line at Clondalkin.
Bird				
Greylag Goose	<i>Anser anser</i>	7	31/12/2011	2km north at Phoenix Park and throughout the Saggart and Jobstown area.
Bony Fish				
Roach	<i>Rutilus rutilus</i>	2	19/05/2012	Two records noted at Glen Pond, 2km north of the line and at People's Garden, within 0.1km of the railway line.
Insect				
Harlequin Ladybird	<i>Harmonia axyridis</i>	39	02/12/2021	1.3km northwest at Phoenix Park.

1.5. In-Combination Effects

Legislation, guidance and case law (See Section 1.2 and Section 3.1 of the AA Screening) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with proposed Project on relevant European sites, namely Baldoyle Bay SAC, Ireland's Eye SAC, South Dublin Bay SAC, Howth head SAC, Rockabill to Dalkey Island SAC, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, Baldoyle Bay SPA, Ireland's Eye SPA, Howth Head Coast SPA and Dalkey Islands SPA.

1.5.1. Plans

A search was conducted of national, regional and local plans which were deemed relevant to proposed Project. This list is not exhaustive of all plans and programmes, but instead focuses on plans which may have result in in-combination effect within relevant European sites. Search results are discussed in Table 1.5.

Table 1.5: Planning Search Results – Plans and Programmes

Plan	Conflicting Policies	Protective Policies
National Development Plan 2018-2027 (Government of Ireland, 2018)	Strategic Investment Priority: A Strong Economy, supported by Enterprise, Innovation and Skills - €9.4 billion spend.	Strategic Investment Priority: Sustainable Management of water and other Environmental Resources- €8.8 billion spend. Biodiversity key in Irish heritage and eco-tourism. Arising ' <i>National Biodiversity Action Plan 2017-2021</i> '
National Biodiversity Action Plan 2017-2021 (DCHG, 2017)	n/a	Objective 1: ' <i>Mainstream biodiversity into decision-making across all sectors</i> ' Objective 2: ' <i>Strengthen the knowledge base for conservation, management and sustainable use of biodiversity</i> ' Objective 3: ' <i>Increase awareness and appreciation of biodiversity and ecosystems service</i> ' Objective 4: ' <i>Conserve and restore biodiversity and ecosystem services in the wider countryside</i> ' Objective 6: ' <i>Expand and improve management of protected areas and species</i> ' Objective 7: ' <i>Strengthen international governance for biodiversity and ecosystem services</i> '
Greater Dublin Area Cycle Network Plan	Potential future development of the cycle routes which include several crossings of the DART+ South West Project corridor.	The Greater Dublin Area Cycle Network Plan sets out a 10-year strategy to expand the urban cycle network from 500km to 2,480km. The overarching ambition of the scheme is, by 2021, to increase the numbers who commute by

Plan	Conflicting Policies	Protective Policies
		<p>bike to be the same amount as those who commute by bus. The network will consist of a series of primary, secondary and feeder routes as well as greenways routes. These routes will comprise of a mix of cycle tracks and lanes, cycleways and infrastructure-free cycle routes in low traffic environments.</p>
<p>Dublin City Development Plan 2016-2022 (DCC, 2016)</p>	<p>Wider land use surrounding the proposed Project zoned for enterprise, industrial, economic and employment purposes in accordance with the core strategies outlined in the plan.</p>	<p>Policy GI23: <i>'To protect flora, fauna and habitats, which have been identified by Articles 10 and 12 of Habitats Directive, Birds Directive, Wildlife Acts 1976–2012, the Flora (Protection) Order 2015 S.I No. 356 of 2015, European Communities (Birds and Natural Habitats) Regulations 2011 to 2015'</i></p> <p>Policy GI24: <i>'To conserve and manage all Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas designated, or proposed to be designated, by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs'</i></p> <p>Objective GI017: <i>'To seek the continued improvement of water quality, bathing facilities and other recreational opportunities in the coastal, estuarine and surface waters in the city and to protect the ecology and wildlife of Dublin Bay'</i></p> <p>Objective GI023: <i>'To support the implementation of the 'Dublin City Biodiversity Action Plan 2015–2020', including inter alia (a) the conservation of priority species, habitats and natural heritage features, and (b) the protection of designated sites'</i></p> <p>Sustainable Environmental Infrastructure, Built Heritage and Culture and Sustainable Communities and Neighbourhoods all incorporate flood risk assessment and management and the protection of biodiversity into objectives.</p>
<p>South Dublin Development</p>	<p>Wider land use surrounding the</p>	<p>IE3 Objective 2: <i>'To manage flood risk in</i></p>

Plan	Conflicting Policies	Protective Policies
<p>Plan 2016-2022 (SDCC, 2016)</p>	<p>proposed Project zoned for enterprise, industrial and employment purposes in accordance with an overall strategy for proper planning and sustainable development as set out by the Planning and Development Act 2000 (as amended).</p>	<p><i>the County in accordance with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and Circular PL02/2014 (August 2014), in particular when preparing plans and programmes and assessing development proposals. For lands identified as being at risk of flooding in (but not limited to) the Strategic Flood Risk Assessment, a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, is required, demonstrating compliance with the aforementioned Guidelines or any updated version of these Guidelines, paying particular attention to residual flood risks and any proposed site specific flood management measures.'</i></p> <p>Infrastructure and Environmental Quality, Green Infrastructure and Economic Development & Tourism strategies within the plan all incorporate flood risk assessment and management and the protection of biodiversity into objectives.</p>
<p>Kildare County Development Plan 2017-2013 (KCC, 2017a)</p>	<p>n/a</p>	<p>Policy NH4: <i>'Support the conservation and enhancement of Natura 2000 Sites including any additional sites that may be proposed for designation during the period of this Plan and to protect the Natura 2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site'</i></p> <p>Policy NH6: <i>'Ensure an Appropriate Assessment, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site,</i></p>

Plan	Conflicting Policies	Protective Policies
		<p><i>either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct, indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest'</i></p> <p>Policy NH11: <i>'Ensure that development does not have a significant adverse impact on rare and threatened species, including those protected under the Wildlife Acts 1976 and 2012, the Birds Directive 1979 the Habitats Directive 1992 and the Flora Protection Order species'</i></p> <p>Policy WC5: <i>'Promote the amenity, ecological and educational value of the canals and rivers within the county while at the same time ensuring the conservation of their fauna and flora, and protection of the quantity and quality of the water supply'</i></p> <p>Energy and Communications, Infrastructure, Rural Development, Architectural and Archaeological Heritage and Landscape, Recreation and Amenity all incorporate flood risk assessment and management and the protection of biodiversity into objectives.</p>
<p>Celbridge Local Area Plan 2017-2023 (KCC, 2017b)</p>	<p>Potential future development of the lands in the vicinity of Hazelhatch/Celbridge rail station for development.</p>	<p>Objective NH01.1: <i>'To ensure an Appropriate Assessment, in accordance with Article 6(3) and Article 6(4) of the Habitats Directive and with DEHLG guidance (2009), is carried out in respect of any plan or project not directly connected with or necessary to the management of a Natura 2000 site to determine the likelihood of the plan or project having a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects and to ensure that projects which may give rise to significant cumulative, direct,</i></p>

Plan	Conflicting Policies	Protective Policies
		<p><i>indirect or secondary impacts on Natura 2000 sites will not be permitted (either individually or in combination with other plans or projects) unless for reasons of overriding public interest'</i></p> <p>Objective NH01.2: <i>'To identify, protect, conserve and enhance wherever possible, wildlife habitats and species of local importance, not otherwise protected by legislation. Such habitats would include woodland, river, grassland areas and field boundaries (hedgerows, stone walls and ditches). Such features form part of a network of habitats and corridors, which allow wildlife to exist and flourish and contribute to compliance with Article 10 of the Habitats Directive'</i></p>
<p>The 2nd Cycle River Basin Management Plan 2018-2021 (DHPLG, 2018)</p>	<p>n/a</p>	<p>Binding obligations on Dublin City Council, South Dublin City Council and Kildare County Council to achieve good status of surface waters, under the terms of the EU Water Framework Directive 2000/60/EC.</p> <p>Objective WQ01: <i>'Strive to achieve 'good status' in all waterbodies in compliance with the Water Framework Directive, the Eastern River Basin District Management Plan 2009-2015 and the associated Programme of Measures (first cycle) and to cooperate with the development and implementation of the second cycle national River Basin Management Plan.'</i></p>

The National Development Plan 2018-2027 (Government of Ireland, 2018) designates Enhanced Regional Accessibility as one of the National Strategic Investment Priorities in order to maximise the growth potential of regional urban centres. However, the plan also sets biodiversity as a priority and supports compliance with the Habitat's Directive. This compliance will, inevitably, implicate that all in-combination and cumulative potential impacts with other developments are contemplated and mitigated. The in-combination impacts from proposed Project with the National Development Plan 2018-2027 is then deemed null.

All county development plans (Dublin City, South Dublin and Kildare) designate several policies and objectives to the development of transportation such as to support and facilitate the development of

an integrated public transport network. Kildare County Council additionally promotes and supports the upgrading of the Kildare rail line. Development plans through their biodiversity objectives ensure that all developments relating to movement and transport infrastructure are subject to Article 6 EU Habitats Directive Assessment to ensure that there are no likely significant effects on the integrity of any European site(s).

The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high quality status where it exists. There are binding obligations on all Irish local authorities to achieve good status of surface waters, under the terms of the EU Water Framework Directive 2000/60/EC.

The Greater Dublin Area Cycle Network Plan largely concerns upgrade provisions such as signage, traffic management, road markings and minor realignments. The plan has been subject to AA processes and the impacts, which are minor where they cross the DART+ South West Project corridor, are not expected to cause in-combination effects with the proposed Project.

Plans and programmes do not generally identify specifics of arising development, therefore it is difficult to identify likely LSEs. However, several protective policies are in place across these plans aiming to preserve biodiversity and water quality. Furthermore, specific projects arising from plans and programmes will be subject to AA processes. As such, in-combination effects from other plans are not deemed likely.

1.5.2. Projects

A search was conducted of planning applications (projects) using the My Plan map viewer¹⁶, South Dublin County Council planning application map viewer¹⁷, Dublin City planning application search¹⁸ and Kildare County Council Planning Search¹⁹. The search was limited to the five year period preceding the date of issue of this report and excluded retention applications (i.e. typically local-scale residential or commercial developments where an impact has already occurred), incomplete, withdrawn, and refused applications.

Furthermore, a search of An Bord Pleanála's website was completed to identify any relevant applications, including Strategic Infrastructure Development (SID), Strategic Housing Development (SHD), and Part 8 applications in the past three years or in close proximity to the proposed Project.

Key applications are displayed in Table 1.6 and their potential for in-combination impacts discussed.

¹⁶ Available online at <https://viewer.myplan.ie/> Accessed February 2022.

¹⁷ Available online at <https://www.sdcc.ie/en/services/planning/planning-applications/search-and-view/> Accessed February 2022.

¹⁸ Available online at https://mapzone.dublincity.ie/MapZonePlanning/MapZone.aspx?map=PlanningApplication&search=Plan_Ref&tooltip=Plan_Ref Accessed February 2022.

¹⁹ Available online at <http://webgeo.kildarecoco.ie/public/planning/171> Accessed February 2022.

Table 1.6: Planning Search Results – Projects

Planning Application Reference Number	Project/ Applicant Name and Proposed Location	Brief Development Description	App. Status	App. Distance from the proposed Project	Date Planning App. Granted	Potential for In-combination effects?
Strategic Infrastructure Development (SID)						
306587	Dublin City Council/	Railway Improvement Works on the Maynooth Line and City Centre enhancements as part of the DART+ Programme.	n/a	Intersects the railway line at Glasnevin	A decision has not yet been made.	The Project undertook public consultation processes in Q2 2021. After this process, the proposed Project will be subject to EIA and AA processes, if required. Therefore, as EIA and AA processes are to be carried out, in-combination effects are not deemed likely.
301908	Irish Water/ Townlands of Clonshaugh, Dubber and Newtown, County Fingal and Dublin City	Consent to develop the Greater Dublin Drainage (GDD). Project and Regional Biosolids Storage Facility (RBSF).	Granted	5km northwest	24/04/2019	Appropriate Assessment was carried out which indicated Stage 2 AA was required. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.
309584	Dublin City and Greater Dublin Areas	BusConnects Dublin Core Bus Corridor Projects	Consultation	Intersects the Proposed Project	n/a	Development has not yet been granted, however there is potential for in-combination impacts as a pathway to European sites has been identified.
Strategic Housing Development (SHD)						
SD198/0007	South Dublin Council/ lands at the junction of New Nangor Road and Fonthill Road	Development comprising of 93 units and all associated landscaping and site	Pending	1.1km south	A decision has not yet been made.	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites and that Stage 2 AA was not

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	South to the east, Old Nangor Road to the south and Cherrywood Crescent to the west, in Clondalkin, Dublin 22	development works.				required, As such, in-combination effects are not deemed likely.
308871	Former Steelworks Site at 32A, 32B, 33, 34 & 35 James Street, Dublin 8.	Demolition of existing buildings on site, construction of 189 no. Build to Rent apartments and associated site works.	Granted (with conditions)	0.7km southeast	12/04/2021	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites and that Stage 2 AA was not required, As such, in-combination effects are not deemed likely.
308875	Phibsborough Shopping Centre and 345-349 North Circular Road, Dublin 7.	Alterations to previously permitted Reg. Ref.: 2628/17 and ABP-300241-18 to now provide 321 no. Build to Rent shared accommodation bed spaces and associated site works.	Granted (with conditions)	0.4km southwest	12/04/2021	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites and that Stage 2 AA was not required, As such, in-combination effects are not deemed likely.
308905	Glasnevin Hill, Glasnevin, Dublin 9.	Demolition of existing vacant motor vehicle showroom and no. 38	Granted (with conditions)	0.9km north	13/04/2021	Appropriate Assessment was carried out which indicated Stage 2 AA was required. Where mitigation measures are outlined and undertaken,

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		Glasnevin Hill, construction of 101 no. apartments and associated site works.				no in-combination effects are deemed likely.
308917	Former Player Wills site and undeveloped Land in Ownership of Dublin City Council, South Circular Road, Dublin 8.	Demolition of all buildings excluding the original fabric of the former Player Wills Factory, construction of 492 no. Build to Rent apartments, 240 no. Build to Rent shared accommodation along, creche and associated site works.	Granted (with conditions)	1.6km southeast	15/04/2021	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites and that Stage 2 AA was not required, As such, in-combination effects are not deemed likely.
311959	CWTC Multi Family ICAV/326-328 South Circular Road and Donore Avenue, Dublin 8	Demolition of all structures on site, construction of 346 no. residential units (293 no. Build to Rent apartments, 4 no. Build to Sell houses and 49 no. Build to Sell apartment),	Requires further consideration /amendment	2.2km southeast	n/a	Development has not yet been granted, however Appropriate Assessment was carried out which indicated Stage 2 AA was not required. There is no direct hydrological pathway to Natura 2000 sites. No in-combination effects are deemed likely.

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		creche and associated site works				
312290	Greenseed Limited/Park West Avenue and Park West Road, Park West, Dublin 12.	750 no. apartments, creche and associated site work	Granted (with conditions)	0.035km southeast	16/06/2022	Appropriate Assessment was carried out which indicated Stage 2 AA was not required. No in-combination effects are deemed likely.
312295	Majick Hour Limited/43-50 Dolphin's Barn Street, Dublin 8.	Demolition of buildings, construction of 116 no. Build to Rent apartments and associated site works.	Lodged	1.45km southeast	Due to be decided by 20/04/2022	Development has not yet been granted, however Appropriate Assessment was carried out which indicated Stage 2 AA was not required. No in-combination effects are deemed likely.
Part 8 Planning Applications						
PL06S.3067 25	South Dublin County Council and Dublin City Council/ River Poddle Flood Alleviation Scheme	The proposed scheme consists of flood protection works along and adjacent to the River Poddle.	Pending	2.8km southeast	A decision has not yet been made.	Development has not yet been granted, however Appropriate Assessment was carried out which indicated Stage 2 AA was required. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.
P82011.003	Kildare County Council/ Grand canal towpath Between Hazelhatch and Henry Bridge	Development of Heritage trail - upgrading the existing Grand Canal towpath to a new nominally 3m wide	Granted	0.5km southeast	June 2018	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites. As such, in-combination effects are not deemed likely.

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		Heritage Trail between Hazelhatch Bridge as far as the blacktopped road at the east end of the Village of Lyons				
SD188/0011	South Dublin County Council/ Hazelhatch to 12th Lock, Co. Dublin	Grand Canal Greenway – Hazelhatch to 12th Lock will include the following features: 4.6km of shared walking and cycling Greenway along the existing northern Grand Canal towpath; Path widths will vary from 2.5m to 3.5m in width.	Granted	0.05km south	n/a	No connection to any designated European Site was deemed present by ABP. Permission was granted based on several reasons and considerations which additionally stated that the proposed development would not have any LSE's and that as a result, an EIA was not required to be prepared.
Local Authority Planning Applications						
Dublin City Council						
2395/20	Concept Fusion Ltd/ Swimming Pool lands, part of St. Vincent's CBS, Finglas Road, Glasnevin,	The development will consist of the demolition of existing St. Vincent's Swimming Pool (derelict	Granted	0.1km north	17/12/2021	Appropriate Assessment was carried out which indicated Stage 2 AA was required. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.

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	Dublin 11, D11PD28	single storey detached building c.757m sq.) and the construction of 5 no. dwellings.				
3798/18	Marblegate Limited/Blocks 70 & 72, Park West Avenue and Park West Road, Park West, Dublin 12	The proposed development will consist of the conversion, extension and change of use of existing Blocks 70 and 72 from commercial office over ground floor retail/restaurant uses to provide for a residential development with a total of 84 no. apartments over retail/restaurant uses.	Granted	0.3km south	18/10/2018	Development was granted under conditions that water supply, drainage and surface water disposal be in accordance with the requirements of the County Council and associated Codes of Practice. As such, in-combination effects are not deemed likely.
3228/20	O' Flynn Construction Co. Unlimited Company/ Site to the east of Walkinstown Avenue at	10-year permission for a mixed use including part Build to Rent development in 13 no. blocks	Granted	1.15km south	06/04/2021	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites. As such, in-combination effects are not deemed likely.



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	the junction of Walkinstown Avenue and Naas Road	(Blocks A-L) ranging in height from 4-15 storeys over 3 no. basements with a cumulative gross floor area of 168,184.13 sq.m at this 6.921 hectare site.				
3884/06	Niall Molloy/ Former CIE Lands at Carnlough Road, off the New Cabra Road, Cabra, Dublin 7, to include No.s 2 and 4 Carnlough Road.	To include demolition of no.s 2 and 4 Carnlough Road. Permission is sought for the construction of 402 residential units, consisting of 333 no. apartments, 61 no. duplex apartments and 8 no. terraced houses; creche (515.6sq.m) located in Block A; 2 no. retail units (76.1 and 148 sq.m) and	Granted	<100 m east	14/12/06	Development was granted under conditions that water supply, drainage and surface water disposal be in accordance with the requirements of the County Council, that a CMP and waste management plan be prepared. As such, in-combination effects are not deemed likely.

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		civic centre (230sq.m) located in Block H and ancillary development.				
South Dublin City Council						
SD13A/0271	Eircom Ltd./ 3-4, Crag Avenue, Clondalkin Industrial Estate, Clondalkin, Co. Dublin.	Demolition of existing logistics centre and associated ancillary buildings; retention of existing mobile phone mast and ancillary plant; the construction of a two storey data centre with a gross floor area of 43,805sq.m	Granted	0.3km south	21/02/2014	An EIS was prepared and impacts mitigated. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.
SD20A/0283	Microsoft Operations Ireland Ltd./ Grange Castle Business Park, Nangor Road, Clondalkin, Dublin 22.	Construction of a single 1-4 storey Central Administration Building and 2 2-storey (with mezzanine) data centres (DUB14 & DUB15) all to be located west of data centres	Granted	0.7km south	10/05/2021	An EIAR was prepared detailing mitigation measures for potential impacts. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.

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		DUB9, DUB10, DUB12 & DUB13 within the MS campus.				
SD078/0012	South Dublin County Council/ Grand Canal from 12th Lock to Inchicore, Lucan, Co. Dublin.	Proposed Green Pedestrian and Cycle Route: along the Grand Canal from 12th Lock to Inchicore incorporating 110kV ducting.	Granted	0.5km south	09/04/2015	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites. As such, in-combination effects are not deemed likely.
SD17A/0397	Vallycrony Limited/ Cloverhill Road, Raheen, Dublin 22.	Residential development of 85 all on a site area of 2.91 ha.	Granted	0.1km north	10/05/2018	Permission was granted on the basis that an EIAR be carried out. Where mitigation measures are outlined and undertaken, no in-combination effects are deemed likely.
SDZ21A/0007	Townland of Gollierstown, Adamstown, Lucan, Co Dublin	Phase Two of the Adamstown District Centre and consists of 17,764sq.m (gross floor area, including car park and storage) of residential development to be constructed in 2 buildings	Granted		n/a	Development has undergone Screening for Appropriate Assessment which indicated no adverse impacts on Natura 2000 sites. As such, in-combination effects are not deemed likely.



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		ranging in height from 4 to 9 storeys; a total of 185 apartments				
Kildare County Council						
201158	Dermot Kerins/ Stacumny, Celbridge, Co. Kildare	All works associated with a plant nursery producing plants in pots & on open ground, including the construction of a potting & dispatch shed, 1 no. poly tunnel, 4 no. container style structures comprising admin office, sales office, staff canteen and toilet/sanitary facilities, car parking etc.	Granted (with conditions)	0.2km southeast	09/03/2021	Permission was granted with planning conditions. Where measures are outlined and undertaken, no in-combination effects are deemed likely.