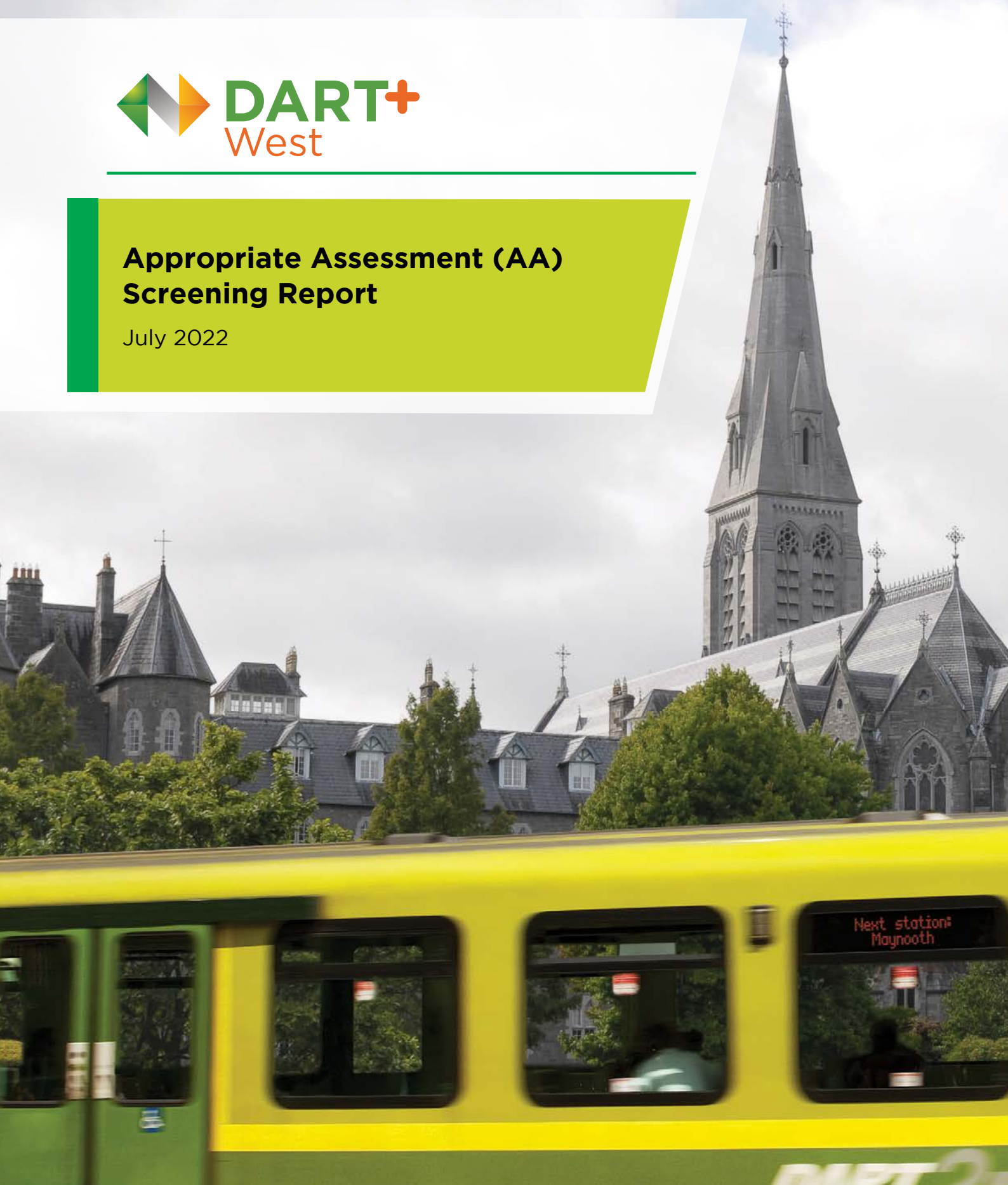




Appropriate Assessment (AA) Screening Report

July 2022



Tionscadal Éireann
Project Ireland
2040



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APPENDIX A Likely Zone of Impact

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1. INTRODUCTION

1.1 Background

Córas Iompair Éireann, hereafter referred to as CIÉ or 'the Applicant' (and including all references to Irish Rail or Iarnród Éireann) is applying to An Bord Pleanála ("the Board") for a Railway Order ("RO") for the DART+ West project (hereafter also referred to as "the proposed development") under the Transport (Railway Infrastructure) Act 2001 (as amended and substituted) ("the 2001 Act") and the European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743/2021) and in accordance with EU law.

IDOM and ROD have been commissioned by the Applicant to prepare the RO application including this Appropriate Assessment (AA) Screening Report for the proposed development in accordance with relevant EU and national legislation, associated guidelines and standards.

The requirements arising out of Article 6(3) of Council Directive 92/43/EEC of 21 August 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") in relation to appropriate assessment are transposed into Irish law by Part XAB, Appropriate Assessment (sections 177R to 177AE of the Planning and Development Act 2000 (as amended)) and by the European Communities (Birds and Natural Habitats) Regulations 2011 as amended¹ (S.I. No.477 of 2011) ("the Habitats Regulations"), including Part 5 thereof). In accordance with Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act, 2000 (as amended) ("The Planning and Development Acts"), this AA Screening Report was prepared to assess whether or not the proposed development, either individually or in combination with other plans or projects, was likely to have a significant effect on one or more sites of Community importance for nature conservation ("European sites").

This document comprises the AA Screening Report in respect of the proposed development and was prepared by ROD on behalf of the Applicant and in accordance with the requirements of the Habitats Directive, the Habitats Regulations and the Planning and Development Acts. The aim of this AA Screening Report is to inform and assist the Competent Authority in carrying out its AA Screening Assessment by determining whether or not the proposed development, either individually or in combination with other plans and projects, has the potential to significantly affect one or more European sites in view of their Conservation Objectives.

It is the considered opinion of ROD, as the author of this AA Screening Report, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on three European sites, namely the Rye Water Valley/Carton SAC, the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA, in view of their Conservation Objectives, and, therefore, that AA is required in respect of the proposed development.

1.2 Competent Experts

This AA Screening Report was prepared by ROD Ecologist Patrick O'Shea. Patrick holds a Bachelor's degree in Botany from Trinity College Dublin and an MSc in Ecological Management and Conservation Biology from Queen's University Belfast. He is a full member of the Chartered Institute of Ecological and Environmental Management (CIEEM) and has 9 years' experience in ecological consultancy.

A hydrogeological assessment was carried out by Alex Jones and used to inform this assessment. Alex Jones is a Chartered Geologist specialising in Hydrogeology. Alex Jones holds an MSc in Environmental Hydrogeology and a BSc (Hons) in Environmental Science. He is employed as a Chartered Senior

¹ Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.

Hydrogeologist with JBA and has 13 years' experience in the evaluation of development impacts for developers, regulators, and other public bodies.

1.3 Legislative Context

Council Directive 92/43/EEC of the 21st May 1992 on the conservation of natural habitats of wild fauna and flora ("the Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of the 30th November 2009 on the conservation of wild birds ("the Birds Directive") list habitats and species which are, in a European context, important for conservation and in need of protection. This protection is afforded in part through the designation of sites which support significant examples of habitats or populations of species. ("European sites"). Sites designated for wild birds are termed "Special Protection Areas" (SPAs) and sites designated for natural habitat types or other species are termed "Special Areas of Conservation" (SACs). The complete network of European sites is referred to as "Natura 2000".

In order to ensure the protection of European sites in the context of land use planning and development, Article 6(3) of the Habitats Directive provides for the assessment of the implications of plans and projects for European sites, as follows:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site² 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."

In Case C-323/17 [§34], *People Over Wind*, the Court of Justice of the European Union ('the CJEU') referred to the nature of the test to be applied in making a screening determination as follows:

"[...] it is settled case-law that Article 6(3) of the Habitats Directive makes the requirement for an appropriate assessment of the implications of a plan or project conditional on there being a probability or a risk that the plan or project in question will have a significant effect on the site concerned. In the light, in particular, of the precautionary principle, such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have a significant effect on the site concerned (judgment of 26 May 2011, Commission v Belgium, C-538/09, EU:C:2011:349, paragraph 39 and the case-law cited). The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project (see, to that effect, judgment of 21 July 2016, Orleans and Others, C-387/15 and C-388/15, EU:C:2016:583, paragraph 45 and the case-law cited)."

Article 7 of the Habitats Directive provides that the provisions of, *inter alia*, Article 6(3) are to apply to SPAs under Directive 2009/147/EC (the "Birds Directive").

As stated, the requirements arising out of Article 6(3) of the Habitats Directive are transposed into Irish law by Part XAB of the 2000 Act and by the European Communities (Birds and Natural Habitats) Regulations 2011 as amended³ (S.I. No.477 of 2011) (the Habitats Regulations), including Part 5 thereof.

The determination of whether or not a plan or project requires AA is referred to as "Stage 1" or "AA Screening". A "Stage 1" or "AA Screening" is completed to determine whether or not the proposed development, either individually or in combination with other plans or projects, in view of best scientific knowledge, is likely to have

² Including, where applicable, 'sites'.

³ Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.

a significant effect on areas designated as being of European importance for nature conservation (“European sites”), thereby enabling the Applicant, to fulfil its obligations under Article 6(3) of the Habitats Directive.

As set out above, it is the considered opinion of ROD, as the author of this AA Screening Report, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on three European sites, namely the Rye Water Valley/Cartron SAC, the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA, in view of their Conservation Objectives, and, therefore, that AA is required in respect of the proposed development.

Article 6(3) of the Habitats Directive specifies that AA must be undertaken by the “competent national authorities”. In Ireland, the “competent authority” is the relevant planning authority for each plan or project, e.g. the local authority or An Bord Pleanála. Consequently, the responsibility for carrying out AA Screening lies solely with the competent authority. In that respect, the AA Screening Report is not in itself an AA Screening Assessment but provides the competent authority with the information it needs in order to carry out its AA Screening.

1.4 Screening Methodology

At this stage of the process, the AA Screening Report assesses the potential effects from the plan or project on the European sites within the likely zone of impact and evaluates them in view of the sites’ Conservation Objectives.

This AA Screening Report has had regard inter alia to the following matters⁴:

- 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(s) either individually or in combination with other plans or projects.
- It is not necessary, in order to trigger the requirement to proceed to stage 2 AA that the proposed development will ‘definitely’ have significant effects on the protected site, but such a requirement will arise if it is a ‘mere probability’ that such an effect exists. The requirement to carry out an AA will be satisfied if there is a ‘probability or a risk’ that the proposed development will have ‘significant effects’ on (a) European site(s).
- Consequent upon the application of the precautionary principle, such a ‘risk’ will be found to exist if ‘it cannot be excluded on the basis of objective information’ that the particular proposed development ‘will have significant effects’ on (a) European site(s).
- An AA will be required if, on the basis of objective information, a ‘significant effect’ on a European site ‘cannot be excluded’. An AA will not be required if, on the basis of objective information, a ‘significant effect’ on (a) European site(s) ‘can be excluded’.
- In the case of ‘doubt as to the absence of significant effects’ an AA must be carried out.
- The requirement to conduct an AA will arise where, at the screening stage, it is ascertained that the particular development is ‘capable of having any effect’ (albeit this must be any ‘significant effect’) on (a) European site(s).
- The ‘possibility’ of there being a ‘significant effect’ on (a) European site(s) will give rise to a requirement to carry out an AA 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.
- In order to meet the threshold of likelihood of significant effect, the word ‘likely’ in Article 6(3) means less than the balance of probabilities. The test does not require any ‘hard and fast evidence’ that such a significant effect was likely. It merely has to be shown that there is a ‘possibility’ that this significant effect is likely.

⁴ See Eoin Kelly v. An Bord Pleanála [2019] IEHC 84; Kelly v. An Bord Pleanála [2014] IEHC 400; Connelly v. An Bord Pleanála [2018] IESC 31; [2018] ILRM 453.

- 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.
- Plans or projects or applications for developments which have no appreciable effect on European sites are excluded from the requirement to proceed to AA. If all applications for permission for proposed developments capable of having *any effect whatsoever* on such sites were to be caught by Article 6(3) activities on or near the site would risk being impossible by reason of legislative overkill.

While the threshold at the screening stage of Article 6(3) is very low nonetheless it is a threshold which must be met before it is necessary to proceed to the stage 2 AA

Accordingly, best practice in undertaking AA Screening involves five steps as follows:

1. The first step involves gathering the information and data necessary to carry out a screening assessment. These include, but are not limited to, the details of all phases of the plan or project, environmental data pertaining to the area in which the plan or project is located, e.g. rare or protected habitats and species present or likely to be present, and the details of the European sites within the likely zone of impact.
2. The second step involves examining the information gathered in the first step and a scientific analysis of the potential impacts of the project on the receiving environment, particularly the European sites in the likely zone of impact.
3. The third step evaluates the impacts analysed in the second step against the Conservation Objectives of the relevant European sites, thereby determining whether or not those impacts constitute "likely significant effects", within the meaning of Article 6(3) of the Habitats Directive.
4. The fourth step involves considering the potential for likely significant effects to arise from the combination of the impacts of the plan or project with those of other plans or projects. If it is determined in the third step that Stage 2 (AA) is required, consideration of potential cumulative impacts may be deferred to that stage.
5. The last step involves the issuing of a statement of the determination of the AA Screening. Notwithstanding the recommendation made in the AA Screening Report, the responsibility for completing this step lies solely with the competent authority.

The following guidance documents informed the assessment methodology:

- EC (2018) Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. European Commission, Brussels.
- EC (2021) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Environment Directorate-General of the European Commission.
- DEHLG (2010) Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2010) Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular Letter NPWS 1/10 & PSSP 2/10. National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.
- OPR (2021) *Practice Note PN01: Appropriate Assessment Screening for Development Management*. Office of the Planning Regulator, Dublin.

1.5 Ecological Assessment

In order to fully inform this AA Screening Report in respect of the proposed development, it was necessary to establish the baseline ecological conditions in the receiving environment, particularly with regard to European sites

1.5.1 Desk Study

During preparation of the AA Screening Report, a desk study was undertaken. The statutory consultee, the National Parks & Wildlife Service (NPWS), provided data on designations of sites, habitats, and species (including birds) of conservation interest. This included reports pursuant to Article 17 of the Habitats Directive⁵ (NPWS, 2019 a,b,c) and the Site Synopses, Natura 2000 Standard Data Forms and Conservation Objectives (including supporting documents) for the relevant European sites.

The desk study involved thorough reviews of existing information relating to ecology in the vicinity of the proposed development. A number of web-based geographic information systems (GISs) were used to obtain information relating to the natural environment surrounding the proposed development. These included the NPWS *Map Viewer* (NPWS, 2021b), which provided information on the locations of protected sites, the National Biodiversity Data Centre's *Biodiversity Maps* (NBDC, 2021), which provided recent and historic records of rare and protected species in the area, and Ordnance Survey Ireland's *GeoHive*, which provided additional information on the wider environment.

The desk study also included a review of available ecological data from the following sources:

- Altemar Marine & Environmental Consultancy (2020) *Ecological Impact Assessment for a proposed development at the Old School House Site, Porterstown Road, Clonsilla, Dublin 15*. Report prepared for OSH Ventures Limited.
- BEC Consultants (2013) *Ecological Study of the Royal Canal between Talbot Bridge and Maynooth Train Station*. Report prepared for Waterways Ireland.
- Biosphere Environmental Services (2007) *Dunboyne M3 Commuter Rail Environmental Impact Assessment: Terrestrial Ecology*. Report prepared for PM Group.
- Dromey, M., Johnston, B, Nairn, R. (1990) *Ecological Survey of the Royal Canal, Final Report*. Report prepared for the Office of Public Works.
- Ecoserve Ecological Consultancy Services (2011) *An Ecological Survey of the Grand and Royal Canals in Dublin*. Report prepared for Waterways Ireland.
- Environmental Impact Services (2011a) *Natura Impact Statement for FAB 24C Conversion*. Report prepared for Intel Ireland.
- Environmental Impact Services (2011b) *Environmental Impact Statement for proposed Intel FAB 24C Project, Collinstown Industrial Park, Leixlip, Co. Kildare*. Report prepared for Intel Ireland.
- Fingal County Council (2020) *Kellystown Local Area Plan*. Fingal County Council.
- Flynn, Furney Environmental Consultants (2009) *Royal Canal: Dublin Otter Habitat Survey*. Report prepared for Waterways Ireland.
- Intel Ireland (2017) *The Remarkable Rye River Publication*. Information Booklet.
- JBA Consulting (2016) *Office of Public Works Arterial Drainage Maintenance Works – Ryewater Arterial Drainage Scheme*. Report prepared for the Office of Public Works.
- McCarthy Keville O'Sullivan (2018) *Ecological Assessment: Survey of the Royal Canal from Spencer Dock to Blanchardstown, Co. Dublin*. Report prepared for Waterways Ireland.
- McCarty Keville, O'Sullivan (2015) *Ecological Impact Assessment of the Greater Dublin Area Cycle Network Plan on Royal Canal pNHA from Dublin City Spencer Dock to Maynooth*. Report prepared for National Transport Authority, Dublin City Council.
- Moorkens, E. (2016) *Molluscan Survey of potential Vertigo habitats along the Royal Canal from Blanchardstown to the Dublin/Kildare Border*. Report prepared for Fingal County Council.
- Murphy, M. (2020) *Correspondence re: Draft Local Area Plan for Kellystown, Dublin 15 2020-2026. Planning Ref: FP2020/052 Kellystown*. Development Applications Unit, Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media.
- Natura Environmental Consultants (2018a) *Royal Canal Urban Greenway Biodiversity Assessment*. Report prepared for Fingal County Council.

⁵ Under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive.

- Natura Environmental Consultants (2018c) *Royal Canal Urban Greenway Biodiversity Assessment*. Report prepared for Fingal County Council.
- ROD (2021) *Royal Canal Premium Cycle Route – Phase IV Phibsborough to Ashtown, Ecological Impact Assessment*. Report prepared for National Transport Authority, Dublin City Council.
- Scott Cawley (2016) *Natura Impact Statement for St. Pauls College, Raheny*. Report prepared for Crekav Trading GP Ltd.
- Scott Cawley (2014) *Kilcock Habitat Survey and Green Infrastructure Mapping*. Report prepared for Kildare County Council and The Heritage Council.
- Whitehall Environmental (2020) *Ecological Impact Assessment (EcoIA) of a Proposed Housing Development (SHD) at Cross Guns Bridge, Phibsborough, Dublin 7*. Report prepared for Bindford Ltd.
- Whitehall Environmental (2020) *Natura Impact Statement of a Proposed Strategic Housing Development at Cross Guns Bridge, Phibsborough, Dublin 7*. Report prepared for Bindford Ltd.

1.5.2 Assessment

Once established, the ecological baseline in the receiving environment was used to inform the assessment of the ecological effects likely to arise from the proposed development, particularly with regard to European sites. Any assumptions that were made in view of gaps in the ecological data were made in accordance with the precautionary principle.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Overview

On the Maynooth and M3 Parkway rail lines, DART+ will introduce electrified high-capacity trains at increased frequency for all stations between Maynooth / M3 Parkway and Connolly and Spencer Dock stations in Dublin city centre (40 km corridor). The key infrastructural elements of the DART+ West project includes:

- Electrification and re-signalling of the Maynooth and M3 Parkway lines (approximately 40 km in length).
- Capacity enhancements at Connolly Station (to include modifications to junctions and the station) to facilitate increased train and passenger numbers.
- Provision of a new Spencer Dock Station, which will better serve the north Docklands area and improve interchange with the Luas.
- Closure of six level crossings and provision of replacement bridges and traffic management enhancements where required.
- Construction of a new DART depot facility west of Maynooth for the maintenance and parking (stabling) of trains.
- Bridge modifications and track lowering interventions at existing rail over bridges and along the alignment where there are insufficient clearances for the overhead electrification equipment.
- Substations, electrical buildings and all other civil and ancillary works as necessary to accommodate the project.
- Main Storage and Distribution Centre.

The proposed development drawings are presented in Appendix B.

2.2 Receiving Natural Environment

The receiving environment is dominated by the existing railway corridor which passes through both urban and rural areas. The railway line runs parallel to the Royal Canal and is generally lined with managed and unmanaged verges, scrub, and hedgerows or treelines outside the urban areas. The railway corridor has areas of seminatural habitat along it which can provide a refuge for wildlife in an otherwise relatively managed landscape. However, railway corridors can also act as conduits for the spread of invasive species, a source of pollution, and can lead to direct impacts on species such as badgers and otters. Further west, outside Dublin City, the landscape becomes more open, and the main land use is agricultural. A number of stately homes and golf courses are also present.

The proposed development will cross the Royal Canal, the Rye Water, the River Tolka and a tributary of the River Liffey in Westmanstown, as well as ditches and drains. The proposed development is located within the bounds of the Royal Canal pNHA. The habitats within the immediate vicinity of the proposed development include canal, buildings and artificial surfaces, amenity grassland, flowerbeds and borders, stonewalls and other stonework, hedgerow, treelines, improved agricultural grassland and arable crops. The Royal Canal flows in an easterly direction where it eventually discharges into the River Liffey at North Wall quay, which in turn flows into Dublin Bay.

3. IDENTIFICATION OF LIKELY SIGNIFICANT EFFECTS

3.1 Establishing the Likely Zone of Impact

Section 3.2.3 of DEHLG (2010) outlines the procedure for selecting the European sites to be considered in AA. It states that European sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and cumulative effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- All European sites within or immediately adjacent to the plan or project area.
- All European sites within the likely zone of impact of the plan or project.
- In accordance with the Precautionary Principle, all European sites for which there is doubt as to whether or not they might be significantly affected.

The “likely zone of impact” of a plan or project is the geographic extent over which significant ecological effects are likely to occur. In the case of plans, this zone should extend to a distance of 15 km in all directions from the boundary of the plan area. In the case of projects, however, the guidance recognises that the likely zone of impact must be established on a case-by-case basis, with reference to the following key variables:

- The nature, size and location of the project.
- The sensitivities of the ecological receptors.
- The potential for cumulative effects.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent features of interest.

Having regard to the aforementioned key variables, the likely zone of impact of the proposed development was defined as:

- The entire area within 550 m of the proposed development boundary.
- All watercourses within 550 m of the proposed development boundary including a 10 m buffer, downstream as far as and including the Liffey Estuary Lower Transitional Waterbody, the Tolka Estuary Transitional Waterbody and the Broadmeadow Water Transitional Waterbody.

The buffer was defined as 550 m around the proposed development which is the precautionary flushing distance for waterbirds informed by the sensitivity of different species, the potential for visual and noise disturbance, and the ambient disturbance levels (Cutts et al., 2009; Cutts et al., 2013). The use of amenity grassland by Light-bellied Brent Geese has been considered, and the 550m buffer includes all areas of amenity grassland in the vicinity of the proposed development. Any potential Light-Bellied Brent Goose feeding areas outside this buffer are screened by buildings, walls and natural boundaries which will act as effective barriers to noise and visual disturbance.

The watercourses within 550 m of the proposed development boundary, and downstream as far as their transitional waterbodies, is the extent to which hydrological impacts could potentially occur downstream of the proposed development in the River Liffey, River Tolka and Dublin Bay⁶.

In relation to impacts on groundwater and groundwater dependent species and habitats, *Guidelines on Procedures for Assessment and Treatment of Geology and Hydrogeology for National Road Schemes* (TII, 2008) recommends that for National roads, the study area should be 250 m either side of the centreline and notes that professional judgement must be applied in assessing whether the study area needs to be extended. The Hydrogeological Assessment undertaken to inform the AA Screening Report concluded that

⁶ As defined in Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy (the Water Framework Directive), transitional waters are as bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.

the proposed development would result in imperceptible to slight impacts on the groundwater system immediately surrounding the depot. These effects will be attenuated with distance from the depot. In effect, any effects on groundwater flows further away will be less than slight to imperceptible. All areas where track lowering is proposed, for the purposes of assessing effects on the Rye Water Valley/ Carton SAC, concluded that the impact of the track lowering at the location of the works is imperceptible. Therefore, the buffer of 550 m exceeds the limit for potential effects on ground water flows.

A geographical representation of the Zol was generated in ArcGIS 10.4 using the proposed development boundary, publicly available basemaps (OpenStreetMap) and Environmental Protection Agency (EPA) shapefiles. This was used in combination with NPWS shapefiles to identify the boundaries of European sites.

Six European sites occur within the likely zone of impact of the proposed development. These sites are the Rye Water/ Carton SAC, the South Dublin Bay & River Tolka Estuary SPA, the North Bull Island SPA, the North Dublin Bay SAC, the Malahide Estuary SAC, and the Malahide Estuary SPA. The South Dublin Bay SAC occurs adjacent to the likely zone of impact. The South Dublin Bay SAC is not considered to be connected to the proposed development as the Great South Wall forms an effective barrier against any potential effects on the integrity of this site.

Table 3-1 below lists all of the European sites which are connected to the proposed development and describes how those sites are connected to the proposed development. There are no connections between the proposed development and any European sites other than those listed in Table 3-1. Detailed descriptions of those sites are given in Section 3.2. The European sites within the likely zone of impact are illustrated in Appendix A.

Table 3-1 European sites located within and adjacent to the likely zone of impact.

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
Rye Water Valley/Carton SAC [001398]	Yes. At its closest point, the existing railway line is within this European Site for a distance of 400 m, at the Rye Water crossing (Louisa Bridge), east of Leixlip. The railway line is immediately adjacent to this European site for a further 230 m west of Louisa Bridge train station. The railway line also passes close to this European site at the Carton Estate over a length of 200 m. However, at this location, it is separated by the Royal Canal, vegetation and the R148. Two new watercourse crossings, a stream diversion and the construction of a flood compensatory storage area are proposed 3.5 km upstream of this site.
South Dublin Bay and River Tolka Estuary SPA [004024]	Yes. The shortest absolute distances from the proposed development to this site are 750 m east to the Tolka Estuary and 2.2 km south-east to Sandymount Strand. The shortest distance from the proposed development to the site via a hydrological connection is 3.7 km east (through the Royal Canal and the River Liffey) to Dublin Port which is within the likely zone of impact. There is a potential pathway through the existing surface water drainage network between the proposed development and this site through the River Tolka, which has a hydrological distance of 1.1 km. Therefore, the effective distance to the site is 1.1 km.
North Bull Island SPA [004006]	Yes. The shortest absolute distance from the proposed development to this site is 3.5 km north-east. The shortest distance from the proposed development to the site via a hydrological connection is 6.2 km east (through the Royal Canal and the River Liffey and across the River Tolka Estuary) to the Bull Wall, which is within the likely zone of impact. There is a potential pathway through the existing surface water drainage network between the proposed development and this site through the River Tolka and River Tolka Estuary, which has a hydrological distance of 4.3 km. Therefore, the effective distance to the site is 4.3 km.
North Dublin Bay SAC [000206]	Yes. The shortest absolute distance from the proposed development to this site is 3.5 km north-east. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is 6.2 km north-east (down the Royal Canal and the River Liffey and across the River Tolka Estuary), which is within the likely zone of impact. There is a potential pathway through the existing surface water drainage network between the proposed development and this site through the River Tolka and River Tolka Estuary, which has a hydrological distance of 4.3 km. Therefore, the effective distance to the site is 4.3 km.
Malahide Estuary SAC [000205]	Yes. The shortest absolute distance from the proposed development to this site is 7 km east. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is approximately 10.5 km east (down the Rowelstown Stream and Broadmeadow River), which is within the likely zone of impact. Therefore, the effective distance to the site is 10.5 km.

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
Malahide Estuary SPA [004025]	Yes. The shortest absolute distance from the proposed development to this site is 7 km east. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is approximately 10.5 km east (down the Rowelstown Stream and Broadmeadow River), which is within the likely zone of impact. Therefore, the effective distance to the site is 10.5 km.
South Dublin Bay SAC [000210]	No. This European site is located adjacent to the likely zone of impact, on the opposite side of the Great South Wall. The shortest absolute distance from the proposed development to this site is 2.3km south-east. This distance is over land. The shortest distance from the proposed development to the site via a hydrological connection is 7.2 km south-east, down the Royal Canal and the River Liffey and across the open water of Dublin Bay, beyond the Great South Wall, to an area which is outside the likely zone of impact. Therefore, the effective distance to this European site is 7.2 km. The Great South Wall forms a barrier between the likely zone of impact and the SAC. The Qualifying Interests of the SAC are all habitats, and therefore there are no pathways for effects exist between the proposed development and this European site.

3.2 Site Descriptions

3.2.1 Rye Water Valley/Cartron SAC

The description of the Rye Water Valley/Cartron SAC is based on the Site Synopsis (NPWS, 2013a), Conservation Objectives (NPWS, 2021a) and Natura 2000 Standard Data Form (NPWS, 2019a) for the site.

Site Overview

Rye Water Valley/Cartron SAC is located between Leixlip and Maynooth, in Counties Meath and Kildare, and extends along the Rye Water, a tributary of the River Liffey. The Rye Water in Carton Estate is dammed at intervals, creating a series of lakes. The woods on Carton Estate are mostly old demesne woods with both deciduous and coniferous species. Hairy St. John's-wort (*Hypericum hirsutum*), a species legally protected under the Flora (Protection) Order, 2015, occurs in Carton Estate and there is an old record from the estate for the similarly protected Hairy Violet (*Viola hirta*). However, this latter species has not been recorded from the site in recent years. Another species listed in the Red Data Book, Green Figwort (*Scrophularia umbrosa*), occurs on the site in several locations by the Rye Water. The woods at Carton Demesne are the site of a rare Myxomycete fungus, *Diderma deplanatum*.

The marsh, mineral spring and seepage area found at Louisa Bridge supports a good diversity of plant species. mineral spring found at the site is of a type considered to be rare in Europe and is a habitat listed on Annex I of the E.U. Habitats Directive. The Red Data Book species Blue Fleabane (*Erigeron acer*) is found growing on a wall at Louisa Bridge. Within the woods, Blackcap, Woodcock and Long-eared Owl have been recorded. Little Grebe, Coot, Moorhen, Tufted Duck, Teal and Kingfisher, the latter a species listed on Annex I of the E.U. Birds Directive, occur on and about the lake. The Rye Water is also a spawning ground for Trout and Salmon, and the rare, White-clawed Crayfish (*Austropotamobius pallipes*) has been recorded at Leixlip. The latter two species are listed on Annex II of the E.U. Habitats Directive.

The rare Narrow-mouthed Whorl Snail and Desmoulin's Whorl Snail occur in marsh vegetation near Louisa Bridge. Both are rare in Ireland and in Europe and are listed on Annex II of the E.U. Habitats Directive. The scarce dragonfly, *Orthetrum coerulescens*, has also been recorded at Louisa Bridge. The conservation importance of the site lies in the presence of several rare and threatened plant and animal species, and the presence of petrifying springs, a habitat type listed on Annex I of the E.U. Habitats Directive. The woods found on Carton Estate and their birdlife are of additional interest.

Qualifying Interests of the Site

[7220] Petrifying Springs

[1014] Narrow-mouthed Whorl Snail (*Vertigo angustior*)

[1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Rye Water Valley/Cartron SAC come from continuous urbanization, modification of structures of inland watercourses and forestry.

3.2.2 South Dublin Bay and River Tolka Estuary SPA

The description of the South Dublin Bay and River Tolka Estuary SPA provided here is based on the Site Synopsis (NPWS, 2015a), Conservation Objectives (NPWS, 2015b) and Natura 2000 Standard Data Form (NPWS, 2021b) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2014b).

Site Overview

This site comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dún Laoghaire and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

The site is of ornithological importance as it supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species. Notably, four of the species that regularly occur at this site are listed on Annex I of the Birds Directive, namely Bar-tailed Godwit, Common Tern, Arctic Tern and Roseate Tern. Parts of the site are also designated as the Ramsar Convention site "Sandymount Strand/Tolka Estuary".

Qualifying Interests of the Site

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

[A130] Oystercatcher (*Haematopus ostralegus*)

[A137] Ringed Plover (*Charadrius hiaticula*)

[A141] Grey Plover (*Pluvialis squatarola*)

[A143] Knot (*Calidris canutus*)

[A144] Sanderling (*Calidris alba*)

[A149] Dunlin (*Calidris alpina*)

[A157] Bar-tailed Godwit (*Limosa lapponica*)

[A162] Redshank (*Tringa totanus*)

[A179] Black-headed Gull (*Chroicocephalus ridibundus*)

[A192] Roseate Tern (*Sterna dougallii*)

[A193] Common Tern (*Sterna hirundo*)

[A194] Arctic Tern (*Sterna paradisaea*)

[A999] Wetlands

Being an integral part of the internationally important Dublin Bay complex, the site is important for wintering waterfowl – all counts for wintering waterbirds are five-year mean peaks for the period 1995/96 to 1999/2000. Although birds regularly commute between the south bay and the north bay, recent studies have shown that certain populations which occur in the south bay spend most of their time there.

An internationally important population of Light-bellied Brent Goose (368) occurs regularly and newly arrived birds in the autumn feed on the Eelgrass bed at the Merrion Gates. At the time of designation, the site supported nationally important numbers of a further nine species: Oystercatcher (1,145), Ringed Plover (161), Grey Plover (45), Knot (548), Sanderling (321), Dunlin (1,923), Bar-tailed Godwit (766), Redshank (260) and Black-headed Gull (3,040). Other species occurring in smaller numbers include Great Crested Grebe (21), Curlew (127) and Turnstone (52). Little Egret, a species which has recently colonised Ireland, also occurs at this site.

South Dublin Bay is a significant site for wintering gulls, with a nationally important population of Black-headed Gull, but also Common Gull (330) and Herring Gull (348). Mediterranean Gull is also recorded from here, occurring through much of the year, but especially in late winter/spring and again in late summer into winter.

Both Common Tern and Arctic Tern breed in Dublin Docks, on a man-made mooring structure known as the ESB Dolphin – this is included within the site. Small numbers of Common Tern and Arctic Tern were recorded nesting on this dolphin in the 1980s. A survey in 1995 recorded nationally important numbers of Common Tern nesting here (52 pairs). The breeding population of Common Tern at this site has increased, with 216 pairs recorded in 2000. This increase was largely due to the ongoing management of the site for breeding terns. More recent data highlights this site as one of the most important Common Tern sites in the country with over 400 pairs recorded here in 2007.

South Dublin Bay is an important staging/passage site for a number of tern species in the autumn (mostly late July to September). The origin of many of the birds is likely to be the Dublin breeding sites (Rockabill and the Dublin Docks) though numbers suggest that the site is also used by birds from other sites, perhaps outside the state. This site is selected for designation for its autumn tern populations: Roseate Tern (2,000 in 1999), Common Tern (5,000 in 1999) and Arctic Tern (20,000 in 1996).

Sensitivities of the Site and its Qualifying Interests

As this site is mostly comprised of coastal wetlands and is located directly adjacent to a major city and port, expansion of the city and port poses the greatest threat to its integrity. Reclamation of land from the sea, estuary or marsh represents a direct loss of key Qualifying Interests of the site. Roads, urbanisation, human habitation, industrial and commercial activities and discharges present pressures on the site in terms of disturbance and pollution.

Watersports, walkers, horse riding and non-motorised vehicles also cause persistent disturbance to the birds within the site. Angling, particularly bait collection, causes both disturbance to birds and reduces food availability. The site is also subject to some natural eutrophication pressures.

3.2.3 North Bull Island SPA

The description of the North Bull Island SPA provided here is based on the Site Synopsis (NPWS, 2014a), Conservation Objectives (NPWS, 2015c) and Natura 2000 Standard Data Form (NPWS, 2020a) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2014c).

Site Overview

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th Centuries. It is c. 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses.

The North Bull Island SPA is an excellent example of an estuarine complex and is one of the top sites in Ireland for wintering waterfowl. It is of international importance on account of both the total number of waterfowl and the individual populations of Light-bellied Brent Goose, Black-tailed Godwit and Bar-tailed Godwit that use it. Also of significance is the regular presence of several species that are listed on Annex I of the Birds Directive,

notably Golden Plover and Bar-tailed Godwit, but also Ruff and Short-eared Owl. North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.

Qualifying Interests of the Site

- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
- [A048] Shelduck (*Tadorna tadorna*)
- [A052] Teal (*Anas crecca*)
- [A054] Pintail (*Anas acuta*)
- [A056] Shoveler (*Anas clypeata*)
- [A130] Oystercatcher (*Haematopus ostralegus*)
- [A140] Golden Plover (*Pluvialis apricaria*)
- [A141] Grey Plover (*Pluvialis squatarola*)
- [A143] Knot (*Calidris canutus*)
- [A144] Sanderling (*Calidris alba*)
- [A149] Dunlin (*Calidris alpina*)
- [A156] Black-tailed Godwit (*Limosa limosa*)
- [A157] Bar-tailed Godwit (*Limosa lapponica*)
- [A160] Curlew (*Numenius arquata*)
- [A162] Redshank (*Tringa totanus*)
- [A169] Turnstone (*Arenaria interpres*)
- [A179] Black-headed Gull (*Chroicocephalus ridibundus*)
- [A999] Wetlands

Saltmarsh extends along the length of the landward side of the island and provides the main roost site for wintering birds in Dublin Bay. The island shelters two intertidal lagoons which are divided by a solid causeway. These lagoons provide the main feeding grounds for the wintering waterfowl. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. Green algal mats (*Ulva* spp.) are a feature of the flats during summer. These sediments have a rich macro-invertebrate fauna, with high densities of Lugworm (*Arenicola marina*) and Ragworm (*Hediste diversicolor*).

This site is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose (1,548), Black-tailed Godwit (367) and Bar-tailed Godwit (1,529) - all figures are mean peaks for the five winters between 1995/96 and 1999/2000. The site is one of the most important in the country for Light-bellied Brent Goose. A further 14 species have populations of national importance: Shelduck (1,259), Teal (953), Pintail (233), Shoveler (141), Oystercatcher (1,784), Grey Plover (517), Golden Plover (2,033), Knot (2,837), Sanderling (141), Dunlin (4,146), Curlew (937), Redshank (1,431), Turnstone (157) and Black-headed Gull (2,196). The populations of Pintail and Knot are of particular note as they comprise 14% and 10% respectively of the all-Ireland population totals. Other species that occur regularly in winter include Grey Heron, Little Egret, Cormorant, Wigeon, Goldeneye, Red-breasted Merganser, Ringed Plover and Greenshank. Gulls are a feature of the site during winter and, along with the nationally important population of Black-headed Gull (2,196), other species that occur include Common Gull (332) and Herring Gull (331). While some of the birds also frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes, the majority remain within the site for much of the winter. The wintering bird populations have been monitored more or less continuously since the late 1960s and the site is now surveyed each winter as part of the larger Dublin Bay complex.

The North Bull Island SPA is a regular site for passage waders, especially Ruff, Curlew Sandpiper and Spotted Redshank. These are mostly observed in single figures in autumn but occasionally in spring or winter. The site formerly had an important colony of Little Tern but breeding has not occurred in recent years. Several pairs of Ringed Plover breed, along with Shelduck in some years. Breeding passerines include Skylark, Meadow Pipit, Stonechat and Reed Bunting. The island is a regular wintering site for Short-eared Owl, with up to five present in some winters.

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the North Bull SPA come from the bridge/viaduct located within the site (and the potential for other structures to be built within the site) and from walking, horse riding and non-motorised vehicles within the site. Bait digging/collection, nautical sports and the golf course (all inside the site) and roads, motorways, shipping lanes, continuous urbanisation and industrial or commercial areas (all outside the site) also represent significant pressures/threats to the integrity of this site. Other patterns of habitation within the site represent a lower-level pressure/threat.

3.2.4 North Dublin Bay SAC

The description of the North Dublin Bay SAC provided here is based on the Site Synopsis (NPWS, 2013b), Conservation Objectives (NPWS, 2013c) and Natura 2000 Standard Data Form (NPWS, 2020b) for the site, as well as the Conservation Objectives Supporting Documents (NPWS, 2013g).

Qualifying Interests of the Site

- [1140] Tidal mudflats and sandflats not covered by seawater at low tide
- [1210] Annual vegetation of drift lines
- [1310] Salicornia and other annuals colonising mud and sand
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
- [2110] Embryonic shifting dunes
- [2120] Shifting dunes along the shoreline with *Ammophila Arenaria* (white dunes)
- [2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)
- [2190] Humid dune slacks
- [1395] Petalwort (*Petalophyllum ralfsii*)

Site Overview

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site.

North Bull Island is a sandy spit which formed after the building of the South Wall and Bull Wall in the 18th and 19th centuries. It now extends for about 5 km in length and is up to 1 km wide in places. A well-developed and dynamic dune system stretches along the seaward side of the island. Various types of dunes occur, from fixed dune grassland to pioneer communities on foredunes.

About 1 km from the tip of the island, a large dune slack with a rich flora occurs, usually referred to as the 'Alder Marsh' because of the presence of Alder trees (*Alnus glutinosa*). The water table is very near the surface and is only slightly brackish.

Saltmarsh extends along the length of the landward side of the island. The edge of the marsh is marked by an eroding edge which varies from 20 cm to 60 cm high. The marsh can be zoned into different levels

according to the vegetation types present. Towards the tip of the island, the saltmarsh grades naturally into fixed dune vegetation.

The habitat 'annual vegetation of drift lines' is found in places, along the length of Dollymount Strand, with species such as Sea Rocket (*Cakile maritima*), Oraches (*Atriplex* spp.) and Prickly Saltwort (*Salsola kali*).

The island shelters two intertidal lagoons which are divided by a solid causeway. The sediments of the lagoons are mainly sands with a small and varying mixture of silt and clay. The north lagoon has an area known as the "Salicornia flat", which is dominated by *Salicornia dolichostachya*, a pioneer glasswort species, and covers about 25 ha. The sediments on the seaward side of North Bull Island are mostly sands. The site extends below the low spring tide mark to include an area of the sublittoral zone.

Three rare plant species which are legally protected under the Flora (Protection) Order, 2015 have been recorded on the North Bull Island. These are Lesser Centaury (*Centaureum pulchellum*), Red Hemp-nettle (*Galeopsis angustifolia*) and Meadow Saxifrage (*Saxifraga granulata*). Two further species listed as threatened in the Red Data Book, Wild Clary/Sage (*Salvia verbenaca*) and Spring Vetch (*Vicia lathyroides*), have also been recorded. A rare liverwort, *Petalophyllum ralfsii*, was first recorded from the North Bull Island in 1874 and has recently been confirmed as still present. This species is of high conservation value as it is listed on Annex II of the E.U. Habitats Directive. The North Bull is the only known extant site for the species in Ireland away from the western seaboard.

North Dublin Bay is of international importance for waterfowl. Some of these species frequent South Dublin Bay and the River Tolka Estuary for feeding and/or roosting purposes (mostly Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Sanderling and Dunlin). The tip of the North Bull Island is a traditional nesting site for Little Tern. A high total of 88 pairs nested in 1987. However, nesting attempts have not been successful since the early 1990s. A well-known population of Irish Hare is resident on the island.

The invertebrates of the North Bull Island have been studied and the island has been shown to contain at least seven species of regional or national importance in Ireland.

The main land uses of this site are amenity activities and nature conservation. The North Bull Island is the main recreational beach in Co. Dublin and is used throughout the year. Much of the land surface of the island is taken up by two golf courses. Two separate Statutory Nature Reserves cover much of the island east of the Bull Wall and the surrounding intertidal flats. The site is used regularly for educational purposes. North Bull Island has been designated a Special Protection Area under the E.U. Birds Directive and it is also a statutory Wildfowl Sanctuary, a Ramsar Convention site, a Biogenetic Reserve, a Biosphere Reserve and a Special Area Amenity Order site.

This site is an excellent example of a coastal site with all the main habitats represented. The site holds good examples of nine habitats that are listed on Annex I of the E.U. Habitats Directive; one of these is listed with priority status. Several of the wintering bird species have populations of international importance, while some of the invertebrates are of national importance. The site contains a number of rare and scarce plants including some which are legally protected. Its proximity to the capital city makes North Dublin Bay an excellent site for educational studies and research.

Sensitivities of the Site and its Qualifying Interests

As this site is located directly adjacent to a major city and port, expansion of the city and port poses the greatest threat to its integrity. Reclamation of land from the sea, estuary or marsh represents a direct loss of key QIs of the site. Roads, urbanisation, human habitation, industrial and commercial activities and accumulation of organic material present pressures on the site in terms of disturbance and pollution. Walkers, horse riding and non-motorised vehicles also cause persistent disturbance to the birds within the site.

3.2.5 Malahide Estuary SAC

The description of the Malahide Estuary SAC provided here is based on the Site Synopsis (NPWS, 2017a), Conservation Objectives (NPWS, 2013d) and Natura 2000 Standard Data Form (NPWS, 2020c) for the site, as well as the Conservation Objectives Supporting Documents (NPWS, 2013h).

Qualifying Interests of the Site

- [1140] Tidal mudflats and sandflats not covered by seawater at low tide
- [1310] Salicornia and other annuals colonising mud and sand
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
- [2120] Shifting dunes along the shoreline with *Ammophila Arenaria* (white dunes)
- [2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)

Site Overview

Malahide Estuary is situated immediately north of Malahide and east of Swords in Co. Dublin. It is the estuary of the River Broadmeadow. The site is divided by a railway viaduct which was built in the 1800s.

The outer part of the estuary is mostly cut off from the sea by a large sand spit, known as 'the island'. The outer estuary drains almost completely at low tide, exposing sand and mud flats. There is a large bed of Eelgrass (Dwarf Eelgrass, *Zostera noltii*, and Narrow-leaved Eelgrass, *Z. angustifolia*) in the north section of the outer estuary, along with Beaked Tasselweed (*Ruppia maritima*) and extensive mats of green algae (*Enteromorpha* spp., *Ulva lactuca*). Common Cord-grass (*Spartina anglica*) is also widespread in this sheltered part of the estuary.

The dune spit has a well-developed outer dune ridge dominated by Marram Grass (*Ammophila arenaria*). The dry areas of the stabilised dunes have a dense covering of Burnet Rose (*Rosa pimpinellifolia*), Red Fescue (*Festuca rubra*) and species such as Yellow-wort (*Blackstonia Perfoliata*), Autumn Gentian (*Gentianella amarella*), Hound's tongue (*Cynoglossum officinale*), Carline Thistle (*Carlina vulgaris*) and Pyramidal Orchid (*Anacamptis pyramidalis*). Much of the interior of the spit is taken up by a golf course. The inner stony shore has frequent Sea-holly (*Eryngium maritimum*). Well-developed saltmarshes occur at the tip of the spit. Atlantic salt meadow is the principal type and is characterised by species such as Sea-purslane (*Halimolobos portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Arrowgrass (*Triglochin maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*). Elsewhere in the outer estuary, a small area of Mediterranean salt meadow occurs which is characterised by the presence of Sea Rush (*Juncus maritimus*). Below the salt marshes there are good examples of pioneering glasswort (*Salicornia* spp.) swards and other annual species, typified by *S. dolichostachya* and Annual Sea-blite (*Suaeda maritima*).

The inner estuary does not drain at low tide apart from the extreme inner part. Here, patches of saltmarsh and salt meadows occur, with Sea Aster, Sea Plantain (*Plantago maritima*) and Sea Club-rush (*Scirpus maritimus*). Beaked Tasselweed occurs in one of the channels. The inner part of the estuary is heavily used for water sports. A section of the outer estuary has recently been infilled for a marina and housing development.

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Malahide Estuary SAC are from the bridge/ viaduct, reclamation of land from sea/ estuary/ marsh, nautical sports, walking, horse-riding, non-motorised vehicles and motorised vehicles.

3.2.6 Malahide Estuary SPA

The description of the Malahide Estuary SPA is based on the Site Synopsis (NPWS, 2013e), Conservation Objectives (NPWS, 2013f) and Natura 2000 Standard Data Form (NPWS, 2021c) for the site, as well as the Conservation Objectives Supporting Document (NPWS, 2013h).

Qualifying Interests of the Site

- [A005] Great Crested Grebe (*Podiceps cristatus*)
- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
- [A048] Shelduck (*Tadorna tadorna*)
- [A054] Pintail (*Anas acuta*)
- [A067] Goldeneye (*Bucephala clangula*)
- [A069] Red-breasted Merganser (*Mergus serrator*)
- [A130] Oystercatcher (*Haematopus ostralegus*)
- [A140] Golden Plover (*Pluvialis apricaria*)
- [A141] Grey Plover (*Pluvialis squatarola*)
- [A143] Knot (*Calidris canutus*)
- [A149] Dunlin (*Calidris alpina*)
- [A156] Black-tailed Godwit (*Limosa limosa*)
- [A157] Bar-tailed Godwit (*Limosa lapponica*)
- [A162] Redshank (*Tringa totanus*)
- [A999] Wetlands

Site Overview

Malahide Estuary is situated in north Co. Dublin, between the towns of Malahide and Swords. The site encompasses the estuary, saltmarsh habitats and shallow subtidal areas at the mouth of the estuary. A railway viaduct, built in the 1800s, crosses the site and has led to the inner estuary becoming lagoonal in character and only partly tidal. Much of the outer part of the estuary is well-sheltered from the sea by a large sand spit, known as “The Island”. This spit is now mostly converted to golf-course. The outer part empties almost completely at low tide and there are extensive intertidal flats exposed. Substantial stands of eelgrass (both *Zostera noltii* and *Z. angustifolia*) occur in the sheltered part of the outer estuary, along with Tasselweed (*Ruppia maritima*). Green algae, mostly *Ulva* spp., are frequent on the sheltered flats.

This site is of high importance for wintering waterfowl and supports a particularly good diversity of species. It has internationally important populations of Light-bellied Brent Goose (1,104 individuals or 5% of the all-Ireland total) and Black-tailed Godwit (409 individuals or 2.9% of the all-Ireland total) – figures given here and below are mean peaks for the five winters 1995/96-1999/2000. Furthermore, the site supports nationally important populations of an additional 12 species: Great Crested Grebe (63), Shelduck (439), Pintail (58), Goldeneye (215), Red-breasted Merganser (99), Oystercatcher (1,360), Golden Plover (1,843), Grey Plover (201), Knot (915), Dunlin (1,594), Bar-tailed Godwit (156) and Redshank (581). The high numbers of diving ducks reflect the lagoon-type nature of the inner estuary, and this is one of the few sites in eastern Ireland where substantial numbers of Goldeneye can be found.

A range of other species occurs, including Mute Swan (37), Pochard (36), Ringed Plover (86), Lapwing (1,542), Curlew (548), Greenshank (38) and Turnstone (112). The estuary also attracts other migrant wader species such as Ruff, Curlew Sandpiper, Spotted Redshank and Little Stint. These occur mainly in autumn, though occasionally in spring and winter. Breeding birds of the site include Ringed Plover, Shelduck and Mallard. Up

to the 1950s there was a major tern colony at the southern end of Malahide Island. Grey Herons breed nearby and feed regularly within the site.

Malahide Estuary SPA is a fine example of an estuarine system, providing both feeding and roosting areas for a range of wintering waterfowl. The lagoonal nature of the inner estuary is of particular value as it increases the diversity of birds which occur. The site is of high conservation importance, with internationally important populations of Light-bellied Brent Goose and Black-tailed Godwit, and nationally important populations of a further 12 species. Two of the species which occur regularly (Golden Plover and Bar-tailed Godwit) are listed on Annex I of the E.U. Birds Directive.

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Malahide Estuary SPA are from urbanised areas and human habitation, reclamation of land from sea/ estuary/ marsh, paths/ tracks/ cycle tracks and nautical sports.

3.3 Evaluation against Conservation Objectives

Tables 3.2- 3.7 below detail the evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the sites identified in Section 3.1 and described in Section 3.2. As explained in Sections 1.2 and 1.3, AA Screening is carried out in view of the Conservation Objectives of the relevant European sites, which are in turn defined by detailed Attributes and corresponding Targets. Therefore, the evaluation of whether or not a likely effect is significant (in view of the Conservation Objective in question) is made with regard to these Attributes and Targets. Site-specific Conservation Objectives for the Rye Water Valley/ Carton SAC have not to date been developed. However, generic Conservation Objectives apply. For the purposes of the screening, Conservation Objectives for the Qualifying Interests present in the Rye Water Valley/ Carton SAC have been applied from respective Qualifying Interests (in similar conditions) in other SACs, (as recommended by the NPWS).

Table 3-2 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Rye Water Valley/Carton SAC [001398] * = a “priority habitat” in danger of disappearing from the EU.

Qualifying Interest	Conservation Objective as per NPWS (2021a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Petrifying Springs* [7220]	<i>To maintain the conservation condition of Petrifying springs with tufa formation (Cratoneurion) in the Rye Water Valley/ Carton SAC, as per the River Barrow and River Nore SAC [002162] (NPWS, 2011).</i>	<p>The proposed development includes two new watercourse crossings, a stream diversion, and the construction of a flood compensatory storage area 3.5 km upstream of the SAC boundary. These works have the potential alter the hydrological regime within the SAC that could lead to likely significant effects on this Qualifying Interest.</p> <p>In relation to interruption and pollution of groundwater, the Hydrogeological Assessment undertaken to inform this AA Screening Report concluded that:</p> <ul style="list-style-type: none"> • The proposed development would result in imperceptible to slight impacts on the groundwater system immediately surrounding the depot. These effects will be attenuated with distance from the depot. In effect, any effects on groundwater flows further away will be less than slight to imperceptible. The SAC is 3 km downstream and 15 m lower, therefore effects on petrifying springs can be excluded. • All areas where track lowering is proposed, for the purposes of assessing effects on the Rye Water Valley/ Carton SAC, concluded that the impact of the track lowering at the location of the works is imperceptible. <p>The proposed development crosses this SAC at Louisa Bridge and passes close to the SAC in two other areas, however, considering that the railway line is entirely build land and that the works are limited to the construction of catenary poles, the is no pathway for likely significant effects from these minor works.</p>	Yes
Narrow-mouthed Whorl Snail (Vertigo angustior) [1014]	<i>To maintain the favourable conservation condition of Narrow-mouthed Whorl Snail in the Rye Water Valley / Carton SAC, as per the Slieve Tooley / Tormore Island / Loughros Beg Bay SAC [000190] (NPWS, 2015d)</i>	<p>In Ireland, this Qualifying Interest occurs in fen, marsh, dune grassland, salt marsh and flood plain. The proposed development includes two new watercourse crossings, a stream diversion, and the construction of a flood compensatory storage area 3.5 km upstream of the SAC boundary. These works have the potential alter the hydrological regime within the SAC that could lead a reduction in Habitat Quality, Habitat Extent and Optimal Soil Wetness, ultimately leading to a reduction in the Distribution and Occurrence of this Qualifying Interest. Therefore, likely significant effects cannot be excluded.</p> <p>In relation to interruption and pollution of groundwater, the Hydrogeological Assessment undertaken to inform this AA Screening Report concluded that:</p> <ul style="list-style-type: none"> • The proposed development would result in imperceptible to slight impacts on the groundwater system immediately surrounding the depot. These effects will be attenuated with distance from the depot. In effect, any effects on groundwater flows further away will be less than slight to imperceptible. The SAC is 3 km downstream and 15 m lower, therefore effects on petrifying springs can be excluded. • All areas where track lowering is proposed, for the purposes of assessing effects on the Rye Water Valley/ Carton SAC, concluded that the impact of the track lowering at the location of the works is imperceptible. <p>The proposed development crosses this SAC at Louisa Bridge and passes close to the SAC in two other areas, however, considering that the railway line is entirely build land and that the works are limited to the construction of catenary poles, the is no pathway for likely significant effects from these minor works.</p>	Yes
Desmoulin's Whorl Snail (Vertigo moulinsiana) [1016]	<i>To maintain the favourable conservation condition of Desmoulin's Whorl Snail in the Rye Water Valley/ Carton</i>	<p>In Ireland, this Qualifying Interest occurs in fen, marsh, dune grassland, salt marsh and flood plain. The proposed development includes two new watercourse crossings, a stream diversion, and the construction of a flood compensatory storage area 3.5 km upstream of the SAC boundary. These works have the potential alter the hydrological regime within the SAC that could lead a reduction in Habitat Quality, Habitat Extent and Optimal Soil</p>	Yes

Qualifying Interest	Conservation Objective as per NPWS (2021a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	<p>SAC, as per the River Barrow and River Nore SAC [002162] (NPWS, 2011).</p>	<p>Wetness, ultimately leading to a reduction in the Distribution and Occurrence of this Qualifying Interest. Therefore, likely significant effects cannot be excluded.</p> <p>In relation to interruption and pollution of groundwater, the Hydrogeological Assessment undertaken to inform this AA Screening Report concluded that:</p> <ul style="list-style-type: none"> The proposed development would result in imperceptible to slight impacts on the groundwater system immediately surrounding the depot. These effects will be attenuated with distance from the depot. In effect, any effects on groundwater flows further away will be less than slight to imperceptible. The SAC is 3 km downstream and 15 m lower, therefore effects on petrifying springs can be excluded. All areas where track lowering is proposed, for the purposes of assessing effects on the Rye Water Valley/ Carton SAC, concluded that the impact of the track lowering at the location of the works is imperceptible. <p>The proposed development crosses this SAC at Louisa Bridge and passes close to the SAC in two other areas, however, considering that the railway line is entirely build land and that the works are limited to the construction of catenary poles, there is no pathway for likely significant effects from these minor works.</p>	

Table 3-3 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the South Dublin Bay and River Tolka Estuary SPA [004024]

Qualifying Interest	Conservation Objective as per NPWS (2015b)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	<i>"To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA"</i>	Light-bellied Brent Geese feed on grasslands in Dublin City when their main food source in Dublin Bay, eelgrass, becomes exhausted. Areas close to the proposed development which have been identified as Brent Geese feeding sites include Ashington Park, Marin Savage Park and St. Vincent's Primary School. Light-bellied Brent Geese are vulnerable to collision with OHLE. Therefore, likely significant effects cannot be excluded.	Yes
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	<i>"To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA"</i>	The closest suitable habitat for these species is 750m from the proposed development in the River Tolka Estuary. The hydrological distance between the proposed development and the Tolka Estuary is 1.1km, through the existing surface water drainage system and the River Tolka.	No
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	<i>"To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA"</i>	The location, nature and scale of the proposed development are such that any water quality impacts will be very localized and will dissipate in a very short time, before reaching the SPA. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.	No
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	<i>"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."</i>		No
Knot (<i>Calidris canutus</i>) [A143]	<i>"To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Sanderling (<i>Calidris alba</i>) [A144]	<i>"To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Dunlin (<i>Calidris alpina alpina</i>) [A149]	<i>"To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	<i>"To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Redshank (<i>Tringa totanus</i>) [A162]	<i>"To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	<i>"To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA"</i>		No

Qualifying Interest	Conservation Objective as per NPWS (2015b)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Qualifying Interest	Conservation Objective as per NPWS (2015c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Roseate Tern (<i>Sterna dougallii</i>) [A192]	<i>"To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA"</i>	The closest known breeding site for these Qualifying Interests is at the Electricity Supply Board dolphin on the River Liffey between Poolbeg power station and the Pigeon House (c.3 km east of the proposed development). Roosting is known to occur between Martello towers at Sandymount and Williamstown (c. 3.2 km southeast). The locations of breeding and roosting sites are of sufficient distance from the proposed development to ensure that the proposed development does not provide for any effect on the passage population, number of nests, productivity rate, distribution of roosting and breeding sites, prey biomass available, barriers to connectivity or disturbance of Roseate Tern, Common Tern or Arctic Tern within the site. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.	No
Common Tern (<i>Sterna hirundo</i>) [A193]	<i>"To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Arctic Tern (<i>Sterna paradisaea</i>) [A194]	<i>"To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA"</i>		No
Wetlands [A999]	<i>"To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it"</i>	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is <i>"The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation"</i> . As the proposed development will not lead any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective.	No

Table 3-4 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the North Bull Island SPA [004006]

Qualifying Interest	Conservation Objective as per NPWS (2015c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	<i>"To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA"</i>	Light-bellied Brent Geese feed on grasslands in Dublin City when their main food source in Dublin Bay, eelgrass, becomes exhausted. Areas close to the proposed development which have been identified as Brent Geese feeding sites include Ashington Park, Marin Savage Park and St. Vincent's Primary School. Light-bellied Brent Geese are vulnerable to collision with OHLE. Therefore, likely significant effects cannot be excluded.	Yes
Shelduck (<i>Tadorna tadorna</i>) [A048]	<i>"To maintain the favourable conservation condition of Shelduck in North Bull Island SPA"</i>	The closest suitable habitat for these species is 750 m from the proposed development in the River Tolka Estuary. The hydrological distance between the proposed development and the Tolka Estuary is 1.1 km, through the existing surface water drainage system and the River Tolka. The location, nature and scale of the proposed development are such that any water quality impacts will be very localized and will dissipate in a very short time, before reaching the SPA. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.	No
Teal (<i>Anas crecca</i>) [A052]	<i>"To maintain the favourable conservation condition of Teal in North Bull Island SPA"</i>		No
Pintail (<i>Anas acuta</i>) [A054]	<i>"To maintain the favourable conservation condition of Pintail in North Bull Island SPA"</i>		No
Shoveler (<i>Anas clypeata</i>) [A056]	<i>"To maintain the favourable conservation condition of Shoveler in North Bull Island SPA"</i>		No
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	<i>"To maintain the favourable conservation condition of Oystercatcher in North Bull Island SPA"</i>		No
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	<i>"To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA"</i>		No
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	<i>"To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA"</i>		No
Knot (<i>Calidris canutus</i>) [A143]	<i>"To maintain the favourable conservation condition of Knot in North Bull Island SPA"</i>		No
Sanderling (<i>Calidris alba</i>) [A144]	<i>"To maintain the favourable conservation condition of Sanderling in North Bull Island SPA"</i>		No
Dunlin (<i>Calidris alpina alpina</i>) [A149]	<i>"To maintain the favourable conservation condition of Dunlin in North Bull Island SPA"</i>		No
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	<i>"To maintain the favourable conservation condition of Black-tailed Godwit in North Bull Island SPA"</i>	No	

Qualifying Interest	Conservation Objective as per NPWS (2015c)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Qualifying Interest	Conservation Objective as per NPWS (2015d)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	<i>"To maintain the favourable conservation condition of Bar-tailed Godwit in North Bull Island SPA"</i>		No
Curlew (<i>Numenius arquata</i>) [A160]	<i>"To maintain the favourable conservation condition of Curlew in North Bull Island SPA"</i>		No
Redshank (<i>Tringa totanus</i>) [A162]	<i>"To maintain the favourable conservation condition of Redshank in North Bull Island SPA"</i>		No
Turnstone (<i>Arenaria interpres</i>) [A169]	<i>"To maintain the favourable conservation condition of Turnstone in North Bull Island SPA"</i>		No
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	<i>"To maintain the favourable conservation condition of Black-headed Gull in North Bull Island SPA"</i>		No
Wetlands [A999]	<i>"To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it"</i>	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is <i>"The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 1,713 hectares, other than that occurring from natural patterns of variation"</i> . As the proposed development will not lead to any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective.	No

Table 3-5 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the North Dublin Bay SAC [000206]

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	<i>"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC"</i>	<p>These Qualifying Interests occur at least 4.3 km northeast of the proposed development.</p> <p>The location, nature and scale of the proposed development are such that any water quality impacts resulting from the construction or operation of the proposed development would be very localized and would dissipate in a very short time, before reaching the SAC. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.</p>	No
Annual vegetation of drift lines [1210]	<i>"To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC"</i>		No
Salicornia and other annuals colonising mud and sand [1310]	<i>"To restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in North Dublin Bay SAC"</i>		No
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	<i>"To maintain the favourable conservation condition of Atlantic Salt meadows (<i>Glauco-Puccinellietalia maritima</i>) in North Dublin Bay SAC"</i>		No
Mediterranean salt meadows (<i>Juncetalia maritima</i>) [1410]	<i>"To maintain the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritima</i>) in North Dublin Bay SAC"</i>		No
Embryonic shifting dunes [2110]	<i>"To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC"</i>	<p>All of these habitats are located at least 4.3 km from the proposed development. As these habitats are located above the mean high-water mark, any water quality impacts which may arise from the proposed development are extremely unlikely to affect these habitats. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.</p>	No
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	<i>"To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') in North Dublin Bay SAC"</i>		No
Fixed coastal dunes with herbaceous vegetation (grey dune) [2130]	<i>"To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC"</i>		No
Humid dune slacks [2190]	<i>"To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC"</i>		No

Qualifying Interest	Conservation Objective as per NPWS (2013c)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Petalwort <i>Petalophyllum ralfsii</i> [1395]	<i>"To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC"</i>	The nearest occurrence of Petalwort is >7 km northeast of the proposed development in the dunes on the north end of Bull Island (Campbell et al., 2019). Petalwort is a terrestrial species and thus has no hydrological connection to the proposed development. Therefore, the proposed development does not have the potential to significantly affect this Qualifying Interest, in view of its Conservation Objective.	No

Table 3-6 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Malahide Estuary SAC [000205]

Qualifying Interest	Conservation Objective as per NPWS (2017a)	Do the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Mudflats and sandflats not covered by seawater at low tide [1140]	<i>"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Malahide Estuary SAC"</i>	These Qualifying Interests occur at a minimum of 10.5 km east of the proposed development.	No
Salicornia and other annuals colonising mud and sand [1310]	<i>"To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Malahide Estuary SAC"</i>	The location, nature and scale of the proposed development are such that any water quality impacts resulting from the construction or operation of the proposed development would be very localized and would dissipate in a very short time, before reaching the SAC, which is 10.5 km downstream. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.	No
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	<i>"To restore the favourable conservation condition of Atlantic Salt meadows (<i>Glauco-Puccinellietalia maritima</i>) in Malahide Estuary SAC"</i>		No
Mediterranean salt meadows (<i>Juncetalia maritima</i>) [1410]	<i>"To maintain the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritima</i>) in Malahide Estuary SAC"</i>		No
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	<i>"To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') in Malahide Estuary SAC"</i>		No
Fixed coastal dunes with herbaceous vegetation (grey dune) [2130]	<i>"To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation ('grey dunes') in Malahide Estuary SAC"</i>		No

Table 3-7 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Malahide Estuary SPA [004025]

Qualifying Interest	Conservation Objective as per NPWS (2013e)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	<i>"To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA"</i>	Light-bellied Brent Geese feed on grasslands in Dublin City when their main food source in Dublin Bay, eelgrass, becomes exhausted. Areas close to the proposed development which have been identified as Brent Geese feeding sites include Ashington Park, Marin Savage Park and St. Vincent's Primary School. Light-bellied Brent Geese are vulnerable to collision with OHLE. The Malahide Estuary SPA is within the likely zone of impact of the Main Storage and Distribution Centre (MSDC), but not the railway and ancillary infrastructure. The MSDC is entirely within an operational industrial yard. The location, nature and scale of the proposed development are such that any water quality impacts will be very localized and will dissipate in a very short time, before reaching the SPA, which is 10.5km downstream. Therefore, the proposed development does not have the potential to significantly affect Light-bellied Brent Geese, in view of it's Conservation Objective.	No
Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	<i>"To maintain the favourable conservation condition of Great Crested Grebe in the North Bull Island SPA"</i>	These Qualifying Interests occur at least 10.5 km east of the proposed development. The location, nature and scale of the proposed development are such that any water quality impacts resulting from the construction or operation of the proposed development would be very localized and would dissipate in a very short time, before reaching the SPA, which is 10.5 km downstream. Therefore, the proposed development does not have the potential to significantly affect these Qualifying Interests, in view of their Conservation Objectives.	No
Shelduck (<i>Tadorna tadorna</i>) [A048]	<i>"To maintain the favourable conservation condition of Shelduck in the North Bull Island SPA"</i>		No
Pintail (<i>Anas acuta</i>) [A054]	<i>"To maintain the favourable conservation condition of Pintail in the North Bull Island SPA"</i>		No
Goldeneye (<i>Bucephala clangula</i>) [A067]	<i>"To maintain the favourable conservation condition of Goldeneye in the North Bull Island SPA"</i>		No
Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	<i>"To maintain the favourable conservation condition of Red-breasted Merganser in the North Bull Island SPA"</i>		No
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	<i>"To maintain the favourable conservation condition of Oystercatcher in the North Bull Island SPA"</i>		No
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	<i>"To maintain the favourable conservation condition of Grey Plover in the North Bull Island SPA"</i>		No
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	<i>"To maintain the favourable conservation condition of Grey Plover in the North Bull Island SPA"</i>		No

Qualifying Interest	Conservation Objective as per NPWS (2013e)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Qualifying Interest	Conservation Objective as per NPWS (2013h)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Knot (<i>Calidris canutus</i>) [A143]	<i>"To maintain the favourable conservation condition of Knot in the North Bull Island SPA"</i>		No
Dunlin (<i>Calidris alpina alpina</i>) [A149]	<i>"To maintain the favourable conservation condition of Dunlin in the North Bull Island SPA"</i>		No
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	<i>"To maintain the favourable conservation condition of Black-tailed Godwit in the North Bull Island SPA"</i>		No
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	<i>"To maintain the favourable conservation condition of Bar-tailed Godwit in the North Bull Island SPA"</i>		No
Redshank (<i>Tringa totanus</i>) [A162]	<i>"To maintain the favourable conservation condition of Redshank in the North Bull Island SPA"</i>		No
Wetlands [A999]	<i>"To maintain the favourable conservation condition of the wetland habitat in the North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it"</i>	The Conservation Objective for Wetlands is defined by a single Attribute, namely "Habitat area", the Target for which is " <i>The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 765 hectares, other than that occurring from natural patterns of variation</i> ". As the proposed development will not lead to any reduction in the permanent area of this habitat within the site, it has no potential to delay or interrupt the achievement of this Conservation Objective.	No

3.4 Summary of Effects Identified

In Section 3.1, it was established that six European sites, namely the Rye Water Valley/Cartron SAC, the South Dublin Bay and the River Tolka Estuary SPA, the North Bull Island SPA, the North Dublin Bay SAC, the Malahide Estuary SAC and the Malahide Estuary SPA occur within the likely zone of impact. Table 3-2, Table 3-3 and Table 3-4 above established that, in the absence of appropriate mitigation, the proposed development is likely to have significant effects on three of the Qualifying Interests of those sites, in view of their Conservation Objectives. A summary of the Qualifying Interests likely to be affected in each site is given in Table 3-8 below.

Table 3-8 Summary of the European sites likely to be affected by the proposed development and the Qualifying Interests likely to be affected in each site.

European site	Qualifying Interest
Rye Water Valley/Cartron SAC	Petrifying Springs Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>) Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)
South Dublin Bay and River Tolka Estuary SPA	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)
North Bull Island SPA	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)

4. IN-COMBINATION EFFECTS

Article 6(3) of the Habitats Directive requires that AA be carried out in respect of any plan or project which is likely to have a significant effect on one or more European sites, “either individually or in combination with other plans or projects”. Therefore, regardless of whether or not the likely effects of a plan or project are significant when considered in isolation, the potential for the plan or project to significantly affect European sites in combination with other past, present or foreseeable future plans or projects must also be assessed.

In the case of DART+ West, this AA Screening Report has found that the proposed development, individually, is likely to have significant effects on three European sites. Therefore, the assessment of the proposed development must proceed to Stage 2 (AA). The assessment of likely significant effects on those European sites arising from the proposed development, in combination with other plans or projects, should be undertaken at that stage.

5. CONCLUSION

In accordance with Article 6(3) of the Habitats Directive, Part 5 of the Birds and Natural Habitats Regulations, Part XAB of the Planning and Development Acts, the relevant case law, established best practice and the Precautionary Principle, this AA Screening Report has considered the proposed development and its potential to significantly affect European sites. This report has concluded, on the basis of objective information, that the proposed development, either individually or in combination with other plans or projects, is likely to give rise to impacts which would constitute significant effects on three European sites, namely the Rye Water Valley/Carton SAC, the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA, in view of their Conservation Objectives.

In light of this conclusion, it is the considered opinion of ROD, as the author of this AA Screening Report, that the Applicant, as the Competent Authority in this case, in completing its AA Screening in respect of the DART+ West, should find that the proposed development, either individually or in combination with other plans or projects, is likely to have a significant effect on three European sites, namely the Rye Water Valley/Carton SAC, the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA, in view of their Conservation Objectives. Therefore, the Applicant should determine that AA is required in respect of the proposed development.

As the proposed development is a development by or on behalf of a public authority and requiring AA, Section 177AE of the Planning and Development Act will apply. This means that the role of competent authority will be assumed by An Bord Pleanála ("the Board"). The Board's AA must contain complete, precise and definitive findings and conclusions in relation to the implications of the proposed development for the integrity of the Rye Water Valley/Carton SAC, the South Dublin Bay and River Tolka Estuary SPA and the North Bull Island SPA. 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. The NIS should take the form of a comprehensive examination, analysis and evaluation, including recommendations, in respect of the implications of the proposed development, individually and in combination with other plans and projects, for the integrity of the European sites concerned.

6. REFERENCES

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