

NATURA IMPACT STATEMENT

IN SUPPORT OF THE APPROPRIATE ASSESSMENT OF THE R132 CONNECTIVITY PROJECT, SWORDS, COUNTY DUBLIN

IN ACCORDANCE WITH THE REQUIREMENTS OF
ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE

prepared for:

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1 INTRODUCTION

1.1 BACKGROUND

CAAS Ltd. has been appointed by the National Transport Authority on behalf of Fingal County Council to prepare this Natura Impact Statement (NIS) in support of the Appropriate Assessment (AA) of the proposed R132 Connectivity Project in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the "Habitats Directive").

1.2 LEGISLATIVE CONTEXT

The Habitats Directive provides legal protection for habitats and species of European importance. The overall aim of the Habitats Directive is to maintain or restore the "favourable conservation status" of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Habitats Directive as above and Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European sites. Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect such sites. Article 6(3) establishes the requirement for AA. These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Planning and Development Act 2000 (as amended).

Article 6(3) of the Habitats Directive States:

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

The AA process relates to the protection of species listed in Annex I and Annex II of the Habitats Directive which form the Natura 2000 network (Article 3(1)). Species breeding and resting places of species listed in Annex IV of the Habitats Directive are nationally protected in Ireland as per Articles 15 and 16 of the Habitats Directive. The species listed in Annex IV do not form part of the Natura 2000 network as they are not mentioned in Article 3(1) of the Directive which defines the Natura 2000 network.

Article 3(1) of the Habitats Directive States:

'A coherent European ecological network of special areas of conservation shall be set up under the title Natura 2000. This network, composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.'

AA is an assessment of the potential for adverse or negative effects of a plan or project, in combination with other plans or projects, on the conservation objectives of a European site. These sites consist of SACs and SPAs and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

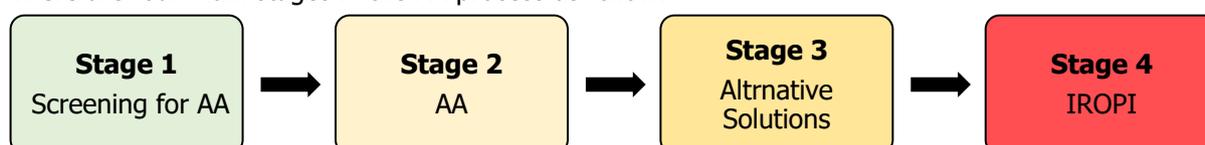
1.3 APPROACH

This NIS is based on best scientific knowledge and has utilised ecological and hydrological expertise. In addition, a detailed online review of published scientific literature and 'grey' literature was conducted. This included a detailed review of the National Parks and Wildlife Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives. The EPA Envision map viewer (www.epa.ie) and available reports were also reviewed, as was the NPWS (2019) publication "*The Status of Protected EU Habitats and Species in Ireland*".

The ecological desktop study completed for the AA screening of the proposed project comprised the following elements:

- Identification of European sites within 15km of the site with identification of potential pathways to specific sites (if relevant) greater than 15km from the proposed project boundary;
- Review of the NPWS site synopses and conservation objectives for European sites within 15km and for which potential pathways from the proposed site have been identified; and
- Examination of available information on protected species.

There are four main stages in the AA process as follow:



Stage One: Screening

The process that identifies the likely impacts upon a European site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant.

Stage Two: Appropriate Assessment

The consideration of the impact on the integrity of the European site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is proposed to ensure no significant adverse impacts on European sites, then the process may end at this stage. The details of stage two assessments are formalised in Natura Impact Statements (NIS) reports which support the overall AA process. However, if the likelihood of significant impacts remains, then the process must proceed to Stage Three.

Stage Three: Assessment of alternative solutions

The process that examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. This approach aims to avoid any impacts on European sites by identifying possible impacts early in the plan or project making process and avoiding such impacts. Second, the approach involves the application of mitigation measures, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If potential impacts on European sites remain, and no further practicable mitigation is possible, the approach requires the consideration of alternative solutions. If no alternative solutions are

identified and the plan or project is required for imperative reasons of overriding public interest, then compensation measures are required for any remaining adverse effects.

Ecological impact assessment of potential effects on European sites is conducted following a standard source-pathway-receptor model, where, in order for an effect to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g., pollutant run-off from proposed project;
- Pathway(s) – e.g., groundwater connecting to nearby qualifying wetland habitats and
- Receptor(s) – qualifying aquatic habitats and species of European sites.

In the interest of this report, receptors are the ecological features that are known to be utilised by the qualifying interests or special conservation interests of a European site. A source is any identifiable element of the proposed project that is known to interact with ecological processes. The pathways are any connections or links between the source and the receptor. This report provides information on whether direct, indirect and cumulative adverse effects could arise from the proposed project.

The NIS exercise has been prepared taking into account legislation including the aforementioned legislation and guidance including the following:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2009.*
- *Commission Notice: Managing Natura 2000 sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, European Commission 2018.*
- *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, European Commission Environment DG, 2002.*
- *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC, European Commission, 2000.*

1.4 AUTHOR DETAILS

Karen Dylan Shevlin is an Ecologist with 7 years' experience working in multiple capacities in ecology in Ireland and international research organisations, and holds a MSc degree in Biodiversity and Conservation from Trinity College Dublin (2013). Karen has undertaken stage 2 AAs and EIARs for a number of local and large development projects ranging from smaller facilities upgrades projects, to major wind turbine sites. Karen is a specialist in leading ecological surveys of bats, birds, insects, habitats and mammals – and also has significant skills in sonogram analysis, data analysis, mapping and compiling ecological reports. Karen is also a specialist in ecological theory and the impacts/effects that altering natural dynamics may have on the surrounding environment. This combination of skills and knowledge provides the backbone of the assessment process, and ensure that all of the baseline data is accurately gathered in the field, and is interpreted in a manner that is grounded in best scientific knowledge and practice.

Andrew Torsney is a Senior Ecologist with 8 years' experience working on national, regional and local scale projects. Andrew graduated from University College Dublin in 2011 with a B.Sc. degree in Zoology and obtained Master's degree in Biodiversity and Conservation from the University of Leeds in 2012. He has a range of ecological skills which include habitat mapping, ecological surveying, data interpretation and report writing. Andrew holds 4 national protected species licences. He is also a bat specialist with experience in acoustic surveying and monitoring of bats. Throughout Andrews's career he has worked on a number of large-scale multifaceted projects such as the Killaloe to Dublin water supply project NIS. For this work, Andrew designed and oversaw all ecological field work relating to the Environmental Impact Assessment and AA.

2 PROJECT DESCRIPTION

2.1 PROPOSED DEVELOPMENT

The proposed works are to be carried out along the existing R132 situated between Lissenhall Interchange and Pinnockhill junction, to the east of Swords Town Centre. The section of road the subject of the proposed development is approximately 2.6km long.

The works will involve the following:

- a) Conversion of three existing intersections along the R132 (Estuary, Seatown and Malahide Road Roundabouts) to signalised intersections with 'at-grade' pedestrian and cyclist crossing points;
- b) Installation of signalised toucan crossings at three separate points along the R132;
- c) Pedestrian linkages to Chapel Lane and Ashley Avenue at the proposed Chapel Lane toucan crossing;
- d) Installation of turning areas at two separate points along the R132;
- e) Carriageway alterations including the establishment of designated 3m wide bus lanes and 2m wide cycleways and 2m wide pedestrian walkways along each side of the carriageway;
- f) Reconfiguration of the Drynam Road arm of the Malahide Road Roundabout to link directly to Malahide Road as a one-way road;
- g) Construction of new bus stops on Malahide Road;
- h) Installation of a sub-surface attenuation system; and
- i) Landscaping and other ancillary works.

The carriageway alterations at (d) above will provide a more hospitable environment for pedestrians and cyclists within the overall proposed transport corridor upgrade. The changes will commence just north of the Pinnockhill Roundabout and extending to approximately 750m north of the Estuary Junction (Figure 1). The alterations will consist of the following:

- One 3.0m wide general traffic lane in both directions
- One 3.0m bus lane in both directions
- A footpath in both directions varying in width from 1.85-2.0m.
- A 2m wide cycle lane in both directions
- Pedestrian paths and cycle lanes, segregated from the bus lanes via pencil bollards and a kerb;
- Existing median/road edges will generally be retained

The existing speed limits along the extents of the study area are 60km/h and 80km/h. A reduction in the speed limit to 50km/h is proposed, but will be facilitated through a separate process. The reduced speed limit, in conjunction with the infrastructural proposals, will increase safety along the corridor particularly for vulnerable road users.

Regarding drainage and surface water; all measures will be restricted to within the existing road reservation and will not generate additional surface water run-off. Public lighting will be upgraded to accommodate the proposed junction layouts, but in keeping with the light levels of the immediate and surrounding bypass and urban surroundings. It is expected that the works will be carried out in a number of phases (to be determined) over an expected 2-year construction period.

2.2 SITE CONTEXT

The proposed site is located approximately 500m east of the main Swords urban zone, and 550m west of the M1 motorway in a majority sub-urban landscape (Figure 1). In its immediate surroundings the site is bordered by a mix of residential, industrial and commercial developments, and amenity or improved agricultural grassland. The remaining improved agricultural grassland sites directly bordering the proposed site are identified for commercial and residential development in the Swords Masterplans Part A (2019), as part of the Fingal Development Plan 2017-2023¹. The majority of the site itself is built environment; consisting of the existing R132 dual-carriageway road, that is the predominant route linking sub-urban/rural north County Dublin to Dublin Airport and the Dublin city to the south – which lies approximately 11km south of Swords.

In a wider context, Dublin's coastline lies approximately 6km to the east. The Malahide Estuary extends approximately 4.5km inland from the coastline, to meet the northern bounds of Swords via the Broadmeadow River. The estuary contains two European sites: Malahide Estuary SPA (NPWS site code: 004025) and Malahide Estuary SAC (NPWS site code: 000205) (Figure 1). The landscape west of Swords is dominated by rural agricultural lands and smaller towns.

Considering the urban landscape of this project, within an already highly modified built environment, and not within any European sites; hydrological connectivity and potential impacts to European sites via these pathways will be the main focus of this assessment. The Malahide Estuary is the major hydrological feature with indirect connectivity, but in close proximity, to the proposed site, coming in at 450m from the north of the site boundary (Figure 1). As mentioned, the estuary is met by the Broadmeadow River (Water Framework Directive Status 2013-2018: "Poor"), which runs under the R132 50m from the north of the proposed project, and joins the Ward River (Water Framework Directive Status 2013-2018: "Poor") to flow into the Malahide Estuary. The proposed site is encapsulated by two river catchments: the Nanny-Dlewin (EPA ID: 08) and the Liffey and Dublin Bay (EPA ID: 09). All major water features in the immediate and wider area are displayed in Figure 2. The indirect hydrological pathways from the proposed site to the Malahide Estuary consist of urban drainage networks that are typical of developed landscapes such as the R132 and surrounds, and indirectly link the site area to the Malahide Estuary (Figures 3 and 4). Thus, these indirect links, either via urban drainage or proximity to direct links such as the Ward and Broadmeadow Rivers, are the main focus of this assessment.

The important ecological features identified on the proposed site are treelines and hedgerows. These are considered to be of low local value ecologically (see accompanying EcIA report), and not seen to provide significant connectivity habitat to the QI species and habitats of the nearby Malahide Estuary European sites.

No Annex I habitats identified within the site development area boundary during a site walk over in January 2020. Similarly, no Annex II species were identified within the site development area boundary.

¹Swords Masterplans Part A: Masterplans for Barrysparks & Crowcastle; Fostertown; & Estuary West (May 2019), Fingal Development Plan 2017-2023.



Figure 1 Location of the proposed R132 Connectivity Project

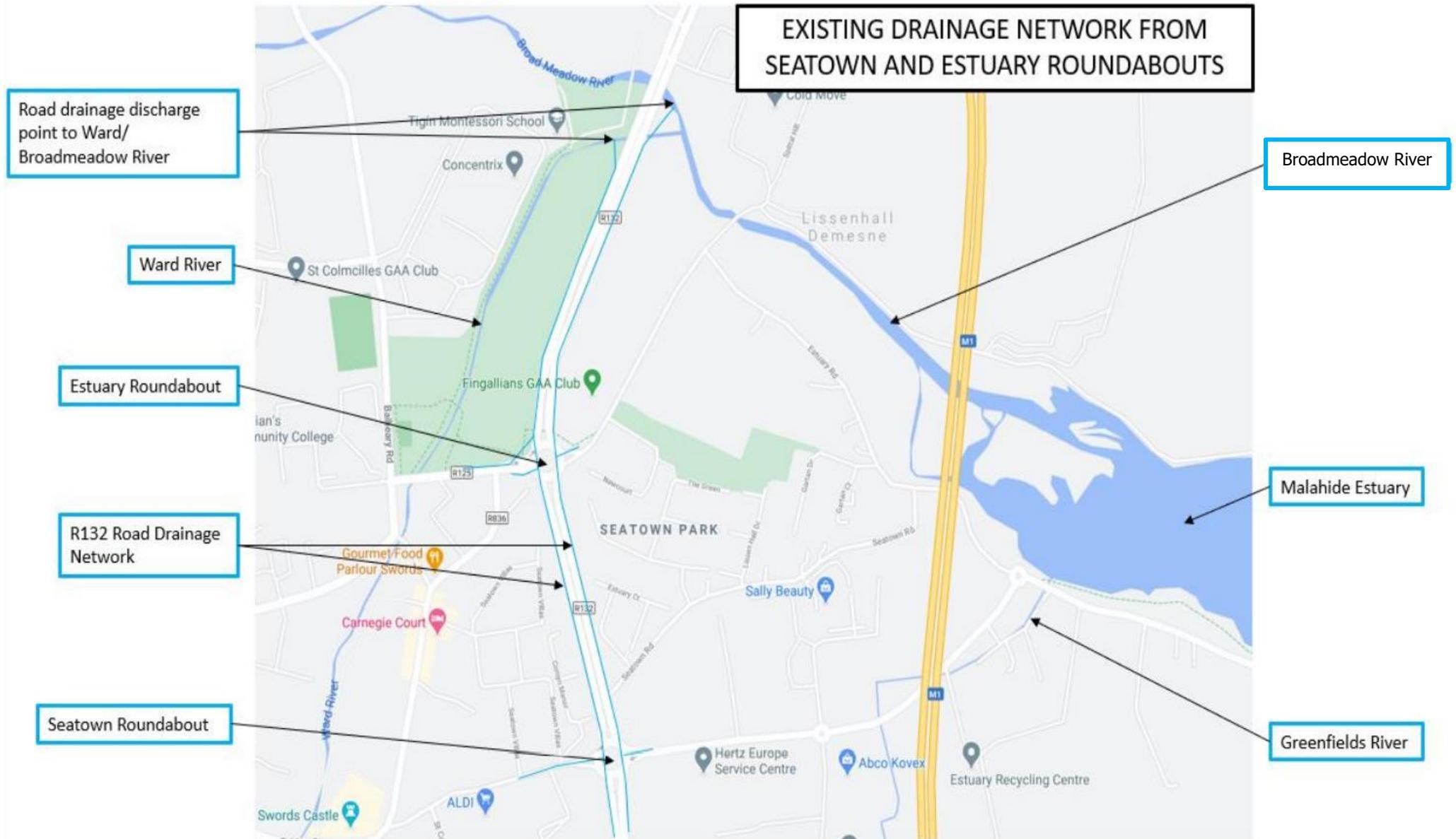


Figure 3 Existing drainage networks between Broadmeadow River and Seatown roundabout⁴

⁴Image: DLBF Consultant Engineers and Google Maps
by CAAS for Fingal County Council

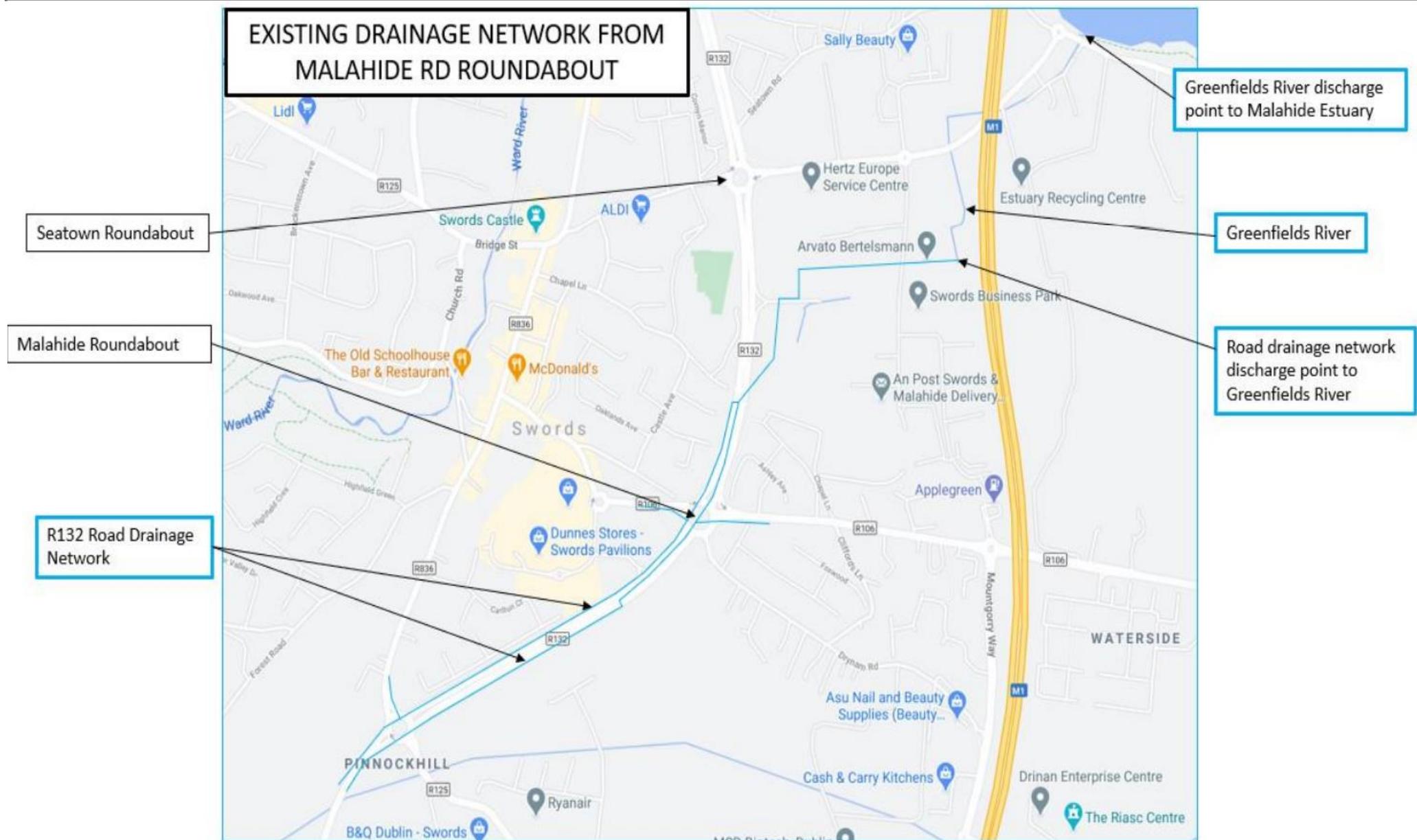


Figure 4 Existing drainage networks between the PinnockHill and Seatown Roundabout⁵

⁵Image: DLBF Consultant Engineers and Google Maps
by CAAS for Fingal County Council

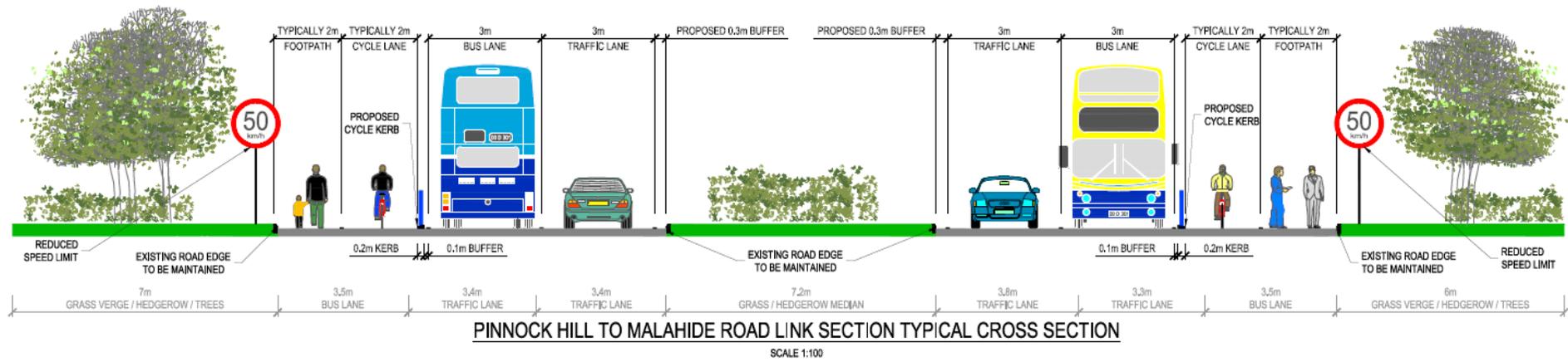


Figure 5 Typical cross section of proposed project⁶

⁶ See drawing no. 200021-DBFL-RD-SP-DR-C-1101 for full scaled version

3 SCREENING FOR APPROPRIATE ASSESSMENT

3.1 INTRODUCTION

This stage of the process identifies any likely significant effects to European sites from a project or plan, either alone or in combination with other projects or plans. The screening phase was progressed in the following stages. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European site.
- Whether the project will have a potentially significant effect on a European site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

An important element of the AA process is the identification of the "conservation objectives", "Qualifying Interests" (QIs) and/ or "Special Conservation Interests" (SCIs) of European sites requiring assessment. QIs are the habitat features and species listed in Annexes I and II of the Habitats Directive for which each European site has been designated and afforded protection. SCIs are wetland habitats and bird species listed within Annexes I and II of the Birds Directive. It is also vital that the threats to the ecological / environmental conditions that are required to support QIs and SCIs are considered as part of the assessment.

Site-Specific Conservation Objectives (SSCOs) have been designed to define favourable conservation status for a particular habitat or species at that site. According to the European Commission interpretation document 'Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC', paragraph 4.6(3) states:

"The integrity of a site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

Favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

3.2 IDENTIFICATION OF RELEVANT EUROPEAN SITES

This section of the screening process describes the European sites which exist within the Zone of Influence (ZOI) of the site. The Department of the Environment (2009) Guidance on AA recommends a 15 km buffer zone to be considered. On a precautionary basis this radius has been adopted for this AA. A review of all sites within the ZOI has identified that in the absence of significant hydrological links the characteristics of the proposed project will not impose effects beyond the 15 km ZOI.

European sites that occur within 15 km of the proposed project are listed in Table 1 and illustrated in Figure 6 below, alongside details on the specific QIs and SCIs of each European site.

In order to determine the potential for effects from the proposed project, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European sites was reviewed. Background information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- Ireland's Article 17 Report to the European Commission "*Status of EU Protected Habitats and Species in Ireland*" (NPWS, 2019);
- Site Synopses⁷; and
- NATURA 2000 Standard Data Forms⁷.

The assessment takes consideration of the SSCOs of each of the sites within the ZOI. Since the conservation objectives for the European sites focus on maintaining the favourable conservation condition of the QIs/SCIs of each site, the screening process concentrated on assessing the potential effects of the proposed project against the QIs/SCIs of each site. The conservation objectives for each site were consulted throughout the assessment process.

Conservation objectives that have been considered by the assessment are included in the following NPWS documents:

NPWS (2012) Conservation Objectives for Baldoyle Bay SAC [IE0000199] Version 1.
NPWS (2016) Conservation Objectives for Howth Head SAC [IE0000202] Version 1.
NPWS (2013) Conservation Objectives for Lambay Island SAC [IE0000204] Version 1.
NPWS (2013) Conservation Objectives for Malahide Estuary SAC [IE0000205] Version 1.
NPWS (2013) Conservation Objectives for North Dublin Bay SAC [IE0000206] Version 1.
NPWS (2013) Conservation Objectives for Rogerstown Estuary SAC [IE0000208] Version 1.
NPWS (2013) Conservation Objectives for South Dublin Bay SAC [IE0000210] Version 1.
NPWS (2017) Conservation Objectives for Ireland's Eye SAC [IE0002193] Version 1.
NPWS (2013) Conservation Objectives for Rockabill to Dalkey Island SAC [IE0003000] Version 1.
NPWS (2015) Conservation Objectives for North Bull Island SPA [IE0004006] Version 1.
NPWS (2013) Conservation Objectives for Rockabill SPA [IE0004014] Version 1.
NPWS (2013) Conservation Objectives for Rogerstown Estuary SPA [IE0004015] Version 1.
NPWS (2012) Conservation Objectives for Baldoyle Bay SPA [IE0004016] Version 1.
NPWS (2015) Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA [IE0004024] Version 1.
NPWS (2013) Conservation Objectives for Malahide Estuary SPA [IE0004025] Version 1.
NPWS (2020) Conservation Objectives for Lambay Island SPA [IE0004069] Version 7.
NPWS (2018) Conservation Objectives for Howth Head Coast SPA [IE0004113] Version 6.
NPWS (2018) Conservation Objectives for Ireland's Eye SPA [IE0004117] Version 6.
NPWS (2018) Conservation Objectives for Skerries Islands SPA [IE0004122] Version 6.

⁷ NPWS (2019); NPWS Database of protected site data and associated documents for each European site; available at <https://www.npws.ie/protected-sites>

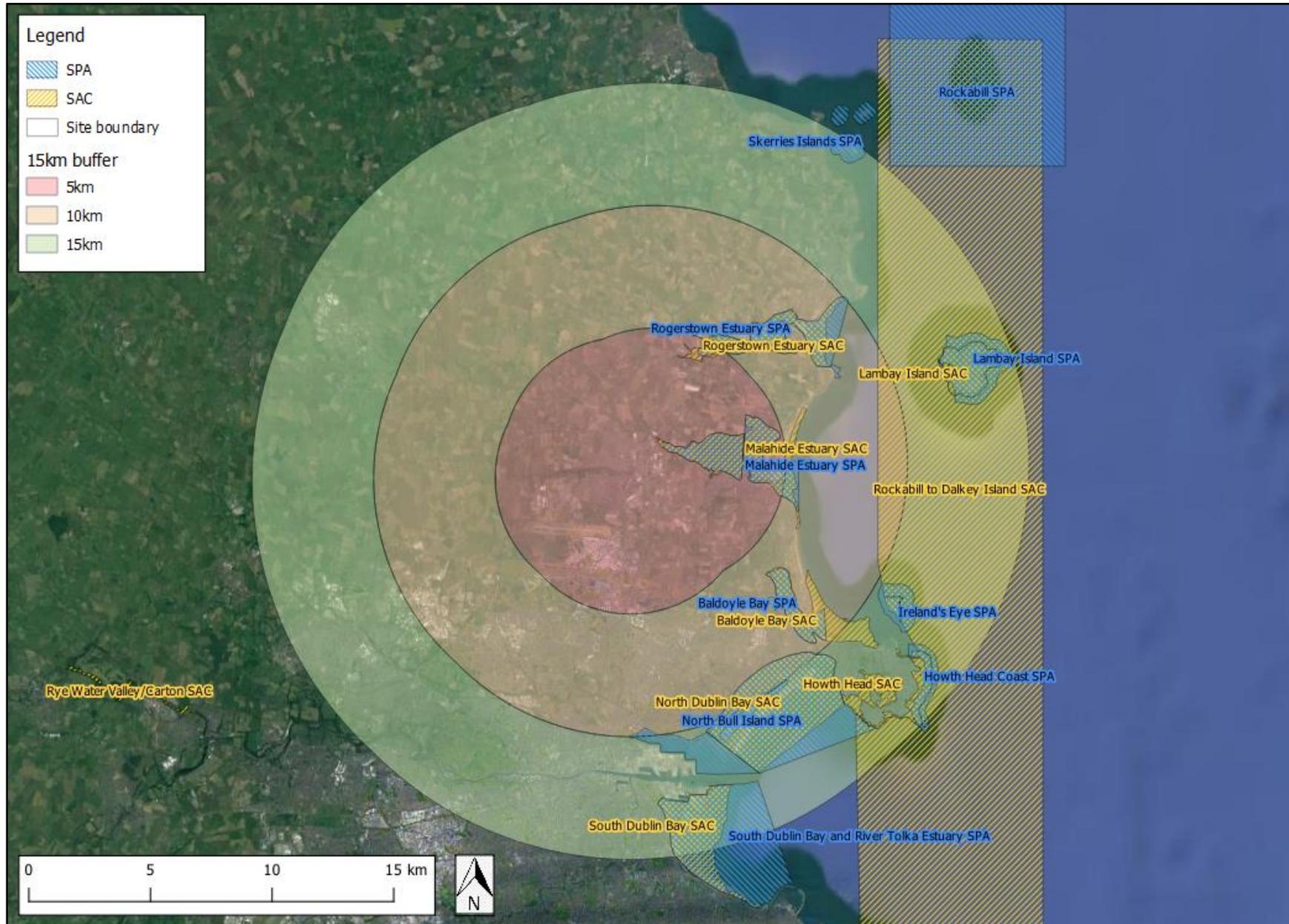


Figure 6 European sites within 15 km of the proposed site.

3.3 ASSESSMENT CRITERIA

3.3.1 IS THE PLAN OR PROJECT NECESSARY TO THE MANAGEMENT OF EUROPEAN SITES?

Under the Habitats Directive, plans or projects that are directly connected with or necessary to the management of a European site do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to be direct and not a by-product of the plan or project, even if this might result in positive or beneficial effects for a site(s).

The primary purpose of the proposed project is not the nature conservation management of the sites, but to enhance sustainable transport facilities (vehicle, cycling and pedestrian) along the project area, at key intersections, and key crossing points along the R132 Swords Road. Therefore, the proposed project is not considered by the Habitats Directive to be directly connected with or necessary to the management of European designated sites.

3.3.2 ELEMENTS OF THE PROPOSED DEVELOPMENT WITH POTENTIAL TO GIVE RISE TO EFFECTS

The proposed project includes amendments to the layout and on-site status of the current R132 Swords bypass during the construction phase with potential to give effect such as:

1. Earthworks within the project area relating to excavation and replacement of materials;
2. Establishment of a construction compound area (possibly two given the expanse of the project area to be confirmed at a later date);
3. New surface water drainage;
4. Modifications to existing underground services such as telecommunications ducting, and watermains;
5. Indirect disturbance via noise, air quality and vibrations; and
6. Emergency spillage and storm events.

Each of the above potential elements are discussed further below, and outlined:

1. Earthworks

The majority of the proposed works are to take place within the current footprint of the existing R132 bypass route. The project is not expected to result in significant levels of excavation. General excavation of material required for installation of underground services such as drainage and ducting will be reinstated or where possible with any excess material stockpiled for reuse on site.

2. Construction compound(s)⁸

While final construction compound locations will be determined at construction stage by the Contractor, a number of potential locations have been identified to inform the screening process. It is possible that up to 2 compounds may be required given the separation distance between the northern and southern extent of the project and possible phasing of the works. The potential locations and their potential impacts are as follows with descriptions:

- (a) Balheary Park - south of the playing pitches:
No direct hydrological link to the Malahide Estuary SAC/SPA. However, the proximity of the Ward River represents an indirect link to the aforementioned European Sites,
- a) Fingal County Council Lands adjacent to the Pavilions Shopping Centre:
No surface hydrological link to the Malahide Estuary SAC/SPA.
- b) Fosterstown Lands adjacent to PinnockHill roundabout:

⁸ See associated CEMP for proposed compound site locations.

No direct hydrological link to the Malahide Estuary SAC/SPA. However, this site contains agricultural pasture that is approximately 2.2km from a European site (Malahide Estuary SPA). This European site is designated for SCI bird species that may utilise improved agricultural grassland habitat for foraging grounds.

3. New surface water drainage

New surface water sewers will be constructed to collect and convey all additional runoff as a result of the proposed junction upgrades and crossings and connect to the existing drainage infrastructure running north on R132, which discharges into the existing underground drainage networks at a number of points along the current route. These drainage points are then connected to the Malahide Estuary. The Estuary, Seatown and Malahide roundabouts, as well as the R132 link sections, lie within the Broadmeadow River catchment. The existing drainage infrastructure conveys surface water from Estuary and Seatown Roundabouts to outfalls at the intersection of Ward River and Broadmeadow River (Figure 3). Surface water from the Malahide Road Roundabout is conveyed to an outfall at Greenfields River (Figure 4). Ward river, Broadmeadow river and Greenfields river discharge into Malahide Estuary. During the operation phase all surface water will be collected, attenuated and discharge at the green field runoff rates as per the engineering services report produced by DBFL Consultant Engineers, which accompanies this application. Potential adverse effects to European sites cannot be ruled out via this pathway.

4. Modifications to existing underground services

Any extraction of materials as a result of these works will be kept on site and reused on site.

5. Noise, air quality and vibrations

The construction phase elements of the proposed project have the potential to introduce effects such as alteration to air quality, and/or indirect disturbance due to noise/vibrations. The operation phase elements of the proposed project are identified to introduce localised effects such as noise, traffic, waste and light pollution etc., but these are in keeping with the current levels of each effect for the immediate and surrounding urban environment, and current usage of the site (see the associated Environmental Impact Assessment Report (EIAR) for further details).

6. Emergency spillage and storm events

Emergency spillage events are planned and controlled for as part of the Outline CEMP, and particularly important for this project given the proximity to hydrologically sensitive European sites, and the existence of indirect pathways via the current underground urban drainage network.

Storm events are temporary in nature and the scale of the site in conjunction with the indirect hydrological pathway identified ensures there are no likely significant effects to the Malahide Estuary SAC/SPA as a result of the proposed project, beyond those already existing for this current heavily urbanised landscape. Furthermore, ecological systems such as the Malahide Estuary, and the intertidal mudflats and sandflats contained therein, are tolerant to flood events which naturally increase stress and pressures on systems through the introduction of increased siltation levels, debris and changing hydrological status. Therefore, there are no significant sources for effect with respect to storm water identified.

All of these effects are examined below - in relation to the sensitive receptors of each of the European sites identified, with regard to the conservation objectives and the potential pathways for effects of each.

3.3.3 SCREENING OF SITES RELATIVE TO POTENTIAL EFFECTS

This section documents the final stage of the screening process. It uses the information collected on the sensitivity of each European site, and describes any potential effects to the integrity of the European sites identified within 15km (Figure 6), relative to the elements from the proposed project identified as having potential to give rise to effects (Section 3.3.2). This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European site. Secondly, the individual elements of the proposed project and the potential effect they may cause to the site were

considered. The elements of the proposed project with potential to cause effect to the integrity of European sites are presented in Table 1 below.

Sites are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are no significant pathways such as hydrological links between activities of the proposed project, and the site to be screened;
- Where the site is located at such a distance from proposed project that effects are not foreseen; and,
- Where it is that known threats or vulnerabilities at a site cannot be linked to potential impacts that may arise from the proposed project.

Table 1 Stage 1 screening: European sites within 15 km of the proposed project boundary⁹

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
000205	Malahide Estuary SAC	0.2	Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2120], Mudflats and sandflats not covered by seawater at low tide [1140], Cord-grass swards (<i>Spartina</i> swards (<i>Spartinion maritimae</i>)) [1320], <i>Salicornia</i> and other annuals colonizing mud and sand [1310], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330]	There are potential effects via increases in surface water run-off and increases in sediment and siltation load into the drainage system surrounding the project area, which is indirectly linked to the Malahide Estuary that supports this SAC, which could pose a pathway for potential significant impacts to the Qualifying Interests of the site.	Yes	Yes
004025	Malahide Estuary SPA	0.58	Ringed plover (<i>Charadrius hiaticula</i>) [A137], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Ruff (<i>Philomachus pugnax</i>) [A151], Common redshank (<i>Tringa totanus</i>) [A162], Sanderling (<i>Calidris alba</i>) [A144], Common greenshank (<i>Tringa nebularia</i>) [A164], Red knot (<i>Calidris canutus</i>) [A143], Mallard (<i>Anas platyrhynchos</i>) [A053], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Eurasian curlew (<i>Numenius arquata</i>) [A160], European golden plover (<i>Pluvialis apricaria</i>) [A140], Grey plover (<i>Pluvialis squatarola</i>) [A141], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Northern pintail (<i>Anas acuta</i>) [A054], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Black-headed gull (<i>Larus ridibundus</i>) [A179], Great crested grebe (<i>Podiceps cristatus</i>) [A005], Common shelduck (<i>Tadorna tadorna</i>) [A048], Mew gull (<i>Larus canus</i>) [A182], Common pochard (<i>Aythya ferina</i>) [A059], Eurasian teal (<i>Anas crecca</i>) [A052], Common goldeneye (<i>Bucephala clangula</i>) [A067]	There are potential effects via increases in surface water run-off and increases in sediment and siltation load into the drainage system surrounding the project area, which is indirectly linked to the Malahide Estuary that supports this SPA, which could pose a pathway for potential significant impacts to the Qualifying Interests of the site.	Yes	Yes
000208	Rogerstown Estuary SAC	3.4	Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2120], <i>Salicornia</i> and other annuals colonizing mud and sand [1310], Mudflats and sandflats not covered by seawater at low tide	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC.	No	No

⁹ listed according to distance

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
			[1140], Atlantic salt meadows (Atlantic salt meadows (Glaucopuccinellietalia maritimae)) [1330], Estuaries [1130]			
004015	Rogerstown Estuary SPA	3.84	Common snipe (<i>Gallinago gallinago</i>) [A153], Eurasian teal (<i>Anas crecca</i>) [A052], Common shelduck (<i>Tadorna tadorna</i>) [A048], Red knot (<i>Calidris canutus</i>) [A143], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Eurasian curlew (<i>Numenius arquata</i>) [A160], Greylag goose (<i>Anser anser</i>) [A043], Grey plover (<i>Pluvialis squatarola</i>) [A141], Ruff (<i>Philomachus pugnax</i>) [A151], Common greenshank (<i>Tringa nebularia</i>) [A164], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Eurasian wigeon (<i>Anas penelope</i>) [A050], Ringed plover (<i>Charadrius hiaticula</i>) [A137], European golden plover (<i>Pluvialis apricaria</i>) [A140], Greylag goose (<i>Anser anser</i>) [A043], Sanderling (<i>Calidris alba</i>) [A144], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Mallard (<i>Anas platyrhynchos</i>) [A053], Northern shoveler (<i>Anas clypeata</i>) [A056], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Common redshank (<i>Tringa totanus</i>) [A162]	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC.	No	No
004016	Baldoyle Bay SPA	6.17	Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Grey plover (<i>Pluvialis squatarola</i>) [A141], Eurasian teal (<i>Anas crecca</i>) [A052], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Mallard (<i>Anas platyrhynchos</i>) [A053], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Northern pintail (<i>Anas acuta</i>) [A054], Common shelduck (<i>Tadorna tadorna</i>) [A048], Sanderling (<i>Calidris alba</i>) [A144], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Red knot (<i>Calidris canutus</i>) [A143], Eurasian curlew (<i>Numenius arquata</i>) [A160], European golden plover (<i>Pluvialis apricaria</i>) [A140], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Common greenshank (<i>Tringa nebularia</i>) [A164], Common redshank (<i>Tringa totanus</i>) [A162], Great crested grebe (<i>Podiceps cristatus</i>) [A005]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
000199	Baldoyle Bay SAC	6.18	Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonizing mud and sand [1310], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
000206	North Dublin Bay SAC	8.98	Salicornia and other annuals colonizing mud and sand [1310], Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Humid dune slacks [2190], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Mudflats and sandflats not covered by seawater at low tide [1140], Shifting dunes (Embryonic shifting dunes) [2110], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2120], Petalwort (<i>Petalophyllum ralfsii</i>) [1395], Annual vegetation of drift lines [1210]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004006	North Bull Island SPA	8.98	Ringed plover (<i>Charadrius hiaticula</i>) [A137], Eurasian curlew (<i>Numenius arquata</i>) [A160], Northern shoveler (<i>Anas clypeata</i>) [A056], Mew gull (<i>Larus canus</i>) [A182], Grey plover (<i>Pluvialis squatarola</i>) [A141], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Sanderling (<i>Calidris alba</i>) [A144], Ruff (<i>Philomachus pugnax</i>) [A151], Common greenshank (<i>Tringa nebularia</i>) [A164], Red knot (<i>Calidris canutus</i>) [A143], Black-headed gull (<i>Larus ridibundus</i>) [A179], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Mallard (<i>Anas platyrhynchos</i>) [A053], Common shelduck (<i>Tadorna tadorna</i>) [A048], Eurasian teal (<i>Anas crecca</i>) [A052], Northern pintail (<i>Anas acuta</i>) [A054], Eurasian wigeon (<i>Anas penelope</i>) [A050], European golden plover	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any	No	No

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
			(Pluvialis apricaria) [A140], Common redshank (Tringa totanus) [A162], Short-eared owl (Asio flammeus) [A222], Red-breasted merganser (Mergus serrator) [A069]	potential significant effects on the ecological integrity of this site.		
003000	Rockabill to Dalkey Island SAC	9.3	Harbour porpoise (Phocoena phocoena) [1351], Reefs [1170]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004024	South Dublin Bay and River Tolka Estuary SPA	9.75	Roseate tern (Sterna dougallii) [A192], Bar-tailed godwit (Limosa lapponica) [A157], Mediterranean gull (Larus melanocephalus) [A176], Red knot (Calidris canutus) [A143], Common redshank (Tringa totanus) [A162], Grey plover (Pluvialis squatarola) [A141], Mew gull (Larus canus) [A182], Great cormorant (Phalacrocorax carbo) [A017], Eurasian oystercatcher (Haematopus ostralegus) [A130], Black-headed gull (Larus ridibundus) [A179], Sanderling (Calidris alba) [A144], Eurasian curlew (Numenius arquata) [A160], Red-breasted merganser (Mergus serrator) [A069], Ruddy turnstone (Arenaria interpres) [A169], Ringed plover (Charadrius hiaticula) [A137], Common tern (Sterna hirundo) [A193], Arctic tern (Sterna paradisaea) [A194], Great crested grebe (Podiceps cristatus) [A005]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004117	Ireland's Eye SPA	10.47	Razorbill (Alca torda) [A200], Black-legged kittiwake (Rissa tridactyla) [A188], Common guillemot (Uria aalge) [A199], Atlantic puffin (Fratercula arctica) [A204], Peregrine falcon (Falco peregrinus) [A103], Northern gannet (Morus bassanus) [A016], Great cormorant (Phalacrocorax carbo) [A017], Northern fulmar (Fulmarus glacialis) [A009]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and	No	No

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
				dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.		
002193	Ireland's Eye SAC	10.74	Perennial vegetation of stony banks [1220], Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
000202	Howth Head SAC	11.63	Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230], European dry heaths [4030]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004069	Lambay Island SPA	11.87	Northern fulmar (<i>Fulmarus glacialis</i>) [A009], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Purple sandpiper (<i>Calidris maritima</i>) [A148], Lesser black-backed gull (<i>Larus fuscus</i>) [A183], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Greylag goose (<i>Anser anser</i>) [A043], Common guillemot (<i>Uria aalge</i>) [A199], Atlantic puffin	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider	No	No

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
			(Fratercula arctica) [A204], Peregrine falcon (Falco peregrinus) [A103], Manx shearwater (Puffinus puffinus) [A013], Common shelduck (Tadorna tadorna) [A048], Black-legged kittiwake (Rissa tridactyla) [A188], Eurasian curlew (Numenius arquata) [A160], Ruddy turnstone (Arenaria interpres) [A169], Greylag goose (Anser anser) [A043], Razorbill (Alca torda) [A200]	effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.		
000204	Lambay Island SAC	11.88	Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230], Common seal (Phoca vitulina) [1365], Grey seal (Halichoerus grypus) [1364], Reefs [1170]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
000210	South Dublin Bay SAC	12.51	Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonizing mud and sand [1310], Shifting dunes (Embryonic shifting dunes) [2110], Annual vegetation of drift lines [1210]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004113	Howth Head Coast SPA	12.6	Razorbill (Alca torda) [A200], Black-legged kittiwake (Rissa tridactyla) [A188], Peregrine falcon (Falco peregrinus) [A103], Common guillemot (Uria aalge) [A199], Northern fulmar (Fulmarus glacialis) [A009]	The operational phase is identified to be consistent with existing condition of the site. The construction phase	No	No

Site Code	Site Name	Distance	Qualifying features (Qis and SCIs) (Qualifying Interests or Special Conservation Interests)	Potential Effects	Pathway for Significant Effects	Potential for In-Combination Effects
				effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.		
004122	Skerries Islands SPA	13.71	Eurasian curlew (<i>Numenius arquata</i>) [A160], Purple sandpiper (<i>Calidris maritima</i>) [A148], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Common snipe (<i>Gallinago gallinago</i>) [A153], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Grey plover (<i>Pluvialis squatarola</i>) [A141], Eurasian wigeon (<i>Anas penelope</i>) [A050], Short-eared owl (<i>Asio flammeus</i>) [A222], Mallard (<i>Anas platyrhynchos</i>) [A053], Northern fulmar (<i>Fulmarus glacialis</i>) [A009], European golden plover (<i>Pluvialis apricaria</i>) [A140], Ringed plover (<i>Charadrius hiaticula</i>) [A137]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No
004014	Rockabill SPA	14.74	Arctic tern (<i>Sterna paradisaea</i>) [A194], Common tern (<i>Sterna hirundo</i>) [A193], Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188], Roseate tern (<i>Sterna dougallii</i>) [A192]	The operational phase is identified to be consistent with existing condition of the site. The construction phase effects are identified to be localised with potential to mobilise wider effects through hydrological pathways. Due to distance and dilution effects combined with the nature of the project it is not foreseen that there will be any potential significant effects on the ecological integrity of this site.	No	No

3.4 OTHER PLANS AND PROJECTS

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or projects that might, in combination with the plan or project, have the potential to adversely affect European sites.

As part of this assessment each plan or project is considered within a radius of the development area boundary of the proposed area as defined by the ecologist. The distance of this radius works from a standard 200m, but can be extended if the ecologist deems it necessary depending on whether certain characteristics are present, such as:

- Direct or indirect connectivity to European sites;
- In close proximity to European sites;
- The proposal is of a substantial scale relative to the conditions and/or current works taking place in the surrounding landscape.
- The proposal will significantly alter the existing natural or built environment (and infrastructure), from its current conditions.

The above factors are considered particular to each proposal for each particular location and specification. Considering the overall neutral change that this project will have on the surrounding area in terms of the function, current built environment and infrastructure (i.e., drainage networks and road networks), and characters of the surrounding environment, the radius of 200m for examining other plans and projects is deemed sufficient for this case.

Plans of relevance to this proposal¹⁰:

Plans of relevance in the context of this proposal include:

- Swords Masterplans Part A (2019), as part of the Fingal Development Plan 2017-2023; and
- Transport Strategy for the Greater Dublin Area (2016-2035).

Certain locations along the R132 route have been allocated zones within the Swords Masterplans (2019). Those of note within the 200m radius for consideration are MP 8.H and MP 8.I, which are zoned for industrial and residential development areas, respectively, and the planned Metrolink route (Figure 7). These are future sites for potential projects that have been assigned functionality within the Swords area, and thus are not in planning as of yet. The planned Metrolink route for the Swords (and greater Dublin) area is also indicated in Figure 7. Similarly, this project is not in planning stages as of yet, and will be subject to individual AA, SEA and Ecological Assessment screening. All future developments within these zones will be subject to Appropriate Assessment and Ecological screening as necessary, as part of the Swords Masterplans policies, as lead by the Fingal Development Plan (2017-2023)¹¹.

Considering that the proposed development is in keeping with the current function and urban context of the immediate and surrounding landscape, and that the proposed project is in line with the objectives of the adopted Swords Masterplans, , and wider Transport Strategy for the Greater Dublin Area, it is not foreseen that there will be any significant in-combination effects with the project, as a result of the above plans.

¹⁰ For a full list of plans associated with the proposed R132 Connectivity Project see associated planning report.

¹¹Fingal Development Plan (2017-2023). Accessed at: <https://maps.fingalcoco.ie/planning-and-buildings/development-plans-and-consultations/fingaldevelopmentplan2017-2023/>

A medium sized development (planning ref: F19A/0526, ABP ref: ABP-306575-20) was refused permission on November 2019, and refused on appeal June 2020 for a development of 113 no. car spaces, and all associated circulation, entrances, exits, drainage and landscaping.

Another medium sized development (planning ref: F17A/0734, ABP ref: ABP-301082-18) was refused permission in February 2018, and refused on appeal August 2018 for a development to the south west of the proposed site consisting of demolition of existing structures, and construction of detached dwelling and 2 car spaces, and 5 no. two story, three-bedroom dwellings to the east (rear) of the site with additional pedestrian access.

There are several areas identified as zoning objectives such as: Major Town Centre (MC); Metro Economic Corridor (ME); Residential Area (RA); General Employment (GE); Open Space (OS); High Technology with no applications attached to them as yet.

The proposed works within the project area will be undertaken on highly modified urban/suburban lands of low ecological value locally, using standard, best practice construction methods. The largest sources for effects identified relate to run off through the existing drainage network and potential release of excess silt associated with construction phase, which could introduce temporary effects. However, these are identified to be localised and short term due to the nature of the proposed development, and are accompanied by best practice construction mitigation measures such as the use of silt fences, extraction locally and returning materials back to the local area, and attenuation tanks. The operational phase will be very similar to the current function and characters of the current site and in keeping with the noise, and light levels of the current immediate and wider environment. Thus, it is not foreseen that proposed project will have any significant adverse effects on European sites in-combination effects with the aforementioned projects. On this basis, the relevant guidance (CIEEM, 2018) indicates that there is no need to consider in-combination effects for these smaller local dwelling developments.

Metrolink has potential for effects on European sites. The project is not at planning stage yet, and will be required to have its own AA EIA and Ecological screenings. As the current proposal is not likely to have any significant adverse effects on the integrity or composition of European sites via hydrological or terrestrial links, is in keeping with the current urban landscape and pressures, and will retain the current ecological features within the project area in the short and long-term, it is not currently considered in this assessment that there will be any significant in-combination effects with the Metrolink on European sites as a result of the proposed development.

3.5 CONCLUSIONS

The likely effects that could arise from the proposed R132 Connectivity Project have been examined in the context of several factors that could potentially affect the integrity of any European site. Based on the findings of this screening for AA, it is concluded that the proposed project:

- are not directly connected with or necessary to the management of a European site; and
- may have significant impacts on a European site.

Therefore, applying the precautionary principle and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 AA is required for the proposed project (Section 4 of this report).

4 STAGE 2 APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of the Stage 2 AA is to identify whether the proposed R132 Connectivity Project would result in significant adverse effects on the integrity of any European site with respect to the site's structure, function, and/or conservation objectives (i.e., QIs and SCIs).

The Stage 1 Screening presented above has identified two European sites with potential to be affected by the proposed project (Table 2). Therefore, taking a precautionary approach, Stage 2 AA is required. The potential adverse effects considered at this stage will either be effects occurring as a result of the implementation of the proposed project alone or in-combination with other plans, programmes, and/or projects.

Detailed information relevant to the sites from the NPWS database that has been reviewed to inform the AA includes the following:

- *NPWS Site Synopses;*
- *Natura 2000 Standard Data Forms; and*
- *Conservation Objectives and supporting documents.*

4.2 POTENTIALLY AFFECTED EUROPEAN SITES

The AA Screening identified two European sites with pathway receptors for potential effects from the implementation of the project (Table 2).

Table 2 European sites potentially affected by the proposed project

Site Code	European site	Distance (km)
000205	Malahide Estuary SAC	0.2
004025	Malahide Estuary SPA	0.58

4.3 IDENTIFYING AND CHARACTERISING POTENTIAL SIGNIFICANT EFFECTS

The following parameters are described when characterising impacts (following guidance from the Chartered Institute of Ecology and Environmental Management, Environmental Protection Agency and National Roads Authority):

Direct and Indirect Impacts - An impact can be caused either as a direct or as an indirect consequence of a proposed project.

Magnitude - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

Extent - The area over which the impact occurs – this should be predicted in a quantified manner.

Duration - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated; and
- Permanent: The effects would take 60+ years to be mitigated.

Likelihood – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted; and
- Extremely Unlikely: <5% chance as occurring as predicted.

The Chartered Institute of Ecology and Environmental Management guidelines for ecological impact assessment (2018) define: an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area; and the integrity of a site as the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of the NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of the features of interest within a site.

SSCOs have been prepared for a number of European sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a species can be described as being achieved when: 'population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.'

Favourable conservation status of a habitat can be described as being achieved when: 'its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable'.

Generic Conservation Objectives for cSACs have been provided as follows:

- *To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.*

One generic Conservation Objective has been provided for SPAs as follows:

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

EC guidance¹⁴ outlines the types of effects that may affect European sites. These include effects from the following activities:

- Land take;
- Resource requirements (drinking water abstraction etc.);
- Emissions (disposal to land, water or air);
- Excavation requirements;
- Transportation requirements; and
- Duration of construction, operation, decommissioning.

In addition, the guidance outlines the following likely changes that may occur at a designated site, which may result in effects on the integrity and function of that site:

- Reduction of habitat area;
- Disturbance to key species;
- Habitat or species fragmentation;
- Reduction in species density;
- Changes in key indicators of conservation value (water quality etc.); and
- Climate change.

The possible impacts to the European sites identified for Phase 2 assessment, relative to their conservation objectives are summarised in Table 3 below. Thereafter, the likely changes described in the CIEEM guidance extract above that may result in adverse effects on the integrity and functioning of the Stage 2 European sites, are assessed and discussed in the context of the Phase 2 European sites.

¹⁴ 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, European Commission Environment DG, 2001

Table 3 Characterisation of potential effects on the Qualifying Interests¹⁵ of European sites¹⁶

Site Code	Site Name	Distance (km)	Qualifying features (Qualifying Interests or Special Conservation Interests)	Characterization of Potential Effects ¹⁷	Potential Significant Effects	Mitigation Required
000205	Malahide Estuary SAC	0.2	<ul style="list-style-type: none"> Mudflats and sandflats not covered by seawater at low tide [1140] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] 	<p>These habitats are highly sensitive to changes in siltation loads, the distribution of silt loads, pollutants and water levels and anthropogenic disturbance.</p> <p>The operational phase elements of this project are identified to be consistent with the existing condition of the site and therefore there are no sources for effects identified in this regard. However, the construction phase elements such as drainage have potential to introduce sources adverse effects.</p> <p>Hydrological connectivity between the SAC and the proposed site, even though indirect, poses a risk of potential significant effects to the ecological integrity of the site and the habitats there in during the construction phase if not adequately mitigated against for the risk of excess release of siltation and pollutants into the system.</p> <p>Therefore, mitigation measures are required to ensure site run off control measures are implemented.</p>	Yes	Yes
004025	Malahide Estuary SPA	0.58	<ul style="list-style-type: none"> Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Pintail (<i>Anas acuta</i>) [A054] 	The proposed works do not have any direct pathways for effects of the species identified as SCIs for this SPA, however the habitats that support these species are highly sensitive to changes in siltation loads, the distribution of silt loads, pollutants and water levels and	Yes	Yes

¹⁵ QIs/SCIs¹⁶ Sites brought to Stage 2 assessment¹⁷ NPWS (2019). The Status of Protected EU Habitats and Species in Ireland. Overview Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

			<ul style="list-style-type: none"> • Goldeneye (<i>Bucephala clangula</i>) [A067] • Red-breasted Merganser (<i>Mergus serrator</i>) [A069] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Redshank (<i>Tringa totanus</i>) [A162] • Wetland and Waterbirds [A999] 	<p>anthropogenic disturbance. These species are also sensitive to disturbance effects such as noise.</p> <p>The operational phase elements of this project are identified to be consistent with the existing condition of the site and therefore there are no sources for effects identified in this regard. However, the construction phase elements, such as noise, dust and drainage have potential to introduce sources adverse effects.</p> <p>The possibility of a construction compound site on an area of improved agricultural grassland (just outside of the development area site boundary, on Fosterstown Lands adjacent to PinnockHill roundabout¹⁸). This is a habitat type that could be suitable for foraging/grazing by SCI species of this European site.</p> <p>Hydrological connectivity between the SPA and the proposed site, even though indirect, poses a risk of potential significant effects to the ecological integrity of the site and the species it supports during the construction phase if not adequately mitigated against for the risk of excess release of siltation and pollutants into the system.</p> <p>Therefore, mitigation measures are required to ensure site use, noise pollution and site run off control measures are implemented.</p>		
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¹⁸ See associated CEMP for proposed compound site locations.

4.3.1 LAND TAKE

The nearest European site is 0.58 km from the proposed site and all works will take place within the development area boundary. Therefore, there will be no land take or extraction from the European sites considered here as a result of the proposed project.

4.3.2 RESOURCE REQUIREMENTS (DRINKING WATER ABSTRACTION ETC.)

There are no resource requirements of the proposed project which take from any of the ecological resources necessary for the conservation objectives of the European sites identified. Therefore, there will be no interactions with resources necessary for the maintenance of the ecological integrity of any European sites.

4.3.3 EMISSIONS (DISPOSAL TO LAND, WATER OR AIR)

The operational phase of the proposed project will be consistent with existing condition and therefore there are no additional sources for effects in this regard. The construction phase elements of the project may give rise to increased temporary site effects such as noise or contamination due to dust, increased siltation or deposition in run off from locations of works or compound locations. Considering the sensitivities of the QI's for the Malahide Estuary Europeans sites (listed in Appendix II), elements of the construction phase of the proposed project have the potential to introduce effects to the hydrological functioning of European Sites, via existing urban drainage system pathways. Similarly, noise and dust pollution from the construction phase could introduce effects to the Europeans sites.

Thus, several mitigation measures have been detailed in section 5 in order to prevent significant adverse effects on the Qualifying Features of these protected sites. Such as a Outline CEMP detailing systems and processes for the protection of water with respect to additional silt load entrances via urban drainage (see section 5 for all mitigation measures).

4.3.4 EXCAVATION REQUIREMENTS

There will be moderate, temporary excavations in relation to the construction of the extended pathways and bike lanes, and 3 new intersection/roundabout layouts and other features of the proposed project as outlined in the Section 2 Project Description. The construction phase elements of the proposed project will be managed by the accompanying Outline CEMP. The Outline CEMP will ensure implementation of standard, best-practice protocols during construction. Any excess materials generated will be stockpiled and reused on site. None of the measures contained within the Outline CEMP are intended specifically to avoid effects to European sites, but form standard best practice processes. However, considering the proximity of the proposed project to hydrologically sensitive European sites, additional mitigation measures specific to drainage and run off pathways will be implemented, and are detailed in Section 5 below. In the absence of direct hydrological pathways, and addition of the specific drainage mitigation measures, excavation works during the construction phase will have localised effects. All surface water will be collected, attenuated and discharge at the green field runoff rates. Thus, given these protections and additional mitigation efforts, combined with the short-term nature of the potential effects (i.e., only during construction which will be adequately mitigated against), there will be no potential for effects to arise due to the implementation of the proposed project.

4.3.5 TRANSPORTATION REQUIREMENTS

There will be a minor short-term increase in traffic during the construction phase, however, these effects are adequately addressed in the Outline CEMP accompanying this application. Operational traffic will be very similar to current levels for this area and are thus considered to of negligible impact with regard to European sites as a result of this development - due to distances involved, the indirect pathways for potential effects identified and the similarity of the operational phase to the current environment.

4.3.6 DURATION OF CONSTRUCTION, OPERATION, DECOMMISSIONING

The proposed project duration is approximately 24 months. The road alterations will be a permanent feature with no decommissioning phase. The duration of the construction will have no effects on European sites given the distances, indirect pathways identified and mitigation measures identified. In addition to this the Outline CEMP will ensure all construction related effects are minimised and controlled.

4.3.7 REDUCTION OF HABITAT AREA

No Annex I habitats or supporting habitats for Annex II species were identified within the site development area boundary. There is also no aspect of the proposed project that will result in significant reduction of habitat area for these European sites. There is however, one site proposed as an option for a construction compound, in agricultural grassland to the south west of the development area boundary (on Fosterstown Lands adjacent to PinnockHill roundabout¹⁹), which has not been confirmed at the time of this report being completed. This potential construction compound site contains agricultural pasture that is approximately 2.2km from a European site (the Malahide Estuary SPA 004025), which is designated for SCI bird species (listed in Appendix III) that may utilise agricultural pasture for foraging grounds. The desk-based study did not identify this site as a known foraging ground for the SCI species of the Malahide Estuary SPA. This amounts to potential loss of potential foraging area, as it is currently unknown if this site is a foraging area for the SCI species of the Malahide Estuary SPA. Thus, following a precautionary approach, the assessment identifies that there is potential, based on the habitats available, that foraging of SCI species may occur at this site. If foraging occurs, the use of this space during the construction phase may introduce small scale, temporary disturbance effects through the loss of potential available forage. Given the context of the site; where there is available alternative foraging habitat elsewhere in the surrounding area, and the distance of 2.2km of the site from the Malahide Estuary SPA – it is not anticipated that this potential, short-term disturbance effect will have a likely significant impact on the ecological integrity of the Malahide Estuary SPA. However, the subsequent management of the site post-use as a construction compound site for the R132 Connectivity Project after the works have completed, has potential for significant impacts via duration of disturbance to a possible foraging site of SCI species, if the site is not returned to its original state. Thus, appropriate mitigation measures for this instance are specified in s5.1 below.

4.3.8 DISTURBANCE TO KEY SPECIES

None of the species and/or habitats identified in Table 1 were recorded on site. No habitats within the development area boundary were identified as being of support for any of the species identified in Table 1 for these European sites. There will be an increase in noise and dust levels during the construction phase, but these will be minor due to the already highly modified character of the receiving landscape and short-term duration of the construction phase which will be conducted in parts over the proposed 2-year period. The operational phase of the project will be very similar to the current noise and disturbance levels of the receiving environment. Therefore, pathways for disturbance effects due to noise, lighting or vibrations as a result of the proposed project to European sites are not present.

4.3.9 HABITAT OR SPECIES FRAGMENTATION OR REDUCTION IN SPECIES DENSITY

The existing site has low local ecological value, consisting of majority-built landscape (the R132 route itself), treelines, grass verges, recolonising bare ground and scrub, and some boundary hedgerows. There are no ecological features within the site that are of landscape scale importance. Works will be carried out with minimal alteration of existing treelines and hedgerows and removal only if necessary. Two segments of tree semi-mature treeline will be removed as a result of the proposed project, but these will be replaced (***need tree balance sheet to refer to***), so as there will be no net loss overall of trees within the project area as a result of the proposed project. Given the existing low ecological value of the development site, combined with the absence of landscape scale ecological features and

¹⁹ See associated CEMP for proposed compound site locations.

distance from all European sites, the proposal is considered to have no potential effects on any European site in this regard.

4.3.10 CHANGES IN KEY INDICATORS OF CONSERVATION VALUE (WATER QUALITY ETC.)

Additional mitigation measures regarding potential run off and deposition into surrounding underground drainage that indirectly connects to the European sites, will be implemented, alongside Outline CEMP protocols. The proposed site has low ecological value with low diversity, but with connectivity to the surrounding environment. Water quality is an important indicator for the integrity of the nearby European sites, so water quality will be monitored throughout the works as part of the Outline CEMP. There were no Annex I habitat features or supporting habitat for Annex II species found on site. During operational phase elements of the project will be in keeping with current levels of urban activity and functionality, and surface water runoff will occur via the already in place drainage system, with no significant change in the input load expected. Thus, there are not expected to be any significant adverse effects from this phase in regards to water quality for the nearby European sites. The construction phase will be planned and managed through Outline CEMP with respect to water quality, noise pollution, dust control measures and drainage. During the construction phase, all additional surface water, soils, silt and dust loads excavated, created or brought on site due to construction will be collected and managed with implementation of additional attenuation tanks, swales and catchment ditches, silt fences and silt socks, planned as appropriate for the level of works on the site and approved by a qualified hydrologist before works commence. These measures are outlined in the accompanying project Outline CEMP and Flood Risk Assessment and Drainage reports produced by DBFL Consultant Engineering, and in mitigation measures described herein.

Therefore, as a result of the Outline CEMP and water monitoring applied in the construction phase, the continuation of water quality monitoring in the operational phases, and additional mitigation measures being implemented during the construction phase for water as a significant indicator for the nearby European sites, there are expected to be no significant effects to any European site arising due to the implementation of the proposed project in this regard.

4.3.11 CLIMATE CHANGE

The emissions from the construction phase on the site will be closely regulated where possible and practicable via several measures set out in the Outline CEMP. As a result of these measures, emissions pertaining to climate during the construction phase should not significantly affect those already present within the landscape area as a result of the proposed works. During the operational phase, it is not foreseen that there will be potential for significant adverse effects to the European sites in terms of climate as the development will be similar in design, carrying capacity, functioning and emissions as it is in its current state. In addition, alterations to the surrounding environment will be kept to an absolute minimum as part of the project design, as detailed in the Outline CEMP and accompanying the proposed project application.

Due to the nature and scale of the emissions from proposed project's construction phase, and the similarity in carrying capacity and function of the operational phase, the effects of the proposed project on climate and Ireland's obligations under the Kyoto Protocol are not anticipated to be significant. Therefore, there will be no significant effects to any European site arising due to the implementation of the proposed project in this regard

5 MITIGATION MEASURES

This section outlines measures that need to be incorporated into the proposed project in order to mitigate against potential effects to European sites as identified above.

In order to demonstrate that there will be no adverse effects from the implementation of the proposed project, mitigation measures have been devised to be incorporated into an Outline CEMP to be used to reduce or avoid potential effects to the environment. All construction phase works will be carried out per the same principles for those set out in the Outline Construction Environment Management Plan (CEMP) submitted as part of this application. The commitments in the Outline CEMP are subject to agreement of An Board Pleanála.

5.1 MITIGATION MEASURES RELEVANT TO EUROPEAN SITES AND THE POTENTIAL EFFECTS IDENTIFIED

5.1.1 OUTLINE CEMP

The Outline CEMP contains details to minimise effects to a range of environmental factors including:

- Biodiversity;
- Soils, Geology and Hydrogeology;
- Hydrology;
- Noise and Vibration;
- Air Quality and Climate;
- Emergency spills;
- Environmental Control;
- Landscape Mitigation.

In light of the pathways for effects identified. The key elements of the Outline CEMP that address the potential effects to the qualifying features of the European sites identified above relate to:

- Soils, Geology and Hydrology;
- Hydrology;
- Emergency spills;
- Environmental Controls.

5.1.2 BIODIVERSITY

The following mitigation measures relating to the protection of biodiversity will apply during the construction phase of the proposed project:

- No vegetation clearance to take place between the breeding bird season of March 1st to August 31st.
- All trees to be felled will be replaced and a tree balance sheet to be produced illustrating a net loss of trees within the project area as a result of the proposed works.
- Lighting during the construction and operational phases installed with regard to best practice, and sensitive lighting for commuting bats and in keeping with current lighting conditions on site for the operational phase.
- Possible construction compound on Fosterstown Lands adjacent to PinnockHill roundabout²⁰: If this site is utilised as a construction compound during works, it is to be restored in full to the original condition as an agricultural pasture post-works taking place. As a result of this

²⁰ See associated Outline CEMP for proposed compound site locations.

precautionary mitigation measure, all potential effects associated with this compound site if it is utilised, will be small scale, and short-term regarding potential reduction in available habitat for foraging SCI species (listed in Appendix III) of the Malahide Estuary SPA.

- Any vegetation clearance or demolition of buildings required will only be undertaken subject to prior inspection and monitoring and directed by a suitably qualified ecologist;
- Although it is not anticipated that there will be any interface with invasive species, procedures will be put in place to prevent the spread of any Japanese Knotweed or Himalayan Knotweed within or outside the works area prior to any works commencing;
- Routine practice and procedures to prevent pollution of the environment will apply. These include:
 - During the construction stage, construction and site management practices will be implemented by the contractor;
 - Silt fences and grassed swales/catchment ditches will be constructed around the perimeter of work areas, compounds, storage yards and stockpile areas.
 - All material including oils, solvents and paints will be stored within temporary bunded areas or dedicated bunded containers;
 - Refuelling will take place in a designated bunded area away from surface water gullies, drains and water bodies, in the event of refuelling outside of this area, fuel will be transported in a mobile double skinned tank;
 - All machinery and plant used will be regularly maintained and serviced and will comply with appropriate standards to ensure that leakage of diesel, oil and lubricants is prevented;
 - Spill kits and hydrocarbon absorbent packs will be available and drip trays will be used during refuelling;
 - Drainage wardens/silt socks will be placed around drainage gullies connected to the live network;
 - Ongoing monitoring of the water receptors throughout the works;
 - Excavated material will be segregated into inert, non-hazardous and/or hazardous fractions;
 - The excavation and handling of inert material will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment.

5.1.3 SOILS, GEOLOGY AND HYDROGEOLOGY

The following mitigation measures relating to the protection of soils, geology and hydrogeology will apply during the construction phase of the proposed development:

- The construction works will be carried out with the least feasible disturbance of soils, thereby minimising the amount of excavated soil. The inert excavated soil will be reused within the project area wherever possible.
- Where applicable, design measures will be put forward to minimise the excavation of soil that cannot be reused due to their mechanical properties or contamination;
- All waste produced as part of the proposed development will be dealt with in accordance with the relevant waste and environmental management legislation;
- The contractor will be required to submit a Construction Waste Management Plan (CWMP) to the local authority for approval which will address all types of material to be disposed of;
- Where soil stripping and excavation occurs, the resulting excavated soil fractions will be segregated into material that can be disposed of in the appropriate manner in accordance with Waste Management legislation;
- Excess topsoil, inert soil, and all hazardous soil waste will be separately removed off site to an appropriately licenced facility by a licensed contractor;
- Non-hazardous waste exceeding inert Waste Acceptance Criteria (WAC) will be sent to a licensed non-hazardous landfill for disposal/recovery;
- Construction personnel will be required to wear appropriate Personnel Protection Equipment (PPE) and carry out other protective measures outlined in this OCEMP when handling hazardous waste;

- All associated hazardous waste residuals will be stored within temporary bunded storage areas prior to removal by an appropriate EPA approved waste management contractor for off-site treatment/recycling/disposal. Any other building waste will be disposed of within on-site skips for removal by a licensed waste contractor;
- For the importation of topsoil and imported good-quality granular soils materials, the material will be sourced from nearby sites where possible, in order to reduce transport distances;
- To minimise any impact on the underlying subsurface strata from material spillages, fuels, oils, solvents and paints used during construction will be stored within specially constructed bunded areas or within bunded containers;
- Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place away from surface water gullies or drains;
- Spill kits and hydrocarbon absorbent packs will be stored in the site compound and relevant personnel will be fully trained in the use of this equipment;
- Fuel for vehicles will be stored in a mobile double skinned tank;
- Silt and sediment barriers will be installed at the perimeter of earthworks construction areas to limit transport of erodible soils outside of the site; and
- Where applicable, all excavated and/or stripped surfaces will be covered with a required depth of topsoil to encourage the growth of the vegetation after the construction stage, in order to eliminate erosion and negative visual impacts.

5.1.4 HYDROLOGY

The following mitigation measures relating to the protection of water quality will apply:

- The CEMP will detail procedures for the control, treatment and disposal of potentially contaminated surface water including monitoring systems and oversight required throughout the construction phase.
- The contractor will be required to implement industry best practice pollution prevention measures in accordance with guidance documents (for example CIRIA Guideline Document C532 Control of Water Pollution from Construction Sites), during both construction and operation in order to control the risk of pollution to surface waters. In addition, pollution of aquatic systems during the construction phase will be reduced by the implementation of the protection measures as outlined in Section 4.1.3 of this CEMP.

The construction phase elements of the proposed project are identified to introduce localised effects for hydrology. The operational phase of the project is identified to have similar interactions with the surrounding environment, in terms of hydrology, as the current conditions within the project area. See the associated Environmental Impact Assessment Report (ER), section 7 for further details.

5.1.5 NOISE AND VIBRATION

The CEMP shall detail appropriate mitigation measures to manage any risk of noise impacting the community. The contract documents will clearly specify that the Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures. These measures will typically include:

- No plant used on site will be permitted to cause an ongoing public nuisance due to noise.
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.
- Vehicles required to wait on site will switch off engines.
- Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.

- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use.
- Any plant, such as generators or pumps, which is required to operate before 07:00hrs or after 19:00hrs will be surrounded by an acoustic enclosure or portable screens.
- Location of plant shall consider the likely noise propagation to nearby sensitive receptors.
- During the course of the construction programme, supervision of the works will include ensuring compliance with the noise limits prescribed.

Construction vibration management measures for the project shall include:

- A vibration monitoring programme should be adopted at the nearest properties during the most critical phases of construction e.g., rock breaking etc. to assure the property owners that the prescribed limits are not exceeded.

The construction phase elements of the proposed project are identified to introduce localised effects for noise and vibration. The operational phase of the project is identified to have similar interactions with the surrounding environment, in terms of noise and vibration, as the current conditions within the project area. See the associated Environmental Report (ER), section 6 for further details.

5.1.6 AIR QUALITY AND CLIMATE

The contractor is required to implement the following measures in relation to air quality and climate during construction:

- The coordination, implementation and ongoing monitoring of dust produced by site activities. The key aspects of controlling dust are listed below:
 - The development of a documented system for managing site practices with regard to dust control;
 - Spraying of exposed earthwork activities and site haul roads during dry weather; o Provision of wheel wash at exit points;
 - Covering of stockpiles;
 - Control of vehicle speeds, speed restrictions and vehicle access; and
 - Sweeping of hard surfaced roads;
 - Erection of a 2.4m high hoarding will be provided around work areas where allowable to minimise the dispersion of dust from working areas;
 - Stockpiles will be located as far away as possible from sensitive receivers and covered/dampened during dry weather;
- Generators will be located as far away as practicable from sensitive receivers;
- To prevent the harmful emissions from vehicle exhausts, on-site and delivery vehicles will be prevented from leaving engines idling, even over short periods.
- Where Asbestos Contaminated Material (ACM) is uncovered on site during construction, the ACM will be double-bagged and removed from site by a competent contractor and disposed of in accordance with the relevant procedures and legislation.

At all times, the measures used to control dust will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

To minimise effects to the climate through harmful emissions, the following controls shall be put in place:

- On-site and delivery vehicles will be prevented from leaving engines idling, even over short periods.

- Material wastage due to poor timing or over ordering on site will be minimised to reduce the embodied carbon footprint of the site.
- The travel distance required to complete the delivery of material and supplies shall be taken into account during procurement and minimised where possible.

The construction phase elements of the proposed project are identified to introduce localised effects for air quality and climate. The operational phase of the project is identified to have similar interactions with the surrounding environment, in terms of air quality and climate, as the current conditions within the project area. See the associated Environmental Report (ER), section 5 for further details.

5.1.7 EMERGENCIES

- The contractor shall prepare an Emergency Response Plan detailing the procedures to be undertaken in the event of a spill of chemical, fuel or other hazardous wastes, a fire, or non-compliance incident with any permit of license issues;
- The Emergency Response requirements will be displayed at several locations throughout site and at sensitive locations.
- The contractor shall ensure that relevant staff are trained in the use of spill kits.
- The contractor will prepare a site plan showing the location of all surface water drainage lines and proposed discharge points. This will also include the location of all existing and proposed surface water protection measures, including monitoring points, sediment traps, settling basins, interceptors etc.

5.1.8 ENVIRONMENTAL CONTROLS

- All roads, accesses, drains and ditches will be kept clear of all dirt, mud and material arising from the execution and completion of the Works and suitable clearing equipment and labour will be provided by the Contractor for this purpose.
- Attention will also be given to the loading of lorries carrying bulk materials into the Site and spoil from the Site to ensure that these will not be overloaded or are loaded in such a way that spillage is avoided. All trucks entering and exiting the site will be covered with a tarpaulin.
- Any dirt or mud adhering to the tyres or chassis of any vehicles will be thoroughly cleaned off before the vehicle is permitted to leave the Site. In the case of delivery to the Site, vehicles will be thoroughly cleaned before they leave the point of collection. The Contractor will be equally responsible for the vehicles of his subcontractors and suppliers and the like.
- The Contractor will allow for the installation and maintenance of an automatic wheel-washing unit on the entrance to the site. This will be available for use at all times. Maintenance will include for cleaning out of the equipment and disposal of any material gathered within. The Contractor must ensure that the required equipment for supplying water and power to the wheel washing facility are available and in good working order. At the end of the Contract, the Contractor must remove the wheel washing facilities in total from site.
- Local roads outside the site will be visually inspected daily for dirt and debris tracked from site and washed as required.

5.2 RESIDUAL EFFECTS

There are no residual effects identified to the ecological integrity of European sites given the similarity of the long-term operational phase to the current characteristics and usage of the site, and successful implementation of the mitigation measures within the CEMP and surface water management protocols identified above for both the construction and operational phases.

6 CONCLUSION

Stage 1 Screening and Stage 2 AA have been carried out. The implementation of the proposed project would have the potential to result in adverse effects to the integrity of any European sites, if unmitigated.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided.

In-combination effects from interactions with other plans and projects have been considered in the assessment. The mitigation measures incorporated into the design of the proposed project allow a conclusion to be arrived at that there will be no significant adverse effects as a result of the proposed project either alone or in-combination with other plans/projects.

Having incorporated mitigation measures, it is concluded that the proposed project will not give rise to any effect on the ecological integrity of any European sites, alone or in combination with other plans or projects²¹. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated.

²¹ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:

- a) no alternative solution available,
- b) imperative reasons of overriding public interest for the plan to proceed; and
- c) Adequate compensatory measures in place.

Appendix I Background information on European sites**European sites within 15km of the development area including the Qualifying features (Qualifying Interests or Special Conservation Interests) and Site-Specific Threats or Vulnerabilities**

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000199	Baldoye Bay SAC	Salicornia and other annuals colonizing mud and sand [1310], Mudflats and sandflats not covered by seawater at low tide [1140], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330]	K02.03, I01, F02.03.01, G01.01.02, E03, D01.02, J02.01.02, E01, F03.01, K03.06, G02.01, G01.02	Eutrophication (natural), Invasive non-native species, Bait digging or collection, Non-motorized nautical sports, Discharges, Roads, motorways, Reclamation of land from sea, estuary or marsh, Urbanised areas, human habitation, Hunting, Antagonism with domestic animals, Golf course, Walking, horseriding and non-motorised vehicles
000202	Howth Head SAC	European dry heaths [4030], Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230]	G05.04, I01, D01.01, E01, A04.03, J01.01, C01.01.01, G01.02, C01	Vandalism, Invasive non-native species, Paths, tracks, cycling tracks, Urbanised areas, human habitation, Abandonment of pastoral systems lack of grazing, Burning down, Sand and gravel quarries, Walking, horseriding and non-motorised vehicles, Mining and quarrying
000204	Lambay Island SAC	Grey seal (<i>Halichoerus grypus</i>) [1364], Reefs [1170], Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230], Common seal (<i>Phoca vitulina</i>) [1365]	F03.01, E01, E02, A03, G01.01, F02.03, A04	Hunting, Urbanised areas, human habitation, Industrial or commercial areas, Mowing or cutting of grassland, Nautical sports, Leisure fishing, Grazing
000205	Malahide Estuary SAC	Mudflats and sandflats not covered by seawater at low tide [1140], Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Cord-grass swards (<i>Spartina</i> swards (<i>Spartinion maritimae</i>)) [1320], Salicornia and other annuals colonizing mud and sand [1310], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") [2120]	D01.02, G01.02, J02.01.02, D01.05, A08, F03.01, G01.01, G02.01, I01, G01.03, E01	Roads, motorways, Walking, horseriding and non-motorised vehicles, Reclamation of land from sea, estuary or marsh, Bridge, viaduct, Fertilisation, Hunting, Nautical sports, Golf course, Invasive non-native species, Motorised vehicles, Urbanised areas, human habitation
000206	North Dublin Bay SAC	Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Petalwort (<i>Petalophyllum ralfsii</i>) [1395], Humid dune slacks [2190], Salicornia and other annuals colonizing mud and sand [1310], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")	G02.01, G01.02, E02, A04, E01, F02.03.01, I01, E03, G01.01, H01.09, G05.05, J01.01, K03.06, F02.03, H01.03	Golf course, Walking, horseriding and non-motorised vehicles, Industrial or commercial areas, Grazing, Urbanised areas, human habitation, Bait digging or collection, Invasive non-native species, Discharges, Nautical sports, Diffuse pollution to surface waters due to other sources not listed, Intensive maintenance of public parks or cleaning of beaches, Burning

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
		[2120], Shifting dunes (Embryonic shifting dunes) [2110], Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210]		down, Antagonism with domestic animals, Leisure fishing, Other point source pollution to surface water
000208	Rogerstown Estuary SAC	Atlantic salt meadows (Atlantic salt meadows (Glauco-Puccinellietalia maritima)) [1330], Fixed coastal dunes with herbaceous vegetation ("grey dunes") [2130], Salicornia and other annuals colonizing mud and sand [1310], Mudflats and sandflats not covered by seawater at low tide [1140], Shifting dunes along the shoreline with Ammophila arenaria ("white dunes") [2120], Estuaries [1130]	I01, J02.01.02, F02.03.01, G01.01, G02.01, A04, A07, E03, E01.03, K01.01, G01.02, A08, J02.12.01, D01.02	Invasive non-native species, Reclamation of land from sea, estuary or marsh, Bait digging or collection, Nautical sports, Golf course, Grazing, Use of biocides, hormones and chemicals, Discharges, Dispersed habitation, Erosion, Walking, horseriding and non-motorised vehicles, Fertilisation, Sea defense or coast protection works, tidal barrages, Roads, motorways
000210	South Dublin Bay SAC	Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210], Shifting dunes (Embryonic shifting dunes) [2110], Salicornia and other annuals colonizing mud and sand [1310]	J02.01.02, E02, G01.01, D01.01, F02.03.01, D01.02, M01, G01.02, H03, E01, K02, G01.01.02, K02.02, E03	Reclamation of land from sea, estuary or marsh, Industrial or commercial areas, Nautical sports, Paths, tracks, cycling tracks, Bait digging or collection, Roads, motorways, Changes in abiotic conditions, Walking, horseriding and non-motorised vehicles, Marine water pollution, Urbanised areas, human habitation, Biocenotic evolution, succession, Non-motorized nautical sports, Accumulation of organic material, Discharges
002193	Ireland's Eye SAC	Perennial vegetation of stony banks [1220], Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230]	G01.02, G01.01, A04.03, G05.01, J01, G02.09	Walking, horseriding and non-motorised vehicles, Nautical sports, Abandonment of pastoral systems lack of grazing, Trampling, overuse, Fire and fire suppression, Wildlife watching
003000	Rockabill to Dalkey Island SAC	Harbour porpoise (Phocoena phocoena) [1351], Reefs [1170]	J02.02, H06.01, J02.11, D02, E03, D03.02, F02.02	Removal of sediments (mud...), Noise nuisance, noise pollution, Siltation rate changes, dumping, depositing of dredged deposits, Utility and service lines, Discharges, Shipping lanes, Professional active fishing
004006	North Bull Island SPA	Eurasian oystercatcher (Haematopus ostralegus) [A130], Eurasian curlew (Numenius arquata) [A160], Common redshank (Tringa totanus) [A162], Sanderling (Calidris alba) [A144], Ruff (Philomachus pugnax) [A151], Bar-tailed godwit (Limosa lapponica) [A157], European golden plover (Pluvialis apricaria) [A140], Mallard (Anas platyrhynchos) [A053], Grey plover (Pluvialis squatarola) [A141], Ruddy turnstone (Arenaria interpres) [A169], Red knot (Calidris canutus) [A143], Common shelduck (Tadorna tadorna) [A048], Ringed plover (Charadrius	E02, D03.02, D01.05, E01.04, G02.01, D01.02, E03, G01.01, E01.01, G03, F02.03.01, G01.02	Industrial or commercial areas, Shipping lanes, Bridge, viaduct, Other patterns of habitation, Golf course, Roads, motorways, Discharges, Nautical sports, Continuous urbanisation, Interpretative centres, Bait digging or collection, Walking, horseriding and non-motorised vehicles

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
		hiaticula) [A137], Eurasian wigeon (<i>Anas penelope</i>) [A050], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Short-eared owl (<i>Asio flammeus</i>) [A222], Mew gull (<i>Larus canus</i>) [A182], Northern shoveler (<i>Anas clypeata</i>) [A056], Black-headed gull (<i>Larus ridibundus</i>) [A179], Northern pintail (<i>Anas acuta</i>) [A054], Eurasian teal (<i>Anas crecca</i>) [A052], Common greenshank (<i>Tringa nebularia</i>) [A164]		
004014	Rockabill SPA	Common tern (<i>Sterna hirundo</i>) [A193], Arctic tern (<i>Sterna paradisaea</i>) [A194], Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188], Roseate tern (<i>Sterna dougallii</i>) [A192]	D06, G01.01	Other forms of transportation and communication, Nautical sports
004015	Rogerstown Estuary SPA	Eurasian curlew (<i>Numenius arquata</i>) [A160], Common greenshank (<i>Tringa nebularia</i>) [A164], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Red knot (<i>Calidris canutus</i>) [A143], Greylag goose (<i>Anser anser</i>) [A043], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Ruff (<i>Philomachus pugnax</i>) [A151], Mallard (<i>Anas platyrhynchos</i>) [A053], Grey plover (<i>Pluvialis squatarola</i>) [A141], Common shelduck (<i>Tadorna tadorna</i>) [A048], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Greylag goose (<i>Anser anser</i>) [A043], Eurasian teal (<i>Anas crecca</i>) [A052], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Northern shoveler (<i>Anas clypeata</i>) [A056], European golden plover (<i>Pluvialis apricaria</i>) [A140], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Common snipe (<i>Gallinago gallinago</i>) [A153], Sanderling (<i>Calidris alba</i>) [A144], Common redshank (<i>Tringa totanus</i>) [A162], Eurasian wigeon (<i>Anas penelope</i>) [A050]	A04, I01, F03.01, G02.01, A08, J02.01, E03.02, E01.03, F02.03.01, G01.01, E03.01	Grazing, Invasive non-native species, Hunting, Golf course, Fertilisation, Landfill, land reclamation and drying out, general, Disposal of industrial waste, Dispersed habitation, Bait digging or collection, Nautical sports, Disposal of household or recreational facility waste
004016	Baldoyle Bay SPA	Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Eurasian teal (<i>Anas crecca</i>) [A052], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Common shelduck (<i>Tadorna tadorna</i>) [A048], Mallard (<i>Anas platyrhynchos</i>) [A053], Northern lapwing	J02.01.02, K02.03, F03.01, D01.02, G02.01, G01.02, A08, F02.03.01, E01, I01	Reclamation of land from sea, estuary or marsh, Eutrophication (natural), Hunting, Roads, motorways, Golf course, Walking, horseriding and non-motorised vehicles, Fertilisation, Bait digging or collection, Urbanised areas, human habitation, Invasive non-native species

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
		(Vanellus vanellus) [A142], Red knot (Calidris canutus) [A143], Common redshank (Tringa totanus) [A162], Common greenshank (Tringa nebularia) [A164], Eurasian oystercatcher (Haematopus ostralegus) [A130], Great crested grebe (Podiceps cristatus) [A005], Northern pintail (Anas acuta) [A054], Eurasian curlew (Numenius arquata) [A160], European golden plover (Pluvialis apricaria) [A140], Sanderling (Calidris alba) [A144], Grey plover (Pluvialis squatarola) [A141]		
004024	Sandymount Strand/Tolka Estuary SPA	Eurasian curlew (Numenius arquata) [A160], Roseate tern (Sterna dougallii) [A192], Bar-tailed godwit (Limosa lapponica) [A157], Red knot (Calidris canutus) [A143], Sanderling (Calidris alba) [A144], Mew gull (Larus canus) [A182], Common tern (Sterna hirundo) [A193], Grey plover (Pluvialis squatarola) [A141], Mediterranean gull (Larus melanocephalus) [A176], Great crested grebe (Podiceps cristatus) [A005], Great cormorant (Phalacrocorax carbo) [A017], Red-breasted merganser (Mergus serrator) [A069], Black-headed gull (Larus ridibundus) [A179], Ruddy turnstone (Arenaria interpres) [A169], Ringed plover (Charadrius hiaticula) [A137], Common redshank (Tringa totanus) [A162], Arctic tern (Sterna paradisaea) [A194], Eurasian oystercatcher (Haematopus ostralegus) [A130]	K02.03, G01.02, E02, F02.03, G01.01, E03, J02.01.02, E01, D01.02, F02.03.01	Eutrophication (natural), Walking, horseriding and non-motorised vehicles, Industrial or commercial areas, Leisure fishing, Nautical sports, Discharges, Reclamation of land from sea, estuary or marsh, Urbanised areas, human habitation, Roads, motorways, Bait digging or collection
004025	Broadmeadow/Swords Estuary SPA	Common shelduck (Tadorna tadorna) [A048], Grey plover (Pluvialis squatarola) [A141], Bar-tailed godwit (Limosa lapponica) [A157], Common greenshank (Tringa nebularia) [A164], Red-breasted merganser (Mergus serrator) [A069], Common redshank (Tringa totanus) [A162], Great cormorant (Phalacrocorax carbo) [A017], Common pochard (Aythya ferina) [A059], Northern lapwing (Vanellus vanellus) [A142], Eurasian oystercatcher (Haematopus ostralegus) [A130], Mallard (Anas platyrhynchos) [A053], Ruddy turnstone (Arenaria interpres) [A169], Sanderling (Calidris alba) [A144], Ringed plover (Charadrius hiaticula) [A137], Great crested grebe (Podiceps cristatus) [A005], Common goldeneye (Bucephala clangula) [A067], Mew gull (Larus	G01.02, G01.01, D01.04, D01.05, D01.01, A08, E02, J02.01.02, I01, E01	Walking, horseriding and non-motorised vehicles, Nautical sports, Railway lines, TGV, Bridge, viaduct, Paths, tracks, cycling tracks, Fertilisation, Industrial or commercial areas, Reclamation of land from sea, estuary or marsh, Invasive non-native species, Urbanised areas, human habitation

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
		canus) [A182], Red knot (<i>Calidris canutus</i>) [A143], Northern pintail (<i>Anas acuta</i>) [A054], European golden plover (<i>Pluvialis apricaria</i>) [A140], Ruff (<i>Philomachus pugnax</i>) [A151], Black-headed gull (<i>Larus ridibundus</i>) [A179], Eurasian curlew (<i>Numenius arquata</i>) [A160], Eurasian teal (<i>Anas crecca</i>) [A052]		
004069	Lambay Island SPA	Eurasian curlew (<i>Numenius arquata</i>) [A160], Purple sandpiper (<i>Calidris maritima</i>) [A148], Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188], Common shelduck (<i>Tadorna tadorna</i>) [A048], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Razorbill (<i>Alca torda</i>) [A200], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Lesser black-backed gull (<i>Larus fuscus</i>) [A183], Greylag goose (<i>Anser anser</i>) [A043], Atlantic puffin (<i>Fratercula arctica</i>) [A204], Northern fulmar (<i>Fulmarus glacialis</i>) [A009], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Peregrine falcon (<i>Falco peregrinus</i>) [A103], Manx shearwater (<i>Puffinus puffinus</i>) [A013], Common guillemot (<i>Uria aalge</i>) [A199], Greylag goose (<i>Anser anser</i>) [A043]	A03, D03.02, A04, E01.03, F03.01, G01.01	Mowing or cutting of grassland, Shipping lanes, Grazing, Dispersed habitation, Hunting, Nautical sports
004113	Howth Head Coast SPA	Razorbill (<i>Alca torda</i>) [A200], Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188], Peregrine falcon (<i>Falco peregrinus</i>) [A103], Common guillemot (<i>Uria aalge</i>) [A199], Northern fulmar (<i>Fulmarus glacialis</i>) [A009]	G01.02, J01	Walking, horseriding and non-motorised vehicles, Fire and fire suppression
004117	Ireland's Eye SPA	Northern gannet (<i>Morus bassanus</i>) [A016], Common guillemot (<i>Uria aalge</i>) [A199], Razorbill (<i>Alca torda</i>) [A200], Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Atlantic puffin (<i>Fratercula arctica</i>) [A204], Northern fulmar (<i>Fulmarus glacialis</i>) [A009], Peregrine falcon (<i>Falco peregrinus</i>) [A103]	F02.03, G01.02	Leisure fishing, Walking, horseriding and non-motorised vehicles
004122	Skerries Islands SPA	Common snipe (<i>Gallinago gallinago</i>) [A153], Purple sandpiper (<i>Calidris maritima</i>) [A148], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Northern lapwing (<i>Vanellus vanellus</i>) [A142], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Short-eared owl (<i>Asio flammeus</i>) [A222], Ruddy turnstone (<i>Arenaria</i>	G01.02	Walking, horseriding and non-motorised vehicles

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
		interpres) [A169], Eurasian curlew (Numenius arquata) [A160], Mallard (Anas platyrhynchos) [A053], Northern fulmar (Fulmarus glacialis) [A009], Grey plover (Pluvialis squatarola) [A141], Eurasian wigeon (Anas penelope) [A050], European golden plover (Pluvialis apricaria) [A140], Ringed plover (Charadrius hiaticula) [A137]		

Appendix II Qualifying Interests of SACs that have undergone assessment including summaries of current threats and sensitivities

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Annual vegetation of drift lines	[1210]	Grazing; sand and gravel extraction; recreational activities; coastal protection works.	Overgrazing and erosion. Changes in management.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	[1330]	Overgrazing; erosion; invasive species, particularly common cordgrass (<i>Spartina anglica</i>); infilling and reclamation.	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Overgrazing, erosion and accretion.
Embryonic shifting dunes	[2110]	Natural erosion processes exacerbated by recreation and sand extraction. Coastal protection interfering with natural processes.	Overgrazing, and erosion. Changes in management.
Estuaries	[1130]	Pollution, fishing /aquaculture and habitat quality.	Inappropriate development, changes in turbidity
European dry heaths	[4030]	Afforestation, overburning, over-grazing, under-grazing and bracken invasion.	Moderately sensitive to hydrological change. Changes in management. Changes in nutrient status.
Fixed coastal dunes with herbaceous vegetation (grey dunes)	[2130]	Recreation; overgrazing and inappropriate grazing: non-native plant species, particularly sea buckthorn (<i>Hippophae rhamnoides</i>).	Overgrazing, and erosion. Changes in management.
Grey Seal (<i>Halichoerus grypus</i>)	[1364]	Distance to human activities, accidental entanglement in fishing gear competition for prey resources, illegal killing, pollution and habitat degradation.	Prey availability, reduction in available habitat and water quality.
Humid dune slacks	[2190]	Agricultural improvement; overgrazing and inappropriate grazing; forestry; recreational activity.	Overgrazing, and erosion. Changes in management. Sensitive to hydrological change.
Mudflats and sandflats not covered by seawater at low tide	[1140]	Aquaculture, fishing, bait digging, removal of fauna, reclamation of land, coastal protection works and invasive species, particularly cordgrass; hard coastal defence structures; sea-level rise.	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Changes to salinity and tidal regime. Coastal development.
Perennial vegetation of stony banks	[1220]	Disruption of the sediment supply, owing to the interruption of the coastal processes, caused by developments such as car parks and coastal defence structures including rock armour and sea walls. The removal of gravel.	Marine water dependent. Low sensitivity to hydrological changes. Coastal development, trampling from recreational activity and gravel removal.
Petalwort (<i>Petalophyllum ralfsii</i>)	[1395]	There are no significant impacts affecting this species.	None identified.

Qualifying Interests	EU Code	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests
Harbour Seal (<i>Phoca vitulina</i>)	[1365]	Flooding and rising precipitations, urbanised areas, human habitation, diffuse pollution to surface waters due to household sewage and waste waters, leisure fishing, flooding modifications.	Changes in habitat, food resources, human waste from built environment and fisheries, noise and fisheries industries.
Harbour Porpoise (<i>Phocoena phocoena</i>)	[1351]	Pressures acting on the species in Irish waters mainly involve commercial vessel-based activities such as impacts arising from geophysical seismic exploration or from local/regional prey removal from fisheries.	Sensitive to disturbance, prey availability and pollution.
Reefs	[1170]	Professional fishing; taking for fauna; taking for flora; water pollution; climate change; and change in species composition.	Sensitive to disturbance and pollution.
Salicornia and other annuals colonising mud and sand	[1310]	Invasive Species; erosion and accretion.	Marine water dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Infilling, reclamation, invasive species.
Shifting dunes along the shoreline with white dunes (<i>Ammophila arenaria</i>)	[2120]	Recreation and coastal defences, which may interfere with local sediment dynamics.	Overgrazing, and erosion. Changes in management.
Spartina swards (<i>Spartinion maritimae</i>)	[1320]	None identified by the NPWS in the 2019 publication of the Status of EU protected habitats and species in Ireland.	Changes in hydrological characteristics, invasive species, grazing, interspecific floral competition and abiotic natural processes
Vegetated sea cliffs of the Atlantic and Baltic coasts	[1230]	A number of significant pressures were identified, including trampling by walkers, invasive non-native species, gravel extraction, and sea-level and wave exposure changes due to climate change. There have been no significant losses in sea cliff habitat since the Directive came into force.	Land use activities such as tourism and/or agricultural practices. Direct alteration to the habitat or effects such as burning or drainage.

Appendix III Special Conservation Interests of SPAs that have undergone assessment including vulnerabilities of the SCIs

Special Conservation Interests	Vulnerabilities of Special Conservation Interests
<p>Great crested grebe (<i>Podiceps cristatus</i>) [A005] Northern fulmar (<i>Fulmarus glacialis</i>) [A009] Manx shearwater (<i>Puffinus puffinus</i>) [A013] Northern gannet (<i>Morus bassanus</i>) [A016] Great cormorant (<i>Phalacrocorax carbo</i>) [A017] Greylag goose (<i>Anser anser</i>) [A043] Greylag goose (<i>Anser anser</i> [Iceland/UK/Ireland]) [A043] Common shelduck (<i>Tadorna tadorna</i>) [A048] Eurasian wigeon (<i>Anas penelope</i>) [A050] Eurasian teal (<i>Anas crecca</i>) [A052] Mallard (<i>Anas platyrhynchos</i>) [A053] Northern pintail (<i>Anas acuta</i>) [A054] Northern shoveler (<i>Anas clypeata</i>) [A056] Common pochard (<i>Aythya ferina</i>) [A059] Common goldeneye (<i>Bucephala clangula</i>) [A067] Red-breasted merganser (<i>Mergus serrator</i>) [A069] Peregrine falcon (<i>Falco peregrinus</i>) [A103] Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed plover (<i>Charadrius hiaticula</i>) [A137] European golden plover (<i>Pluvialis apricaria</i>) [A140] Grey plover (<i>Pluvialis squatarola</i>) [A141] Northern lapwing (<i>Vanellus vanellus</i>) [A142] Red knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Purple sandpiper (<i>Calidris maritima</i>) [A148] Ruff (<i>Philomachus pugnax</i>) [A151] Common snipe (<i>Gallinago gallinago</i>) [A153] Bar-tailed godwit (<i>Limosa lapponica</i>) [A157] Eurasian curlew (<i>Numenius arquata</i>) [A160] Common redshank (<i>Tringa totanus</i>) [A162] Common greenshank (<i>Tringa nebularia</i>) [A164] Ruddy turnstone (<i>Arenaria interpres</i>) [A169] Mediterranean gull (<i>Larus melanocephalus</i>) [A176] Black-headed gull (<i>Larus ridibundus</i>) [A179] Mew gull (<i>Larus canus</i>) [A182] Lesser black-backed gull (<i>Larus fuscus</i>) [A183] Black-legged kittiwake (<i>Rissa tridactyla</i>) [A188] Roseate tern (<i>Sterna dougallii</i>) [A192] Common tern (<i>Sterna hirundo</i>) [A193] Arctic tern (<i>Sterna paradisaea</i>) [A194] Common guillemot (<i>Uria aalge</i>) [A199] Razorbill (<i>Alca torda</i>) [A200] Atlantic puffin (<i>Fratercula arctica</i>) [A204] Short-eared owl (<i>Asio flammeus</i>) [A222]</p>	<ul style="list-style-type: none"> Bird species are particularly vulnerable to direct disturbance due to noise and/or vibration. These effects are localised and in keeping with the current levels for the proposed development. Direct habitat loss is a serious concern for bird species, as well as the reduction in habitat quality. Habitat degradation could occur through effects such as disturbance to potential grazing or foraging habitat via use of agricultural grassland habitat for a possible construction compound site. Prey species diversity and availability is a key element of species conservation, and can be sensitive to changes in siltation deposition within supporting habitat as a result of nearby construction works. Community dynamics and ecosystem functionality are complex concepts and require site specific information. The site synopsis and conservation objectives for the SPAs identified within the ZOI were used to identify any specific prey sensitivities. Vegetation composition, structure and functionality.
<p>Wetland and Waterbirds [A999]</p>	<ul style="list-style-type: none"> Direct land take is a common vulnerability to all sites; as well as significant water quality effects. The conservation objective of all SPAs designated for Wetland and Waterbirds is to maintain the favourable conservation condition of the wetland habitat as a resource for the regularly occurring migratory waterbirds using it.