

Dún Laoghaire Bus and Access Arrangements on Harbour Road

Ecological Impact Assessment

Dún Laoghaire and Rathdown County Council

Project number: 60697433

November 2023

Quality information

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1. Introduction

1.1 Background

AECOM Ireland Limited ('AECOM') was commissioned by Dún Laoghaire and Rathdown County Council (DLRCC) on behalf of the National Transport Authority (NTA) to carry out ecological surveys and prepare an Ecological Impact Assessment (EclA) in relation to the Dún Laoghaire Bus and Access Arrangements on Harbour Road (herein referred to as the 'Proposed Scheme') in the town of Dún Laoghaire. The extent of the Proposed Scheme is herein referred to as the 'Site', as shown in **Figure 1** provided in **Appendix A**.

The Proposed Scheme will bring about both design and capacity improvements for the existing bus interchange at Dún Laoghaire Dart Station. These improvements are required to accommodate the significant increase in bus services planned under the NTA's BusConnects programme. The design of the Proposed Scheme will require works to the existing road layout on Harbour Road as well as works on the public realm within the harbour area. The Proposed Scheme design will also consider the requirements for safe and efficient traffic, pedestrian and cyclist movement through and within the harbour area. The works of the Proposed Scheme comprises the provision of six bus spaces, the provision of a bus stop and bus shelter, joining of existing footpaths, footpath build out and removal and replanting of street trees. As such, the Proposed Scheme aims include:

- Target number of bays: 6 bus spaces;
- System Function: Independent Arrival and Departure bays;
- Provision of a bus stop along Harbour Road;
- Minimise impact on existing infrastructure and provide for bus turning movements;
- Buses must be able to turn around from westbound to eastbound;
- Maintain access to Harbour area and maintenance yard;
- Maintain existing footway to the south and provide footway to water edge; and
- Provide designated cycle track connecting to proposed Coastal Mobility Route.

1.2 Site Description

The approximate Ordnance Survey Ireland (OSi) grid reference of the centre of the Site O 24409 28830 and the Irish Transverse Mercator (ITM) coordinates of the Site are 724349, 728854. The Site is located in the urban, seaside town of Dún Laoghaire, on the outskirts of Dublin City Centre. The Site is centred on a section of the existing road network on Harbour Road and is located alongside the extents of the operational railway line and station which is directly adjacent to the southern boundary of the Site. The Site itself is largely dominated by hard-standing surfaces with some occasional treelines and areas of amenity grassland. The Survey Area (comprising the Site plus a 30 m buffer) contains limited natural habitats, generally only discreet areas of ornamental/non-native shrub planting, hedgerows and flower beds and borders. The closest freshwater waterbody to the Proposed Scheme is the culverted Monkstown Stream located approximately 980 m to the west of the Site. Dublin Bay and Dún Laoghaire harbour and associated marina is located approximately 85 m to the north of the Site.

1.3 Purpose of this Report

This EclA Report details the results of the desk study and field survey completed to establish the current baseline conditions at the Site. The predicted effects arising from the Proposed Scheme on identified ecological features – which includes all designated nature conservation sites, habitats, flora and fauna species and ecosystems – are described and, where necessary, appropriate and proportionate mitigation measures are prescribed.

This Report has been prepared as part of an application for planning permission for the Proposed Scheme. Other documents submitted with the planning application support this EclA Report and should be read in conjunction with it, in particular the Appropriate Assessment (AA) Screening Report (AECOM, 2023). The AA Screening

assesses the potential impacts of the Proposed Scheme on European sites (comprising Special Areas of Conservation (SAC) and Special Protection Areas (SPA)).

1.4 Quality assurance

This Report and the desk study and field survey described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment and sustainability management. All AECOM staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015, as well as BS OHSAS 18001:2007 that are relevant to consultancy service.

The field survey, data analysis and assessment were carried out by trained and experienced AECOM ecologists.

2. Legislative and planning context

This EclA has been carried out within the context of the relevant legislation as well as planning policy and plans as detailed in **Appendix B**.

3. Methods

3.1 Target ecological features

For the purposes of the inclusion in this EclA, the target ecological features (following guidance by CIEEM, 2019) of this are defined as:

- nature conservation sites including SPAs, SACs, Wetlands of International Importance (Ramsar sites), Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs).
- habitats and species listed on Annexes I and II, respectively, of the Habitats Directive, which listing indicates importance in a European context and affords protection if designated as Qualifying Interests (QI) of a SAC.
- species listed on Annex IV of the Habitats Directive, which are known as European Protected Species (EPS) and are subject to strict protection anywhere they occur.
- bird species listed on Annex I of the Birds Directive, which listing indicates importance in a European context and affords protection where designated as Special Conservation Interest (SCI) of an SPA.
- species listed on the Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 (together known as the 'Wildlife Acts');
- fish species and habitats protected under the Fisheries Consolidation Act 1959 (No. 14 of 1959), as amended, the Inland Fisheries Act 2010 (No. 10 of 2010) as amended, and the Local Government (Water Pollution Acts) 1977-1990, as amended;
- plant species listed on the Flora (Protection) Order, 2015 (S.I. No. 356/2015) (hereafter 'the Flora Protection Order');
- species and habitats listed on the National Biodiversity Action Plan 2017-2021.
- species that are Nationally Rare, Nationally Scarce or listed in Red Data Lists, which are published by the National Parks and Wildlife Service (NPWS) in collaboration with relevant Northern Irish agencies (e.g. Marnell *et al.*, 2019; Regan *et al.*, 2010, King *et al.*, 2011, Lockhart *et al.*, 2012, Nelson *et al.*, 2011; Nelson *et al.*, 2019; Wyse-Jackson *et al.*, 2016);
- red-listed birds in the Birds of Conservation Concern in Ireland (BoCCI) (Gilbert *et al.*, 2021); and
- invasive non-native species of plants and animals listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) (as amended), those of EU concern under the EU Invasive Alien Species Regulation, and those listed by the National Biodiversity Data Centre (NBDC) as High Impact and Medium Impact in Ireland.

Other species or habitats, that may be rare, scarce or otherwise notable, are included where deemed appropriate through available information and/or professional judgement.

Throughout this EclA Report, species are given their scientific name on first mention and common name only thereafter. Distances quoted are cited as the shortest boundary to boundary distance 'as the crow flies', unless otherwise specified.

3.2 Study Area

The 'Zone of Influence' (Zoi) of the Proposed Scheme is the area over which ecological features may be subject to significant effects as a result of its construction, operation and/or associated activities. The Zoi can extend beyond the boundary of the Proposed Scheme, for example where there are hydrological links extending beyond the Site boundary.

As recommended by CIEEM (2022), professionally accredited or published studies have been used to determine Zol. The Zol will vary for different ecological features depending on their sensitivity to any identified impact. The features affected could include designated sites, habitats, species, and the processes on which they depend.

As recommended by CIEEM guidance (2019), professionally accredited or published studies, where available, were used to determine the likely Zol, as well as professional judgement. However, CIEEM guidance also highlights that establishing the Zol should be an iterative process and can be informed by further desk study and field survey. Where limited information was available, the Precautionary Principle was applied and a Zol estimated on that basis.

The adopted Zol of the Proposed Scheme on relevant ecological features involved consideration of the following:

- review of professionally accredited and/or published literature;
- professional judgement; and,
- the results of baseline desk study and field survey carried out for the Proposed Scheme.

3.3 Consultation

There has been no specific consultation held with DLRCC for this EclA. However, the DLRCC ecologist has provided comments on other reports for the Proposed Scheme and has outlined the following general mitigation measures to be included in the tender contracts;

- Vegetation clearance of trees and scrub will be undertaken outside the bird breeding season (outside the 1st March to 31st August)
- An Environmental Method Statement will be provided for agreement with DLR and this should include the following ecological measures:
 - An Invasive Alien Species section with input from an Invasive Species specialist regarding the management and/or movements of soils and Invasive Alien Species on the proposed site.
 - All excavations/trenches/pits are covered at night to minimise the risk to nocturnal mammals which are known to occur in the general harbour area including protected species of otter and badger that traverse the harbour area and also other nocturnal mammals.

These measures have been included within this EclA.

3.4 Determination of baseline conditions

3.4.1 Desk study

A desk study was undertaken to identify relevant nature conservation designations, and records of protected and notable habitats and species potentially relevant to the Proposed Scheme. A stratified approach was taken during the desk study, based on the likely Zol of the Proposed Scheme on different ecological features. The desk study involved a review of the data sources described in **Table 3.1** to inform the baseline description of the Site and surrounding ecological conditions. The area covered by the desk study is herein after referred to as the 'Study Area'.

These sources were used to identify:

- international nature conservation designations (i.e. SAC, SPA and Ramsar sites) present within 15 km of the Proposed Scheme, or beyond where a link exists (e.g. hydrological connections);
- national nature conservation designations (i.e. NHA and pNHA) within 2 km or beyond where a link exists;
- local nature conservation designations (i.e. Ancient or Long-Established Woodland) within 2 km of the Study Area; and,
- records of protected and notable habitats and species within 2 km.

Table 3.1. Desk study data sources

Data source	Date accessed	Data obtained
Environmental Protection Agency (EPA) maps website (https://gis.epa.ie/EPAMaps/)	July 2023	<ul style="list-style-type: none"> • International designations within 15 km of the Proposed Scheme.

Data source	Date accessed	Data obtained
		<ul style="list-style-type: none"> National designations within 2 km of the Proposed Scheme. Information on watercourses, water quality, soils, and geology.
NPWS Protected Sites in Ireland website (https://www.npws.ie/protected-sites)	July 2023	<ul style="list-style-type: none"> Details on relevant designations.
NBDC (https://maps.biodiversityireland.ie/)	July 2023	<ul style="list-style-type: none"> Protected and notable species within 2 km of the Proposed Scheme.
<i>The Status of EU Protected Habitats and Species in Ireland</i> (Article 17 Report) (https://www.npws.ie/publications/article-17-reports/article-17-reports-2019)	July 2023	<ul style="list-style-type: none"> Information on the status of EU protected habitats and species in Ireland.
Ordnance Survey Ireland maps and aerial photography (https://www.osi.ie/)	July 2023	<ul style="list-style-type: none"> Habitats and connectivity relevant to use of the site of the Proposed Scheme.
Google Maps (https://www.google.ie/maps) and Google Earth (https://earth.google.com)	July 2023	<ul style="list-style-type: none"> Aerial Imagery.
NBDC (https://maps.biodiversityireland.ie/) Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) Landscape conservation for Irish bats & species-specific roosting characteristics. Bat Conservation Ireland.	July 2023	<ul style="list-style-type: none"> Suitability index of Site and surrounding landscape for bat species.
Ancient or Long-Established Woodland https://dahg.maps.arcgis.com/apps/webappviewer	July 2023	<ul style="list-style-type: none"> Ancient or Long-Established Woodland within 2 km of the Study Area
Ramsar sites (https://www.irishwetlands.ie/irish-sites/)	July 2023	<ul style="list-style-type: none"> Ramsar sites within 15 km of the Proposed Scheme

3.4.2 Field survey

An ecological walkover survey was undertaken in July 2023 by suitably qualified AECOM ecologists, with extensive survey experience. The scope of the survey described in this Report was informed by the guidance contained within published documents referenced in **Appendix B**, and on the results of the desk study and the field survey carried out to establish the baseline ecological conditions.

Based on an initial desk study, including a review of biological records and aerial imagery of the Site, a number of ecological features were excluded from targeted field survey, as set out in **Table 3.2**.

Table 3.2. Ecological features excluded from targeted field survey

Ecological feature(s)	Scope of survey	Reason(s) for exclusion from targeted field survey
Otter <i>Lutra lutra</i>	During the habitat walkover survey (as detailed in Section 3.4.2.1), habitat suitability for otter within the Survey Area (i.e., within the Site plus a 30 m buffer, where accessible) was assessed.	A targeted survey for otter was not carried out given the lack of suitable habitat within the Survey Area. The NBDC search returned records of otter indicating their presence in Dún Laoghaire harbour. Dún Laoghaire harbour is approximately 85 m at the closest point from the Site but there are no waterbodies within the Site. The nearest freshwater waterbody to the Proposed Scheme is the culverted Monkstown Stream located approximately 0.98 km to the west of the Site, across intervening buildings and hard-standing. Therefore, even if otter do occur within Dún Laoghaire harbour, there is no possibility of otter being affected by the Proposed Scheme given the lack of waterbodies and suitable habitat within the Survey Area.

Ecological feature(s)	Scope of survey	Reason(s) for exclusion from targeted field survey
Bats	Bat roost assessment surveys were undertaken (as detailed in Appendix C) Habitat suitability for bats within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	Bat activity surveys were not undertaken given that the Proposed Scheme is within a highly urbanised area which is dominated by hardstanding and buildings. The Site lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit residential gardens may offer limited opportunities. It is possible that these species may occur on Site and / or within the surrounding area, but potential effects of the Proposed Scheme can be mitigated through standard measures.
Badger <i>Meles meles</i>	Habitat suitability for badger within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	A targeted badger survey was not carried out given the lack of suitable habitat within the Survey Area. It is possible that badger may occur within the surrounding area, but potential effects of the Proposed Scheme can be mitigated through standard measures.
Irish hare <i>Lepus timidus hibernicus</i> , hedgehog <i>Erinaceus europaeus</i> , pygmy shrew <i>Sorex minutus</i> , Irish stoat <i>Mustela erminea Hibernica</i> , red squirrel <i>Sciurus vulgaris</i>	Habitat suitability for Irish hare, hedgehog, pygmy shrew, Irish stoat, and red squirrel within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	No targeted field surveys were carried out for Irish hare, hedgehog, pygmy shrew, Irish stoat, and red squirrel because these species are either fairly common and widespread across Ireland and/or because the completed habitat survey provides a suitable indication of their likely presence or absence. There is a lack of suitable habitat within the Survey Area and in particular, for pine marten and red squirrel. These species prefer large areas of woodland habitat which is absent from the Proposed Scheme and adjacent areas. Therefore, these species are considered likely to be absent from the Zol of the Proposed Scheme. It is possible that hedgehog, Irish stoat, pygmy shrew may occur within habitats in the surrounding area for foraging and shelter but will not be located within the Site due to lack of habitats to support them.
Common lizard <i>Zootoca vivipara</i>	Habitat suitability for common lizard within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	No targeted field surveys were carried out for common lizard given this species is relatively common and widespread. Furthermore, there are no habitats present within the Site to support common lizard.
Breeding birds / non-breeding waterbirds	Habitat suitability for breeding birds / non-breeding waterbirds within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	No targeted surveys were carried out for breeding birds / non-breeding birds, given a) the minimal removal of vegetation required for the Proposed Scheme, and b) the lack of suitable habitat for non-breeding birds. Thus, breeding bird and non-breeding bird surveys were deemed unnecessary. While it is possible that these species may occur within the surrounding area, the indirect disturbance effects of the Proposed Scheme can be mitigated through standard measures.
Invertebrates	Habitat suitability for invertebrates within the Survey Area was assessed during	No targeted field surveys were carried out for invertebrates because these species are

Ecological feature(s)	Scope of survey	Reason(s) for exclusion from targeted field survey
	the habitat walkover survey (as detailed in Section 3.4.2.1).	either fairly common and widespread across Ireland. It is possible that these species may occur within the surrounding area, but there are no areas of suitable habitat to support notable assemblages of invertebrates in the Site.
Amphibians – smooth newt <i>Lissotriton vulgaris</i> and common frog <i>Rana temporaria</i>	Habitat suitability for smooth newt and common frog within the Survey Area was assessed during the habitat walkover survey (as detailed in Section 3.4.2.1).	No targeted field surveys were carried out for amphibians given that the nearest waterbody to the Proposed Scheme, which is the culverted freshwater Monkstown Stream, is approximately 0.98 km distant from the Site and is located across intervening buildings and hard-standing. Therefore, there is no possibility of amphibians being affected by the Proposed Scheme given the lack of waterbodies and suitable habitat within the Survey Area for these species.

All survey data were recorded using Esri Field Maps application on a handheld mobile mapping device. Use of GPS and aerial imagery allowed for relatively accurate locational data to be recorded on-Site. A description of the methods adopted for all ecological field surveys is provided under the following sub-headings.

3.4.2.1 Habitat survey

The walkover involved an inspection of habitats in accordance with *A Guide to Habitats in Ireland* (Fossitt, 2000) and *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011). The survey involved categorising habitat types and habitat features within the Survey Area. The information gained from the survey was used to determine the importance of ecological features within the Survey Area, and to identify the requirement for any specific survey work which may be needed prior to the construction of the Proposed Scheme. In addition, a search for evidence of protected and notable species or invasive non-native species (INNS) was also carried out as part of the ecological walkover.

Habitats present within the Survey Area were mapped, along with any observed relevant ecological constraints. Where ecological constraints were present, Target Notes were recorded and the position of these noted on the Fossitt habitat map. Typical and notable plant species were recorded for each key habitat type and reflected the conditions at the time of survey. Nomenclature was according to Stace (2019).

3.4.2.2 Invasive non-native plant species

During the walkover survey, a search was made for Scheduled¹ invasive species and species listed as invasive species of high, and medium-impact in Ireland by the NBDC. Locations of such species were mapped, and notes were made including species, extent, maturity, and evidence of treatment.

3.4.2.3 Potential to support protected and notable species

The standard habitat survey method was 'extended' to identify the potential of habitats or features (e.g. built features) to support protected and notable species. When encountered, direct sightings and indirect signs (e.g. field signs) of protected species or auditory evidence were recorded.

3.5 Assessment methodology

3.5.1 Ecological Impact Assessment

The assessment of potential impacts and effects on biodiversity follows Irish National Road Authority (NRA) (now Transport Infrastructure Ireland (TII)) and CIEEM guidance on ecological impact assessments. CIEEM is the leading professional membership body for ecologists in both the UK and Ireland. It provides advice, upholds standards in professional conduct and promotes best practice. Guidance in CIEEM (2022) broadly agrees with guidance in EPA (2022) and guidance issued by NRA (2009b) (now TII). The latter is commonly used in Ireland

¹ Invasive non-native species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

and provides detail on the use of a geographical scale of importance, which broadly concurs with CIEEM guidance.

The principal steps in the EclA are therefore:

- baseline conditions are determined by obtaining data on potentially affected ecological features through targeted desk study and field survey (both at expected project commencement and, for comparison, at a future point in the absence of the project).
- the importance of ecological features identified in the baseline is evaluated in a geographic context, determining those that require more detailed assessment.
- the potential impacts of the project that could affect ecological features are described, considering embedded mitigation and accounting for best practice and legislative requirements.
- the likely effects on ecological features are assessed and as far as possible quantified.
- measures are developed to mitigate (by avoidance or reduction), or if necessary, compensate, for likely significant adverse effects, in conjunction with other design elements.
- the significance of residual effects (beneficial or adverse) is reported.
- scope for ecological enhancement is considered.

The assessment employs the professional judgement of experienced ecologists as necessary.

An ecological feature is a site, habitat, or species of nature conservation value. Only those that are ‘important’ and could be significantly affected by the project require detailed assessment: *“it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable”* (CIEEM, 2022). This is consistent with the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) which requires investigation of likely significant effects, as accordingly emphasised by EPA (2022). NRA (2009b) prescribes a similar approach, stating that ecological features of less importance than Local (Higher) should not be subject to detailed assessment.

Existing data and criteria (e.g. Irish Red List status) are considered when determining the importance of ecological features. Where these are lacking, it is necessary to apply professional judgement. Factors considered include:

- abundance/rarity, endemism, mobility and distribution (particularly if this is changing);
- size/extent, viability, rate of decline and vulnerability;
- typicalness, species-richness, structure and connectivity/fragmentation;
- function/value to other features (e.g. habitats of notable species or buffers against impacts); and,
- restoration potential.

Compliance with legislation is relevant but, along with priority listing, does not necessarily translate to importance. For example, a transitory roost of a single bat would not be afforded the same importance as a regularly occurring maternity roost, although legal obligations must still be met, and areas of priority habitat could be unfavourably small or in poor condition and not practically restorable.

The importance of ecological features is described within a geographic scale. Examples of types of ecological features which might fall into the importance categories are given in **Table 3.3** which is adapted from CIEEM (2022).

Table 3.3. Geographical scale of importance

Importance	Example features (subject to professional judgement)
International	<ul style="list-style-type: none"> • Internationally designated nature conservation site (or candidate / proposed international site), or site satisfying criteria for such designation, or feature essential to maintaining such sites. • Sustainable area (or part of a larger sustainable area) of best examples of Annex I habitat. • A regularly occurring internationally significant population (e.g., 1% of the international population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of internationally important species listed on Annex I of the Birds Directive or Annex II of the Habitats Directive.

Importance	Example features (subject to professional judgement)
National	<ul style="list-style-type: none"> Nationally designated nature conservation site (or proposed such site), or site satisfying criteria for such designation. Sustainable area of good quality Annex I habitat not deemed to be of international importance, or of national priority habitat, which is a significant proportion of the resource. Regularly occurring nationally significant population (e.g., 1% of the national population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Wildlife Acts or Red Data Lists, or site supporting one.
County	<ul style="list-style-type: none"> County designated nature conservation site (or proposed such site). Sustainable area of Annex I habitat or national priority habitat not deemed to be of higher importance (e.g., lower quality, highly fragmented, small and / or low restoration potential), or priority habitat under a Local Biodiversity Action Plan if this exists and applies at county level. Regularly occurring County significant population (e.g., 1% of county resource, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Habitats / Birds Directives, Wildlife Acts, Red Data Lists or Local Biodiversity Action Plan (if this exists and applies at county level), or site supporting one.
Local (5 km radius)	<ul style="list-style-type: none"> Priority habitat of insufficient size or quality for higher importance or degraded with low restoration potential. Habitat providing significant biodiversity or important ecological corridors in a local context. Small sustainable population of notable species not qualifying for higher importance or uncommon locally.
Site	<ul style="list-style-type: none"> Common, heavily managed and/or modified habitat, and common, widespread and/or managed species.

Under CIEEM (2022) guidance there is a distinction between impact and effect. An impact is an action on an ecological feature (e.g., hedgerow removal, loss of a bat roost). An effect is the outcome of that impact on an ecological feature (e.g., effect of hedgerow loss on breeding birds, effect of bat roost loss on the conservation status of the bat species).

Impacts may occur during the construction and operational phases of a development. They may be direct or indirect (also termed 'secondary'). Direct impacts are attributable to an action associated with a development. Indirect impacts are often produced away from a development or as a result of other initial impacts.

Likely impacts / effects are characterised using those parameters below that are necessary to understand them:

- direction / quality:** whether the impact/effect be beneficial, neutral or adverse.
- magnitude:** the 'size', 'amount' or 'intensity' of an impact/effect, quantified as far possible.
- extent:** the spatial or geographical area or distance over which the impact/effect occurs.
- duration:** the time over which an impact/effect is expected to last before recovery or replacement (if possible) of the feature. Where appropriate, ecological aspects such as lifecycles are considered. The duration of an effect may be longer than the duration of an activity or impact.
- timing/frequency:** timing is important since an impact/effect might not occur if it avoids critical seasons or life stages. Frequency considers activity repetition, which may have greater impact.
- reversibility:** whether the impact/effect is temporary or permanent. A temporary impact/effect is one from which recovery is possible or for which effective mitigation is possible and enforceable. A permanent impact/effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

Consideration is given to conservation objectives, whether processes within sites will be altered, effects on habitats and species population size/viability and whether these will have an effect on conservation status. Conservation status is a function of the abundance and distribution of species and the extent, structure and function and typical supported species of habitats.

Consideration is given to cumulative effects, since impacts acting in combination may have a cumulative effect exceeding that of the separate impacts. Cumulative effects may arise from a combination of impacts from the development itself (e.g. impacts at the construction and operation stages), or the combined impacts from different developments.

An effect (positive or negative) is significant at a specified geographical level if it affects the ecological integrity of a site or ecosystem or the conservation status of a species or habitat at that geographical level. If not significant

at the level it was considered important, an effect could be significant at a lower geographic level (for example, an effect on a nationally important species may not be significant to the national population). These assessments are based on quantitative evidence where possible and as necessary through the professional judgement of experienced ecologists.

Initially, the effect significance does not consider mitigation (avoidance or reduction) or compensation measures unless these are explicitly embedded into the design of the development. The residual effect significance takes account of additional agreed and enforceable mitigation or compensation measures that are considered necessary, with the aim that, wherever possible, residual effects are not significant or are significant at a lower geographic level than the unmitigated effects.

The CIEEM guidelines (2022) advises that where there is reasonable doubt and a conclusion of no significant effect cannot be robustly reached, this uncertainty should be acknowledged and a significant effect assumed, in line with the precautionary principle.

3.5.2 Approach to mitigation

The Proposed Scheme has considered and engaged the following mitigation hierarchy where there is potential for impacts on relevant ecological features:

- avoid features where possible.
- reduce impact by design, method of working or other measures (mitigation) (e.g., by enhancing existing features).
- compensate for significant residual effects (e.g., by providing suitable habitats elsewhere on the client-owned parts of the wider site).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation is provided, including sufficient detail to show that these measures are feasible and will be provided.

In pursuance of the objectives within the DLRCC biodiversity action plan (DLRCC, 2021) for providing biodiversity benefits where possible, consideration will be also given (where appropriate) for ecological enhancement to be delivered as part of the next phases of design of the Proposed Scheme.

3.6 Limitations and assumptions

The aim of a desk study is to help characterise the baseline context of the Site and provide valuable background information that would not be captured by a single site survey alone. Desk study information is dependent on records having been submitted for the area of interest. Desk study information is dependent on records having been submitted for the area of interest. As such, a lack of records for particular habitats or species does not necessarily mean they are absent from the area of interest. Similarly, the presence of records for particular habitats and species does not automatically mean they still occur within the area of interest or are relevant in the context of the Proposed Scheme.

Where habitat boundaries coincide with discernible boundaries on recent aerial photography (where available) the resolution is as determined by the accuracy and clarity of the aerial photography. Otherwise, habitat mapping is as estimated in the field. Where areas of habitat are given, they are approximate and should be verified by measurement to the Proposed Scheme if required for design or construction.

This ecological assessment has been conducted as robustly as possible in the context of these restrictions and the limitations are not considered to undermine the outcomes of this EclA.

4. Baseline conditions

4.1 Nature conservation designations

4.1.1 International nature conservation designations

There are no international nature conservation designations within the Site but there are 23 international nature conservation designations comprising ten SACs, ten SPAs and three Ramsar sites located entirely or partially within the Study Area.

Details of all SACs, SPAs and Ramsar sites within the Study Area are presented in

Table 4.1. The locations of these designations in relation to the Proposed Scheme are shown on **Figure 1** in **Appendix A**. Sites are listed by distance from the Site, with those closest described first.

Table 4.1. International nature conservation designations

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
South Dublin Bay and River Tolka Estuary SPA [004024]	<ul style="list-style-type: none"> • Light-bellied brent goose <i>Branta bernicla hrota</i> [A046] • Oystercatcher <i>Haematopus ostralegus</i> [A130] • Ringed plover <i>Charadrius hiaticula</i> [A137] • Grey plover <i>Pluvialis squatarola</i> [A141] • Knot <i>Calidris canutus</i> [A143] • Sanderling <i>Calidris alba</i> [A144] • Dunlin <i>Calidris alpina</i> [A149] • Bar-tailed godwit <i>Limosa lapponica</i> [A157] • Redshank <i>Tringa totanus</i> [A162] • Black-headed gull <i>Chroicocephalus ridibundus</i> [A179] • Roseate tern <i>Sterna dougallii</i> [A192] • Common tern <i>Sterna hirundo</i> [A193] • Arctic tern <i>Sterna paradisaea</i> [A194] • Wetland and waterbirds [A999] 	670 m to the northwest of the Site. No direct hydrological connection to the Site.
South Dublin Bay SAC [000210]	<ul style="list-style-type: none"> • Tidal mudflats and sandflats [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2210] 	1.2 km to the northwest of the Site. No direct hydrological connection to the Site.
Sandymount Strand/Tolka Estuary Ramsar Site [832]	<ul style="list-style-type: none"> • The Site consists of extensive intertidal mud and sand flats, an intertidal biogenic reef, and a small section of saltmarsh. The sands support the largest stand of seagrass <i>Zostera noltii</i> beds on the east coast of Ireland. South Dublin Bay supports Mediterranean gull <i>Larus melanocephalus</i> and is a regular autumn roosting ground for significant numbers of terns. 	1.2 km to the northwest of the Site. No direct hydrological connection to the Site.
Rockabill to Dalkey Island SAC [003000]	<ul style="list-style-type: none"> • Reefs [1170] • Harbour porpoise <i>Phocoena phocoena</i> [1351] 	2.8 km to the east of the Site. No direct hydrological connection to the Site.
Dalkey Islands SPA [004172]	<ul style="list-style-type: none"> • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194] 	3.1 km to the southeast of the Site. No direct hydrological connection to the Site.
North Dublin Bay SAC [000206]	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows [1330] • Mediterranean salt meadows [1410] 	5.6 km to the east and north of the Site. No direct hydrological connection to the Site.

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
	<ul style="list-style-type: none"> • Embryonic shifting dunes [2210] • Shifting dunes along the shoreline with white dunes <i>Ammophila arenaria</i> [2120] • Fixed dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • Petalwort <i>Petalophyllum ralfsii</i> [1390] 	
North Bull Island SPA [004006]	<ul style="list-style-type: none"> • Light-bellied brent goose [A046] • Shelduck <i>Tadorna tadorna</i> [A048] • Teal <i>Anas crecca</i> [A052] • Pintail <i>Anas acuta</i> [A054] • Shoveler <i>Anas clypeata</i> [A056] • Oystercatcher [A130] • Golden plover <i>Pluvialis apricaria</i> [A140] • Grey plover [A141] • Knot [A143] • Sanderling [A144] • Dunlin [A149] • Black-tailed godwit <i>Limosa limosa</i> [A156] • Bar-tailed godwit [A157] • Curlew <i>Numenius arquata</i> [A160] • Redshank [A162] • Turnstone <i>Arenaria interpres</i> [A169] • Black-headed gull [A179] • Wetland and waterbirds [A999] 	5.6 km to the north of the Site. No direct hydrological connection to the Site.
North Bull Island Ramsar Site [406]	<ul style="list-style-type: none"> • The Site covers most of an island within the wider coastal and estuarine waters of Dublin Bay. Salt marshes extend along the length of the landward shore, and a well-developed and dynamic dune system along the seaward shore, where annual vegetation of drift lines is found in places. The dunes and salt marshes support characteristic plant communities and a number of rare plants which are legally protected. The intertidal habitats feature a rich macrofauna, small areas of eel grass and, in the summer months, green algal mats. The wider estuarine complex provides feeding and roosting habitat for more than 1% of the global population of more than 20 wintering birds, including black-tailed godwit and light-bellied brent goose. The Site also supports notable invertebrates. 	5.6 km to the north of the Site. No direct hydrological connection to the Site.
North-West Irish Sea cSPA	<ul style="list-style-type: none"> • Common scoter <i>Melanitta nigra</i> [A065] • Red-throated diver <i>Gavia stellata</i> [A001] 	6.2 km to the north of the Site. No direct hydrological connection to the Site.

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
	<ul style="list-style-type: none"> • Great northern diver <i>Gavia immer</i> [A003] • Fulmar <i>Fulmarus glacialis</i> [A009] • Manx shearwater <i>Puffinus puffinus</i> [A013] • Shag <i>Phalacrocorax aristotelis</i> [A018] • Cormorant <i>Phalacrocorax carbo</i> [A017] • Little gull <i>Larus minutus</i> [A177] • Kittiwake <i>Rissa tridactyla</i> [A188] • Black-headed gull [A179] • Common gull <i>Larus canus</i> [A182] • Lesser black-backed gull <i>Larus fuscus</i> [A183] • Herring gull <i>Larus argentatus</i> [A184] • Great black-backed gull <i>Larus marinus</i> [A187] • Little tern <i>Sterna albifrons</i> [A195] • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194] • Puffin <i>Fratercula arctica</i> [A204] • Razorbill <i>Alca torda</i> [A200] • Guillemot <i>Uria aalge</i> [A199] 	
Howth Head SAC [000202]	<ul style="list-style-type: none"> • Vegetated sea cliffs [1230] • Dry heath [4020] 	8.1 km to the north of the Site. No direct hydrological connection to the Site.
Howth Head Coast SPA [004113]	<ul style="list-style-type: none"> • Kittiwake [A188] 	9.1 km to the north of the Site. No direct hydrological connection to the Site.
Ballyman Glen SAC [000713]	<ul style="list-style-type: none"> • Petrifying springs with tufa formation <i>Cratoneurion</i> [7220] • Alkaline fens [7230] 	10 km to the south of the Site. No direct hydrological connection to the Site.
Knocksink Wood SAC [000725]	<ul style="list-style-type: none"> • Petrifying springs with tufa formation <i>Cratoneurion</i> [7220] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> <i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i> [91E0] 	10.4 km to the south of the Site. No direct hydrological connection to the Site.
Baldoyle Bay SAC [000199]	<ul style="list-style-type: none"> • Tidal mudflats and sandflats [1140] • <i>Salicornia</i> mud [1310] • Atlantic salt meadows [1330] • Mediterranean salt meadows [1410] 	10.8 km to the north of the Site. No direct hydrological connection to the Site.
Baldoyle Bay SPA [004016]	<ul style="list-style-type: none"> • Light-bellied brent goose [A046] • Shelduck [A048] 	10.8 km to the north of the Site. No direct hydrological connection to the Site.

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
	<ul style="list-style-type: none"> • Ringed plover [A137] • Golden plover <i>Pluvialis apricaria</i> [A140] • Grey plover [A141] • Bar-tailed godwit [A157] • Wetland and waterbirds [A999] 	
Baldoyle Bay Ramsar Site [413]	<ul style="list-style-type: none"> • Baldoyle Bay is part of the Dublin Bay wetlands complex. In the inner estuary there are extensive beds of common cord-grass, while seawards vast mudflats are exposed at low tide. These habitats provide good quality feeding areas and roost sites for a wide range of birds such as the regionally threatened light-bellied brent goose which winters there, and the nationally threatened Eurasian oystercatcher. 	10.8 km to the north of the Site. No direct hydrological connection to the Site.
Bray Head SAC [000714]	<ul style="list-style-type: none"> • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • European dry heaths [4030] 	11.3 km to the south-east of the Site. No direct hydrological connection to the Site.
Wicklow Mountains SPA [004040]	<ul style="list-style-type: none"> • Merlin <i>Falco columbarius</i> [A098] • Peregrine <i>Falco peregrinus</i> [A103] 	12 km to the south of the Site. No direct hydrological connection to the Site.
Wicklow Mountains SAC [002122]	<ul style="list-style-type: none"> • Oligotrophic waters containing very few minerals of sandy plains <i>Littorelletalia uniflorae</i> [3110] • Natural dystrophic lakes and ponds [3160] • Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • <i>Calaminarian</i> grasslands of the <i>Violetalia calaminariae</i> [6130] • Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] • Blanket bogs (* if active bog) [7130] • Siliceous scree of the montane to snow levels <i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i> [8110] • Calcareous rocky slopes with <i>chasmophytic</i> vegetation [8210] • Siliceous rocky slopes with <i>chasmophytic</i> vegetation [8220] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Otter <i>Lutra lutra</i> [1355] 	12 km to the south of the Site. No direct hydrological connection to the Site.
Ireland's Eye SPA [004117]	<ul style="list-style-type: none"> • Cormorant [A017] • Herring gull [A184] • Kittiwake [A188] • Guillemot [A199] • Razorbill [A200] 	12.2 km to the north of the Site. No direct hydrological connection to the Site.

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
Ireland's Eye SAC [002193]	<ul style="list-style-type: none"> • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] 	12.7 km to the north of the Site. No direct hydrological connection to the Site.
Malahide Estuary SPA [004025]	<ul style="list-style-type: none"> • Great crested grebe <i>Podiceps cristatus</i> [A005] • Light-bellied brent goose [A046] • Shelduck [A048] • Pintail [A054] • Goldeneye <i>Bucephala clangula</i> [A067] • Red-breasted merganser <i>Mergus serrator</i> [A069] • Oystercatcher [A130] • Golden plover [A140] • Grey plover [A141] • Knot [A143] • Dunlin [A149] • Black-tailed godwit [A156] • Bar-tailed godwit [A157] • Redshank [A162] • Wetland and waterbirds [A999] 	16.2 km to the north of the Site. No direct hydrological connection to the Site
The Murrough SPA [004186]	<ul style="list-style-type: none"> • Red-throated diver [A001] • Greylag goose <i>Anser anser</i> [A043] • Light-bellied brent goose [A046] • Wigeon [A050] • Teal [A052] • Black-headed gull [A179] • Herring gull [A184] • Little tern [A195] • Wetland and waterbirds [A999] 	18.6 km to the southeast of the Site. No direct hydrological connection to the Site.

4.1.2 National nature conservation designations

There are two national nature conservation designations located within the Study Area as outlined in **Table 4.2**.

Table 4.2. National nature conservation designations

Designated site name [site code]	Summary of QI/SCI	Approximate distance from the Site
Dalkey Coastal Zone And Killiney Hill pNHA [001206]	Dalkey Coastal Zone And Killiney Hill pNHA includes the coastal stretch from Scotman's Bay to south of White Rock, the Dalkey Island group and Dalkey Sound, and Killiney Hill. This site represents an example of a coastal system with habitats ranging from the sub-littoral to coastal heath. The flora is well developed and includes some scarce species such as bloody crane's-bill <i>Geranium sanguineu</i> , bee orchid <i>Ophrys apifera</i> , sea stork's-bill <i>Erodium maritimum</i> . The islands that form part of this pNHA are important bird sites.	320 m southeast of the Site. No hydrological connection or other source of effect pathway to the Site.
South Dublin Bay pNHA [000210]	This site is a good example of a coastal system, with extensive sand and mudflats, and incipient dune formations. South Dublin Bay is also an internationally important SPA and SAC and this pNHA lies within both South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA.	700 m west of the Site. No hydrological connection or other source of effect pathway to the Site.

4.1.3 Local nature conservation designations

There are no Ancient Woodland or Long-Established Woodland listed under the Ancient Woodland Inventory (AWI) within the Study Area. There are no Locally Important Biodiversity Sites (LIBS) located within the Study Area (DLRCC, 2021a).

4.2 Habitats

The Site is highly urbanised and is dominated by existing roads and buildings. Areas of naturalised habitats are very limited within the Survey Area. Habitats within the Site comprise of mostly hard-standing surfaces with improved amenity grassland, treelines, and ornamental/non-native shrubs. Hedgerows and flower beds are found in the Survey Area. Broad habitats noted within the Survey Area are detailed in the following paragraphs. Habitats are presented in **Figure 2**.

BL3 Buildings and artificial surfaces

Buildings and artificial surfaces dominate the Site and Survey Area consisting of paved roads, footpaths, and residential, commercial, and industrial premises. Some buildings and artificial surfaces are associated with small areas of amenity grassland, treelines and flower beds. Buildings and artificial surfaces are of negligible ecological value.

BC4 Flower beds and borders

There are no flower beds and borders habitats present within the Site. There is one flower bed present in the eastern section of the Survey Area bordering a footpath and road (see **Plate 1** below). Flower beds are planted with an assortment of species including hedge bindweed *Calystegia sepium*, ragwort *Jacobaea vulgaris*, ribwort plantain *Plantago lanceolata*, barley *Poaceae* sp., white clover *Trifolium repens*, red valerian *Centranthus ruber*, broad-leaved dock *Rumex obtusifolia*, thistle *Cirsium* sp., montbretia *Crocasmia × crocosmiiflora* and ivy *Hedera helix*.

Plate 1. Flower beds and borders habitat in the Survey Area



GA2 Amenity grassland (improved)

There are a number of small, isolated areas of improved amenity grassland present within the Site (see **Plate 2** below). The majority of grasslands are well-managed with short swards of common grass species such as perennial ryegrass *Lolium perenne*, and occasional herb species such as greater plantain *Plantago major*, red clover *Trifolium pratense*, white clover, ragwort, black medic *Medicago lupulina*, creeping buttercup *Ranunculus repens* and daisy *Bellis perennis*. Amenity grassland is typically associated with planted, immature treelines.

Plate 2. Amenity grassland in the Site



WL1 Hedgerows

There is one isolated section of a 3 m by 4 m wide hedgerow located along the northern border of the Survey Area. The dense hedgerow is dominated by red claw *Escallonia rubra* with occasional species present such as red valerian and sycamore.

WL2 Treelines

There are a number of landscape planted treelines within the Site and Survey Area. Treelines typically comprise lines of planted street trees, with some treelines associated with small patches of amenity grasslands (see **Plate 3** below). Treelines within the Site are immature, ornamental trees approximately 10 m tall and dominated by rowan *Sorbus aucuparia* or sycamore. Treelines within the Survey Area are typically slightly more mature, approximately 15 m tall and sycamore dominated. Young maple *Acer* sp., treelines were also occasional observed.

Plate 3. Treelines within the Survey Area



WS3 Ornamental/non-native shrub

There is a small patch of ornamental/non-native shrub present within the Site adjacent to the harbour parking area. This comprised a mixture of red valerian, lavender *Santolina* sp, and speedwells *Veronica* sp. (see **Plate 4** below).

Plate 4: Ornamental / non-native shrub within the Site



4.3 Invasive non-native species

4.3.1 Fauna

No INNS faunal species were observed within the Survey Area during the field survey. Sika deer were recorded on the NBDC database within the 2 km Study Area but sika deer usually occur within woodland, which is absent from the Study Area and thus, these species are precluded from the Site. The NBDC database search also returned records of brown rat, grey squirrel and harlequin ladybird within 2 km of the Proposed Scheme, however there is no mechanism by which the Proposed Scheme could cause a significant increase in these species and more importantly no realistic means by which the Proposed Scheme could spread them elsewhere. Therefore, non-native invasive faunal species are not considered further in this EclA.

4.3.2 Flora

There are two non-Scheduled INNS within the Survey Area: butterfly-bush (medium-impact invasive species according to NBDC), and sycamore (medium-impact invasive species). Butterfly bush is not present within the Site but there are two bushes of butterfly-bush within the Survey Area as denoted on **Figure 2**. Adjacent to the Site, there is one large bush of butterfly-bush, approximately 3 m tall located behind a stone wall along the railway line (see **Plate 5** below). Butterfly-bush is also found as a scrub-like bush within the boatyard along the north-western border of the Survey Area.

There is one planted sycamore treeline within the Site but in the context of the Survey Area, sycamore is not considered particularly “invasive” and thus sycamore treelines are not listed as an invasive species on **Figure 2**.

Plate 5. Butterfly-bush adjacent to Site within the Survey Area.



4.4 Protected and notable species

The baseline conditions with respect of protected and notable flora and fauna species are described under the following sub-headings. Where relevant, records of the species identified by the desk study are also referred to under the species sub-headings. The NBDC and NPWS database search results of notable species within the Study Area, are set out in **Appendix D**.

4.4.1 Notable native plant species

No protected or notable native plant species were identified during the ecological walkover. The NBDC returned records of dense-flowered fumitory and green field-speedwell within 2 km of the Proposed Scheme. Neither species is protected but they are notable as dense-flowered fumitory *Fumaria densiflora* is Regional Threatened and green-field speedwell *Veronica agrestis* is Near Threatened according to the Irish Red List status. There is no habitat within the Site suitable for these species. There were no other records of notable native plant species within the Study Area and hence, notable native plant species are not considered further in this EclA.

4.4.2 Bats

A PRA of trees within the Survey Area determined that no trees assessed contained any PRF, and as such all trees assessed were deemed as having Negligible suitability for roosting bats (as defined by the BCT (BCT, 2016)). Therefore, roosting bats are not considered further in this EclA.

The NBDC database search returned two bat species records from within the Study Area; common pipistrelle *Pipistrellus pipistrellus*, and Leisler's bat *Nyctalus leisleri*. The closest records of common pipistrelle and Leisler's bat returned from the NBDC database were associated with Dún Laoghaire Harbour, approximately 0.1 km northeast of the Site. The Site and surrounding landscape provide limited suitability for use by foraging and commuting bats as the environment is highly urbanised, exposed and dominated by hardstanding and buildings. Treelines present within the Site are small in extent and illuminated by external street lighting.

4.4.3 Otter

The NBDC database search returned three live sighting records of otter in Dún Laoghaire Harbour, located within the Study Area. No evidence of, or suitable habitat for otter is present within the Survey Area. It is deemed highly unlikely that otters use areas in the Site and Survey Area for foraging and / or commuting as the landscape predominately consists of pavement with no foraging opportunities to attract otter from Dún Laoghaire Harbour. Therefore, this species is not considered further in this EclA.

4.4.4 Badger

No evidence of badger was recorded during the field survey and the NDBC database search returned no records of badger within the Study Area. The Survey Area offers limited suitable habitat for foraging and commuting badger given its small extent and isolated nature as it is surrounded by built environment with limited habitat connectivity. No badger setts were recorded during the survey, and the surrounding habitat is considered not suitable to accommodate sett creation. Therefore, due to the urbanised nature of the Site and Survey Area, as

well as the lack of suitable foraging habitat and commuting corridors, badger is not considered further in this EclA.

4.4.5 Other mammals

No evidence of, or suitable for, any other terrestrial mammals (i.e., hedgehog, Irish stoat Irish hare, pine marten, pygmy shrew and red squirrel) were recorded during the field survey. The NBDC database search returned records of red squirrel within 2 km of the Proposed Scheme but there is no habitat to support red squirrel within the Site or Survey Area. The NBDC database returned no records of hedgehog within the Site and no other terrestrial mammals were recorded within the Study Area. Field signs are less frequently observed for species such as hedgehog than for larger mammals, and while the Survey Area may offer limited opportunities for hedgehog within the areas of scrub and flowers beds, the highly urbanised nature of the Site and busy roads coupled with the lack of suitable habitat to support foraging, commuting and / or sheltering habitat for other mammals, likely precludes them from the Survey Area. Therefore, other mammals are not considered further in this EclA.

4.4.6 Amphibians and reptiles

No amphibians or reptiles were recorded during the field survey. The Site and Survey Area are considered to have unsuitable breeding habitat for both smooth newt and common frog as well as habitat to support either species give there are no freshwater ponds, streams, or other waterbodies within the Site or Survey Area. The Site and Survey Area also lack suitable habitat for common lizard such as areas of woodland. Therefore, amphibians and reptiles are not considered to pose a constraint and are not considered further in this EclA.

4.4.7 Birds

The Site and Survey Area is largely unsuitable for breeding bird species being dominated by hard-standing surfaces. However, some suitable habitats in the Survey Area such as hedgerows, ornamental/non-native shrub, and treelines may provide nesting, shelter, and foraging opportunities, albeit limited for a variety of common terrestrial bird species.

As detailed in **Section 4.1.1**, there are a number of SPAs designated for a range of wetland and waterbirds within the ZOI of the Proposed Scheme. There is no habitat within the Site that could support non-breeding waterbirds as the amenity grasslands located within the Site and Survey Area are very small in size and highly disturbed. In the wider environment the open amenity grassland located east of the Commissioners of Irish Lights Headquarters building could theoretically be used for foraging by small numbers of birds. For bird species not designated to SPAs, there are alternative larger and likely less disturbed parks and areas of suitable grassland habitat in the wider area such as Apna Park, People's Park, Vesey Public Park and De Vesci Gardens. In relation to SCI species, the AA Screening Report concluded that likely significant effects from the Proposed Scheme on European sites will not arise, both individually or in-combination with other plans or projects (AECOM, 2023). Therefore, non-breeding waterbirds are not considered to pose a constraint and are not considered further in this EclA.

4.4.8 Terrestrial invertebrates

The NBDC databases search returned records of yellow shell and large red-tailed bumble bee within 2 km of the Proposed Scheme. While habitats in the Survey Area such as the ornamental/non-native shrubs, flower beds and borders, and amenity grasslands may provide limited sources of food and shelter for a small number of common species, the habitats within the Survey Area will largely be retained. Buff-tailed bumble bees *Bombus Terrestris* were noted within the Site during the field survey however, the habitats within the Site are not deemed as ecological important habitat as they are dominated by poor ground-level habitats such as amenity grassland and existing hardstanding. Given these facts, the Site does not support invertebrate species including yellow shell *Campptogramma bilineata* and red-tailed bumblebee *Bombus (Melanobombus) lapidarius* Therefore, terrestrial invertebrates are not considered to pose a constraint and are not considered further in this EclA.

4.4.9 Fish

There are no watercourses or permanent waterbodies that would support fish within the Survey Area. Therefore, fish are not considered further in this EclA.

4.5 Future baseline

The construction phase of the Proposed Scheme will extend to a period of approximately four months and is proposed to commence in April 2024. Therefore, the baseline for most of the Site at the time of the Proposed Clearance and construction is not expected to change to that described in the baseline above.

There are no other known or likely land use changes, or changes to the terrestrial, coastal or marine environment within the Zol of the Proposed Scheme, that have the potential to significantly change the baseline ecological conditions at the time of construction of the Proposed Scheme.

Very minor changes in the distribution of some species (e.g., nesting birds) may occur due to small-scale changes in habitat structure as a result of ecological succession or other natural processes, or human interventions. Any such changes are very likely to be within the range of normal inter-annual variation in the distribution and abundance of local species populations.

It is therefore expected that the current baseline conditions will remain largely unchanged by the time of construction of the Proposed Scheme.

4.6 Baseline in the absence of the Proposed Scheme

The future baseline in the absence of the Scheme (the 'do nothing scenario'), taken for these purposes to be the situation 30 years from the time of writing, would likely be very similar to the current baseline, with hard-standing dominating the Site. No other significant change to the ecological conditions of the Site would be expected if the Proposed Scheme does not proceed.

5. Potential impacts

5.1 Embedded mitigation

Embedded mitigation measures are incorporated into the design of a development and aim to avoid or reduce adverse effects, including those on ecological features. Embedded mitigation is considered at the initial impact assessment stage, whereas mitigation that is not part of the design and is developed after the initial impact assessment is considered at the residual effects stage.

A range of measures that are standard best practice for development of this type, including those required to comply with environmental protection and nature conservation legislation will also be implemented. A range of measures that are standard good practice for development of this type, and which are required to comply with environmental protection legislation, will also be implemented. These are well-developed and have been successfully implemented on infrastructure projects across the country and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. These will include:

- all personnel involved in the construction of the Proposed Scheme will be made aware of the ecological features within the Zol of the Proposed Scheme and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required;
- an Ecological / Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Proposed Scheme. The ECoW will advise on and monitor implementation of ecological mitigation measures and compliance with legislative requirements in relation to ecological features. The ECoW will also carry out pre-works checks for protected and / or notable species and provide other ecological advice as necessary;
- a Construction Environmental Management Plan (CEMP) will be prepared by the appointed Contractor prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel;
- during all phases of the Proposed Scheme (construction and operation), pollution prevention measures will be adopted and included within the CEMP. Measures will include the following:
 - controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment;
 - all oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Site;
 - in order to avoid pollution impacts to soils and vegetation during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base;
- as far as possible, works that will directly impact upon areas of vegetation that could be used by nesting birds will be undertaken outside of the breeding season, which is taken to be between March and August, inclusive. Should vegetation clearance works be required during the breeding season, a pre-works check for active nests will be carried out by an ECoW or suitably experienced ecologist / ornithologist. Such checks will be completed no more than 72 hours in advance of clearance works taking place as nests can be quickly established. Where any active nests are identified, suitable species-specific exclusion zones will be implemented and maintained until the breeding attempt has concluded;
- sightings of protected or notable species within the Site during the construction phase will be recorded. If any evidence or sightings of protected species is found within 30 m of works, then works in that area will stop immediately and an ecologist should be contacted for further advice;
- habitat losses should be minimised as far as possible, by only removing habitat required to facilitate the construction footprint, including working, storage areas and laydown areas. Retained habitat within the Survey Area, particularly trees, must be safeguarded during the construction of the Proposed Scheme;
- sightings of protected or notable species within the Site during the construction phase will be recorded. If any evidence or sightings of protected species is found within 30 m of works, then works in that area will stop immediately and a suitable experienced ecologist will be contacted for further advice;

- any excavations will be left with a method of escape for any animals that may enter overnight, and will be checked at the start of each working day to ensure no animals are trapped within them;
- any pipes will be capped or otherwise blocked at the end of each working day, or if left for extended periods of time, to ensure no animals become trapped;
- as far as possible, works will be carried out in daylight to minimise the risk of disturbing nocturnal or diurnal protected species such as foraging / commuting bats; and
- any artificial lighting required during the construction phase and operational phase will be low level lighting and will be directional in ecologically sensitive locations to avoid or minimise light spill to avoid the disturbance of nocturnal or diurnal protected species such as foraging / commuting bats.

5.2 Features excluded from further assessment

Relevant ecological features are those that are considered to be ‘important’ and have the potential to be affected by the Proposed Scheme (CIEEM, 2022). In view of the baseline data obtained through the desk study and field survey, the following features, as well as those listed in **Section 4.4** have been excluded from further assessment because there is considered to be no possible effect on them, through absence of the feature or clear absence of an impact pathway:

- **local nature conservation designations** – there are no records of Ancient or Long-Established Woodland or Local Biodiversity Sites within 2 km of the Site; and,
- **habitats other than treelines** – the Site is highly urbanised and is dominated by buildings and hard-standing surfaces. The small pockets of ornamental/non-native shrub and flowers beds and borders are not particularly notable and comprises an assemblage of tree/plant species which are common and typical of the nature of the Site and surrounding environs. While these habitats do provide food and shelter for a number of invertebrate and bird species, the habitats are isolated, small in extent and experience high levels of disturbance from people and surrounding busy roads. Where other habitats are present such as amenity grasslands, these comprise a low diversity of common and widespread species typical of the urban environment. Therefore, the habitats within the Site and the wider Survey Area are generally not considered to be high-quality or ecologically important habitats. In addition, INNS are found in habitats within the Survey Area which further reduces the botanical value of the habitats present. These habitats have limited ecological value and are readily replaceable through landscaping and routine maintenance.

5.3 Importance of ecological features

The geographic importance of notable ecological features identified in the baseline conditions is assigned in **Table 5.1** together with the rationale. Ecological importance has been assessed on a geographic scale following CIEEM (2022). For the purposes of defining geographical scale in this assessment, ‘County’ is defined as Co. Dublin ‘Local’ as the area within 5 km of the Proposed Scheme and ‘Site’ as the Site and immediate surroundings.

As described in the EclA section, only those ecological features that are ‘important’ and could be significantly affected by the project require detailed assessment: “it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable” (CIEEM, 2022). Therefore, ecological features of less importance than ‘Local’ are not subject to detailed assessment.

Table 5.1. Importance of ecological features

Ecological feature	Importance	Rationale
South Dublin Bay and River Tolka Estuary SPA [004024]	International (Very high)	International nature conservation designation.
South Dublin Bay SAC [000210]	International (Very high)	International nature conservation designation.
Sandymount Strand/Tolka Estuary Ramsar Site [832]	International (Very high)	National nature conservation designation.
Rockabill to Dalkey Island SAC [003000]	International (Very high)	International nature conservation designation

Dalkey Islands SPA [004172]	International (Very high)	International nature conservation designation.
North Dublin Bay SAC [000206]	International (Very high)	International nature conservation designation.
North Bull Island SPA [004006]	International (Very high)	National nature conservation designation.
North Bull Island Ramsar Site [406]	International (Very high)	International nature conservation designation.
North-West Irish Sea SPA	International (Very high)	International nature conservation designation.
Howth Head SAC [000202]	International (Very high)	National nature conservation designation.
Howth Head Coast SPA [004113]	International (Very high)	International nature conservation designation
Ballyman Glen SAC [000713]	International (Very high)	International nature conservation designation.
Knocksink Wood SAC [000725]	International (Very high)	International nature conservation designation.
Baldoye Bay SAC [000199]	International (Very high)	National nature conservation designation.
Baldoye Bay SPA [004016]	International (Very high)	International nature conservation designation.
Baldoye Bay Ramsar Site [413]	International (Very high)	National nature conservation designation.
Bray Head SAC [000714]	International (Very high)	International nature conservation designation
Wicklow Mountains SPA [004040]	International (Very high)	International nature conservation designation.
Wicklow Mountains SAC [002122]	International (Very high)	International nature conservation designation.
Ireland's Eye SPA [004117]	International (Very high)	International nature conservation designation.
Ireland's Eye SAC [002193]	International (Very high)	National nature conservation designation.
Malahide Estuary SPA [004025]	International (Very high)	National nature conservation designation.
The Murrough SPA [004186]	International (Very high)	National nature conservation designation.
Dalkey Coastal Zone And Killiney Hill pNHA [001206]	National (high)	National nature conservation designation.
South Dublin Bay pNHA [000210]	National (high)	National nature conservation designation.
Bats	Site	<p>The habitats within the Site are considered to be of less than Local importance as they provide a very limited foraging and commuting resource to bats in the local area and are not sufficiently good quality or extensive to be valuable in a Local context. The Survey Area is highly urbanised and dominated by hard-standing surfaces and buildings. Where habitats are present which offer opportunities for foraging bats such as scrub and treelines, their value is limited by their small extent and illumination by street lighting. The Survey Area lacks significant linear habitat commuting corridors and is not connected to high value habitat for foraging and commuting bats, albeit treelines offer limited opportunities.</p> <p>For these reasons bat usage of the Site and immediate surroundings is assumed to be limited, and Site importance only has been assigned.</p>
Habitats: treeline	Site	<p>There are a number of planted treelines within the Site and Survey Area comprising of species such as sycamore and rowan that provide limited connectivity between the Site and surrounding area. Treelines within the Survey Area had Negligible suitability for bats, but a number of trees had some limited suitability for common terrestrial bird species. Thus, Site importance only has been assigned.</p>

Invasive non-native species – butterfly-bush and sycamore	Local	INNS are not important through ecological value but for their negative effects on biodiversity. The main risk is the potential for the spread of INNS during construction. None of the floral species recorded are Scheduled, but INNS can impact the local populations of native species.
Birds – nesting habitat	Site	There are a number of treelines, ornamental/non – native shrub and hedgerows that provide suitable nesting habitat for various common bird species within the Survey Area. As the Site is located in a built-up urban area, these small, isolated pockets offer refuge to birds albeit limited nesting opportunities.

5.4 Assessment of impacts and effects

The predicted impacts and effects of the construction/operational phases of the Proposed Scheme are set out in **Table 5.2**, with further more detailed mitigation (beyond the embedded mitigation in **Section 5.1**) proposed where necessary. The scale of residual effects, accounting for any such further mitigation, is provided in the final column. There is no expectation of a decommissioning phase, so this potential impact source is not included in **Table 5.2**.

Table 5.2. Assessment of impacts and effects on ecological features

Ecological feature (Importance)	Impacts and effects	Scale of initial effect	Specific mitigation	Scale of residual effect
International nature conservation designations including: South Dublin Bay and River Tolka Estuary SPA, South Dublin Bay SAC, Sandymount Strand/Tolka Estuary Ramsar Site, Rockabill to Dalkey Island SAC, Dalkey Islands SPA, North Dublin Bay SAC, North Bull Island SPA, North Bull Island Ramsar Site, North-West Irish Sea SPA, Howth Head SAC, Howth Head Coast SPA, Ballyman Glen SAC, Knocksink Wood SAC, Baldoyle Bay SAC, Baldoyle Bay SPA, Baldoyle Bay Ramsar Site, Bray Head SAC, Wicklow Mountains SPA, Wicklow Mountains SAC, Ireland's Eye SPA, Ireland's Eye SAC, Malahide Estuary SPA, and The Murrough SPA. (International)	The AA Screening Report concluded no likely significant effects on the QI and SCI species designated to European sites within the Zol (AECOM, 2023). By inference, there will also be no likely significant effects on the relevant Ramsar sites given that the ecological interests are the same as those of SPAs. This effectively equates to <u>no effect</u> in EclA terms.	None	None needed.	None
National nature conservation designations including: Dalkey Coastal Zone and Killiney Hill pNHA South Dublin Bay pNHA. (National)	The AA Screening Report concluded no likely significant effects on European sites (AECOM, 2023). By inference, therefore, there will also be no likely significant effects on the relevant pNHA sites given that the ecological interests are the same as those of the European site. This effectively equates to <u>no effect</u> in EclA terms.	None	None needed.	None
Invasive non-native species – sycamore, and butterfly-bush (Local)	No Scheduled invasive species were identified within the Site / Survey Area. However, two non-scheduled INNS were identified within the Survey Area. As construction works are required adjacent to the locations of these species, there would be potential for seeds / propagules of these species to be disturbed and transferred to new sites because of construction activities. For example, seeds / propagules could be moved with soils or carried on vehicles and machinery to new locations where the plant species concerned could then grow and establish and out-complete other plants. Any disturbance to these species during construction works poses a risk of causing their spread but as non-Scheduled invasive species, there is no specific legal requirement to manage or control these species.	None	As good practice, it is recommended that biosecurity measures are implemented as practicable to prevent the further spread of these species.	Negligible.
Bats (Site)	Loss of foraging / commuting habitat The Survey Area lacks significant linear habitat commuting corridors and is not well connected to high value habitat for foraging and commuting bats.	Negligible	None needed.	None
	General disturbance of bats The possible extent of construction lighting would be very limited, and during operation lighting would be much the same as current	Negligible	None needed.	None

Ecological feature (Importance)	Impacts and effects	Scale of initial effect	Specific mitigation	Scale of residual effect
	<p>levels to which bats are habituated. The lighting design will be cognisant of minimising light spill and where required, low level lighting can be applied. Additionally, common pipistrelle and Leisler's bats are tolerant of artificial light whilst foraging/commuting (Rowse <i>et al</i>, 2018). Therefore, no significant disturbance impacts on general bat activity are anticipated.</p>			
Birds (Site)	<p>Loss of foraging / commuting habitat The treelines in the Site are composed of immature park trees and there are some mature ornamental tree species largely dominated by sycamore with a few occasional rowan, maple, and elder in the Survey Area.</p>	Negligible	The majority of trees within the Site will be retained with only a small number of trees proposed to be removed. The trees proposed to be removed are immature street trees and to compensate for the limited loss of potential nesting habitat these trees may provide, they will be replaced with new trees once construction is completed.	Negligible
	<p>General disturbance of birds As discussed in the AA Screening Report, a small numbers of SCI species may occur within the vicinity of the Proposed Scheme for foraging. However, the habitats within the Site and Survey Area are largely unsuitable for SCI species being situated in a busy, built-up urban town and any SCI species that occur in proximity to the Site, will be already habituated to high levels of disturbance. In addition, the works for the Proposed Scheme will be temporary and minor in nature and there are many alternative larger and likely less disturbed habitats within the intervening distance between the Site and SPAs, which could be used by SCI species. It is considered unlikely that any disturbance effects would occur to SCI species from surrounding SPAs. Therefore, there is no potential for likely significant effects as a result of the Proposed Scheme (AECOM, 2023). Similar to above, common terrestrial birds occurring in the vicinity of the Site will be habituated to the high levels of disturbance from people. In addition, the minor works of the Proposed Scheme will be temporary, and thus, common terrestrial birds within the Site and Survey Area will be largely undisturbed. Thus, it is deemed unlikely that any disturbance effects would occur to terrestrial bird species as a result of the Proposed Scheme.</p>	Negligible	None needed.	Negligible
Habitats – treelines (Site)	<p>Treelines within the Survey Area had no PRF for bats but a number of trees had some limited suitability for common terrestrial bird species. The treelines are not particularly notable and comprises an assemblage of tree which are common and typical of the nature of the Site and surrounding environs. The treelines are isolated, small in extent and experience high levels of disturbance from people and surrounding busy roads limiting their suitability for a number of species. There are no mature trees within the Site and there are no</p>	Negligible	Damage to trees during construction (e.g. dust on foliage, and impacts to root systems), must be avoided where trees are to be retained. It is proposed that, as a minimum, tree protection zones are installed surrounding retained trees close to the working area. The majority of trees within the Site will be retained with only a small number of trees proposed to be removed.	Negligible

Ecological feature (Importance)	Impacts and effects	Scale of initial effect	Specific mitigation	Scale of residual effect
	very mature trees in the Survey Area which would be of greater biodiversity value by virtue of their age.		The trees proposed to be removed are immature street trees and to compensate for the limited loss of potential nesting habitat these trees may provide, tree and shrub planting will be incorporated into the Proposed Scheme as detailed Section 6.1 .	

6. Mitigation measures

Specific mitigation measures (further to the embedded mitigation as described in **Section 5.1**) will be implemented to minimise adverse effects on ecological features identified above.

Mitigation measures will be implemented to minimise adverse effects on ecological features identified above. Mitigation is not necessarily required where the effects on an ecological feature are not to be considered significant (which in this Report is taken to be all effects of Site significance or lower). However, in some cases readily achievable measures will be implemented to ameliorate such effects and / or provide ecological enhancement.

The implementation of mitigation does not replace or negate the requirement for legislative compliance.

There are no notable features of importance that could be significantly affected by the Proposed Scheme, which includes effects of Local geographic scale or higher (CIEEM, 2022). Therefore, there is no requirement for further mitigation measures in addition to those listed in **Section 5** and those outlined below in **Section 6.1**.

6.1 Replanting

The majority of trees within the Site will be retained with only a small number of trees proposed to be removed, as detailed in the tree retention plan and in drawing DLT-ACM-00-ST-DR-L-1000. The trees proposed to be removed are immature amenity trees. To mitigate for the loss of trees and to meet Policy Objective GIB22 of the DLR Development plan, replacement and additional tree and shrub planting will be incorporated into the Proposed Scheme design. Trees and shrubs will be planted with appropriate setbacks from the road, and footpath to allow for successful establishment and growth. The native trees and hedgerows will comprise species such as silver birch *Betula pendula*, rowan *Sorbus aucuparia* and European beech *Fagus sylvatica*. The ornamental street planting species will comprise species such as field maple *Acer campestre*. Any proposed shrub planting should incorporate native species, in particular berry producing species such as elder and holly. Cherry such as the native wild cherry *Prunus avium* also produces attractive blossoms in spring.

Wildflower planting within the amenity grasslands is proposed, with ornamental groundcover shrub planting proposed. The wildflowers should be cut twice a year, once in Spring and once in Summer. Wildflower species should be determined by DLRCC, as it is understood they have a seed collection project to ensure wildflowers of local provenance will be used on developments. DLRCC will need to advise on the species of wildflowers to be used.

It is recommended a Landscape Maintenance Plan (LMP) is prepared prior to construction for the construction and operational phases. The Landscape Maintenance Plan should be prepared by a suitable qualified landscape architect.

7. Residual impacts

For the purposes of this EclA, only effects which are judged to be of Local significance or higher are considered to be Significant. On this basis, even in the absence of mitigation, there are not expected to be any Significant effects on important ecological features from the construction and operation of the Proposed Scheme.

With the inclusion of embedded mitigation measures, there are no residual adverse ecological effects, on designated sites, notable habitats or other protected or notable species predicted. In all cases there is no effect or a negligible effect.

8. Cumulative effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2022).

The wider area surrounding the Site is primarily built-up urban environment consisting of residential, industrial and commercial premises. The majority of planning applications within the vicinity of the Site comprise small scale domestic and commercial applications and/or extensions to existing structures.

Projects that have the potential to impact cumulatively with the Proposed Scheme to cause significant environmental effects were assessed. Consideration has been given in this EclA only to those identified projects that may be under construction at approximately the same time as the Proposed Scheme, which involve a permanent loss of habitat which is similar to that within the Site (and which may therefore support the same species), and / or which are of a sufficient scale that any impacts they may generate could realistically be expected to act cumulatively with the Proposed Scheme. The Living Streets: Coastal Mobility Route is expected to begin in Q1 2024 (Barry's Transportation, 2023). The construction of the development may coincide with the Proposed Scheme, however, given that the development will be largely restricted to hard-standing areas, there will be limited habitat loss and hence the Proposed Scheme and this development will not act cumulatively to cause significant environmental effects.

In terms of other developments on Harbour Road, Dún Laoghaire, the interactive map for the National Planning Application Database² indicates that there are no developments that might be constructed at the same time as the Proposed Scheme.

It is concluded that there will be no adverse cumulative ecological effects involving the Proposed Scheme.

² <https://housinggov.ie/maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de> Accessed November 2023.

9. Conclusion

With the adoption of embedded and specific mitigation measures, combined with the limited nature of the works, the EclA concludes that no significant impacts upon ecological features will occur as a result of the Proposed Scheme.

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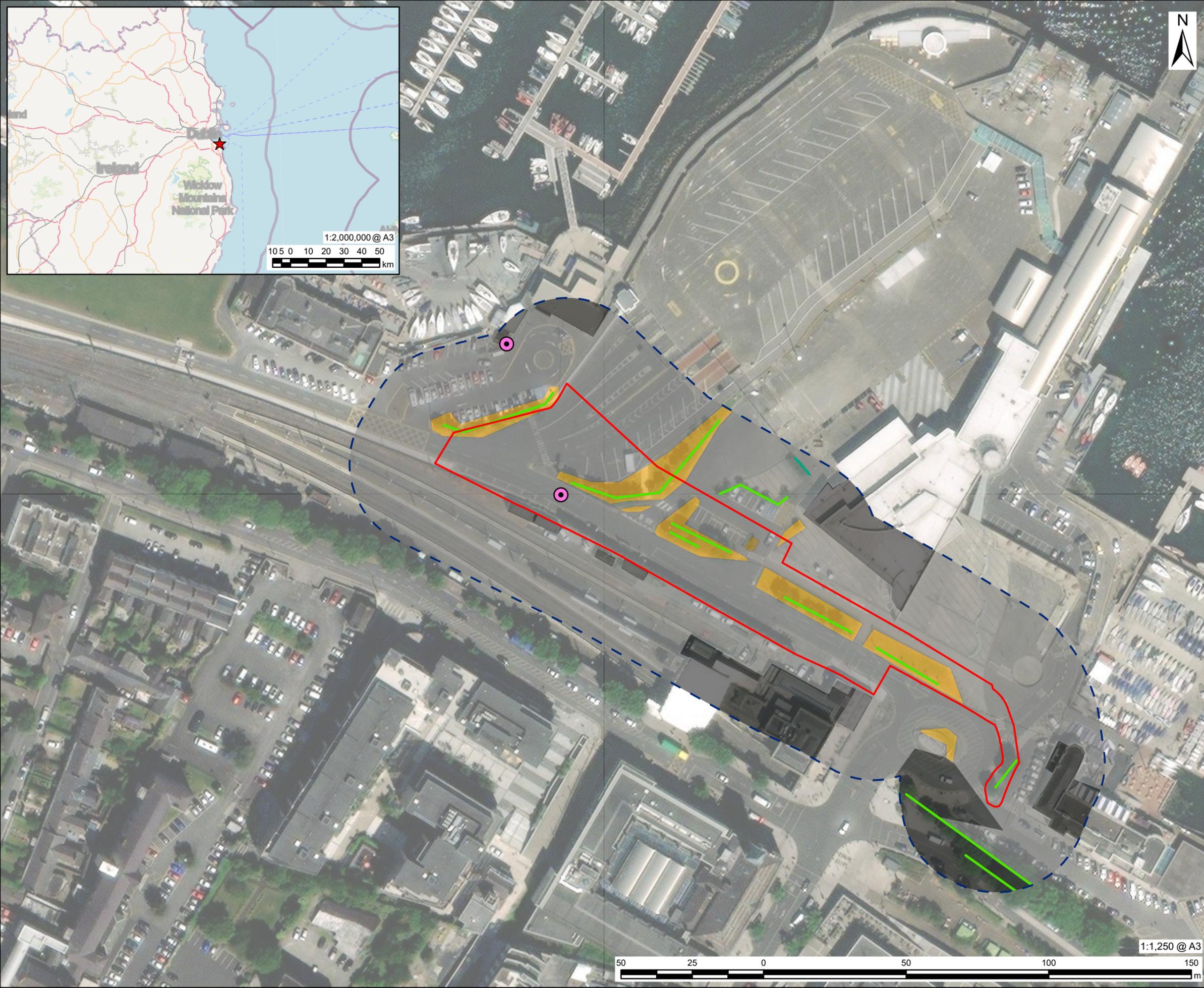
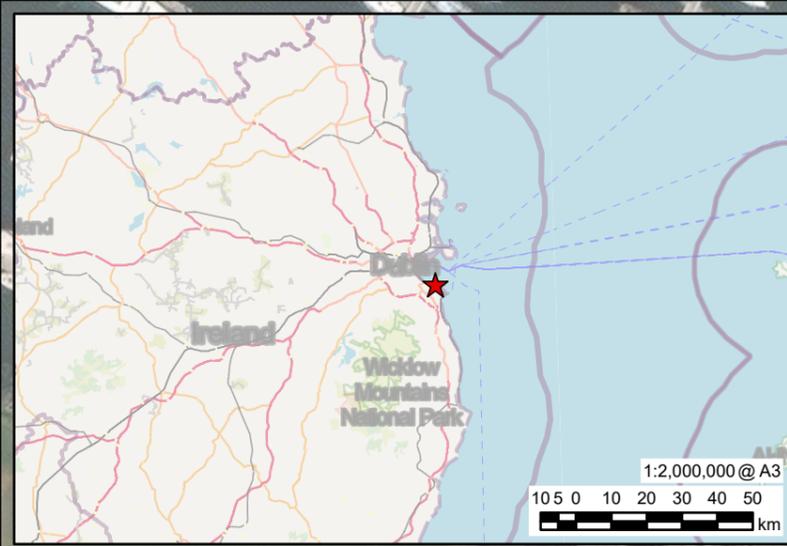
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Appendix A Figures

Figure 1: Ecological Designations

Figure 2: Fossitt habitats



AECOM

PROJECT
Dún Laoghaire Bus and Access Arrangements on Harbour Road

CLIENT
Dún Laoghaire-Rathdown County Council on behalf of National Transport Authority



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- LEGEND**
- Site
 - Survey Area
 - Invasive Species**
 - Butterfly bush (Non-Scheduled, Medium-Impact)
 - Habitat Type (Fossitt)**
 - WL1 Hedgerows
 - WL2 Treelines
 - BL3 Buildings and artificial surfaces
 - GA2 Amenity grassland (improved)
 - WS3 Ornamental/non-native shrub
 - Hardstanding

NOTES
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Community Maps contributors, Map layer by Esri

ISSUE PURPOSE
FINAL
PROJECT NUMBER
60697433
FIGURE TITLE
Fossitt Habitats

FIGURE NUMBER
Figure 2

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Appendix B Legislation and planning policies and plans

Relevant legislation

This Ecological Impact Assessment has been carried out within the context of the following relevant legislation:

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive').
- Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive').
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (as amended) (the 'Water Framework Directive').
- Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the 'Invasive Alien Species Regulations').
- Convention on Wetlands of International Importance ('Ramsar Convention').
- The Planning and Development Acts 2000 to 2021 (collectively referred to as the 'PDA') and the Planning and Development (Amendment) Regulations 2022.
- The Wildlife Acts 1976 to 2018 and the Wildlife (Amendment) Act 2000 (collectively referred to as the 'Wildlife Acts').
- The European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) (as amended) (the 'Habitats Regulations').
- Flora (Protection) Order 2015 S.I. 356/2015 (the 'Flora Protection Order').
- Fisheries Consolidation Act 1959 (No. 14 of 1959) (as amended) (the 'Fisheries Consolidation Act').
- The Inland Fisheries Act 2010 (No. 10 of 2010) (as amended) (the 'Inland Fisheries Act').
- EC Environmental Objectives (Surface Waters) Regulations 2009 (SI 272 of 2009).and,
- Local Government (Water Pollution) Acts 1977 to 1990, as amended (the 'Water Pollution Acts').

Note that compliance with legislation may require the attainment of relevant protected species derogation licences prior to implementing works.

Relevant planning policy and plans

Project Ireland 2040 National Planning Framework (NPF)

The Project Ireland 2040 National Planning Framework (NPF) (Department of Housing, Planning and Local Government (DHPLG), 2018) sets out the Government's planning policies for Ireland and how these should be applied. NPF sets out that to achieve sustainable development, the planning system must incorporate an environmental objective, which should include:

- Integrated planning for green infrastructure and ecosystem services.
- Enhancing the conservation status and improve the management of protected areas and protected species.
- Use natural resources prudently.
- Minimising waste and pollution.
- Mitigating and adapt to climate change, including moving to a low carbon economy.

National Biodiversity Action Plan 2017-2021

The National Biodiversity Plan 2017-2021 (Department of Culture, Heritage and the Gaeltacht (DCHG), 2017) for Ireland outlines six main objectives to meet commitments under the Convention on Biological Diversity (CBD) and EU Biodiversity Strategy. The National Biodiversity Plan 2023-2027 is currently being drafted. The objectives of the National Biodiversity Plan 2017-2021 include:

- Mainstream biodiversity into decision-making across all sectors.
- Strengthen the knowledge base for conservation, management and sustainable use of biodiversity.

- Increase awareness and appreciation of biodiversity and ecosystem services.
- Conserve and restore biodiversity and ecosystem services in the wider countryside.
- Conserve and restore biodiversity and ecosystem services in the marine environment.
- Expand and improve management of protected areas and species.
- Strengthen international governance for biodiversity and ecosystem services.

Dún Laoghaire-Rathdown County Development Plan 2022 - 2028

The Dún Laoghaire-Rathdown County Development Plan (CDP) sets out the policies and objectives for the development of the County over the six-year period of the plan (DLR, 2021). The objectives outlined in *Chapter 8: Green Infrastructure and Biodiversity* that are most relevant to the Proposed Scheme include the following:

- **Policy Objective GIB18:** Protection of Natural Heritage and the Environment It is a Policy Objective to protect and conserve the environment including, in particular, the natural heritage of the County and to conserve and manage Nationally and Internationally important and EU designated sites - such as Special Protection Areas (SPAs), Special Areas of Conservations (SACs), proposed Natural Heritage Areas (pNHAs) and Ramsar sites (wetlands) - as well as non-designated areas of high nature conservation value known as locally important areas which also serve as 'Stepping Stones' for the purposes of Article 10 of the Habitats Directive.
- **Policy Objective GIB19:** To ensure the protection of natural heritage and biodiversity, including European Sites that form part of the Natura 2000 network, in accordance with relevant EU Environmental Directives and applicable National Legislation, Policies, Plans and Guidelines.
- **Policy Objective GIB20:** To support the provisions of the forthcoming DLR County Biodiversity Action Plan, 2021-2025.
- **Policy Objective GIB21:** To protect and preserve areas designated as pNHA, SAC, and SPA. It is Council policy to promote the maintenance and as appropriate, delivery of 'favourable' conservation status of habitats and species within these areas.
- **Policy Objective GIB22:** To protect and promote the conservation of biodiversity in areas of natural heritage importance outside Designated Areas and to ensure that notable sites, habitats and features of biodiversity importance - including species protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979, the Habitats Directive 1992, Birds and Habitats Regulations 2011, Flora (Protection) Order, 2015, Annex I habitats, local important areas, wildlife corridors and rare species - are adequately protected. Ecological assessments will be carried out for all developments in areas that support, or have potential to support, features of biodiversity importance or rare and protected species and appropriate mitigation/avoidance measures will be implemented. In implementing this policy, regard shall be had to the Ecological Network, including the forthcoming *DLR Wildlife Corridor Plan* and the recommendations and objectives of the *Green City Guidelines (2008)* and '*Ecological Guidance Notes for Local Authorities and Developers*' (Dún Laoghaire-Rathdown Version 2014).
- **Policy Objective GIB26:** To protect, promote and preserve sites of Geological and Geomorphological importance, in particular the pNHAs, and any County Geological Sites (CGS), that become designated during the lifetime of the Plan.
- **Policy Objective GIB28:** To prepare an 'Invasive Alien Species Action Plan' for the County which will include actions in relation to Invasive Alien Species (IAS) surveys, management and treatment and to also ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are or were previously present, the applicants will be required to submit a control and management program for the particular invasive species as part of the planning process and to comply with the provisions of the European Communities Birds and Habitats Regulations 2011 (S.I. 477/2011).
- **Policy Objective GIB29:** To increase the use of Nature Based Solutions (NBS) within the County, and to promote and apply adaption and mitigation actions that favour NBS, which can have multiple benefits to the environment and communities. NBS has a role not only to meet certain infrastructure related needs (e.g. flooding management), and development needs, but also to maintain or benefit the quality of ecosystems, habitats, and species.

Dún Laoghaire-Rathdown County Biodiversity Action Plan 2021 - 2025

The creation of the DLR Biodiversity Action Plan has taken into account: the EU Biodiversity Strategy 2030, the UN Convention on Biological Diversity post-2020, Global Biodiversity Framework (first draft) and the National Biodiversity Action Plan 2017-2021, along with other plans and policies such as the DLR Development Plan. The Plan includes similar actions to those discussed for the DLR Development Plan and the most relevant objective within the Plan to this Proposed Scheme is:

Objective 2 - Mainstream biodiversity into decision-making and improve the management of this valuable resource.

In addition, the following actions have been considered when assessing potential ecological constraints and opportunities identified by this ecological assessment and when assessing requirements for ecological mitigation:

- **Action 2.4:** Produce an Invasive Alien Species (IAS) Action Plan and ensure the implementation and monitoring of actions.
- **Action 2.7:** Produce guidance on net gains for biodiversity, including guidance for strategies, planning, mitigation measures, and investment in green infrastructure.
- **Action 2.11:** Develop guidelines to outline the process to be followed where there is the potential for artificial lighting to affect wildlife and apply these to planning development, new projects, lighting upgrades (retrofitting) and where there is evidence of wildlife being affected by existing artificial light. The aim of the guidelines is that artificial light will be managed so wildlife is not disrupted within, nor displaced from, important habitat; and is able to undertake critical behaviours, such as foraging, reproduction and dispersal.

Appendix C Methodology

Preliminary roost assessment

A preliminary bat roost suitability assessment of trees within the Survey Area was carried out during the walkover survey following guidance from Bat Conservation Trust (BCT) (Collins, 2016).

During daylight hours, trees within the Survey Area were subject to a visual ground-based PRA. The PRA was carried out to assess the suitability of structures to support roosting bats and to identify the presence of potential roost features (PRFs) and access points.

External signs that bats are using a building, structure or tree as a roost can include:

- presence of entry points such as suitably sized gaps and crevices;
- bat droppings: black droppings, 5-10 mm long that crumble to a fine dust when crushed and may be located on the ground or stuck to tree trunks or branches;
- staining: secretions from bat fur, which can cause oily brown stains in the vicinity of roost entrances. urine stains which may be present below the entrance to the roost;
- audible squeaking from within the roost site;
- odour, which may be indicative of a large roost; and,
- flies around the entrance of a roost, attracted by the smell of bat droppings.

Updated BCT guidelines has been published (Collins, 2023) after the PRA was carried out and thus, the categorisation of buildings within the Survey Area were categorised as having Negligible, Low, Moderate, or High suitability for roosting bats in accordance with older BCT guidelines (Collins, 2016) as set out in the table below.

Bat roost suitability categories

Suitability	Description of roosting habitats
Negligible	Negligible habitat features on Site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRF but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more PRF that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more PRF that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

Source: Collins (2016).

Appendix D Protected and notable species desk study search

Following a data search, NBDC and NPWS databases returned records of notable species within the Study Area, as set out in the table below. Specific locations are not given within data searches, therefore it is unknown from where records have arisen.

Notable species records returned by NBDC and NPWS within 2 km of the Proposed Scheme

Taxon	Common name	Scientific name	Number of record(s)	Conservation designation (s)
Amphibian	Common frog	<i>Rana temporaria</i>	29	WA
	Smooth newt	<i>Lissotriton vulgaris</i>	2	WA
Bird	Artic tern	<i>Sterna paradisaea</i>	7	BirdsDir A1, WA
	Barn owl	<i>Tyto alba</i>	8	BOCCI Red List, WA
	Bar-tailed godwit	<i>Limosa lapponica</i>	6	BirdsDir A1, BOCCI Red List, WA
	Black-necked grebe	<i>Podiceps nigricollis</i>	2	BOCCI Red List, WA
	Black-tailed godwit	<i>Limosa limosa</i>	5	BOCCI Red List, WA
	Common scoter	<i>Melanitta nigra</i>	7	BOCCI Red List, WA
	Common tern	<i>Sterna hirundo</i>	12	BirdsDir A1, WA
	Curlew	<i>Numenius arquata</i>	17	BOCCI Red List, WA
	Dunlin	<i>Calidris alpina</i>	9	BOCCI Red List, WA
	Great-northern diver	<i>Gavia immer</i>	13	BirdsDir A1, WA
	Greater scaup	<i>Aythya marila</i>	3	BOCCI Red List, WA
	Goldeneye	<i>Bucephala clangula</i>	3	BOCCI Red List, WA
	Golden plover	<i>Pluvialis apricaria</i>	3	BirdsDir A1, BOCCI Red List, WA
	Grey plover	<i>Pluvialis squatarola</i>	3	BOCCI Red List, WA
	Hen harrier	<i>Circus cyaneus</i>	1	BirdsDir A1, WA
	Kingfisher	<i>Alcedo atthis</i>	6	BirdsDir A1, WA
	Little egret	<i>Egretta garzetta</i>	4	BirdsDir A1, WA
	Little gull	<i>Larus minutus</i>	1	BirdsDir A1, WA
	Meadow pipit	<i>Anthus pratensis</i>	30	BOCCI Red List, WA
	Mediterranean gull	<i>Larus melanocephalus</i>	84	BirdsDir A1, WA
	Merlin	<i>Falco columbarius</i>	3	BirdsDir A1, WA
	Northern lapwing	<i>Vanellus vanellus</i>	9	BOCCI Red List, WA
	Northern pintail	<i>Anas acuta</i>	2	BOCCI Red List, WA
	Oystercatcher	<i>Haematopus ostralegus</i>	47	BOCCI Red List, WA
	Peregrine falcon	<i>Falco peregrinus</i>	8	BirdsDir A1, WA
	Pochard	<i>Aythya ferina</i>	2	BOCCI Red List, WA
Razorbill	<i>Alca torda</i>	24	BOCCI Red List, WA	
Red knot	<i>Calidris canutus</i>	3	BOCCI Red List, WA	
Redshank	<i>Tringa totanus</i>	32	BOCCI Red List, WA	
Red-throated diver	<i>Gavia stellata</i>	16	BirdsDir A1, WA	
Redwing	<i>Turdus iliacus</i>	11	BOCCI Red List, WA	
Roseate tern	<i>Sterna dougallii</i>	2	BirdsDir A1, WA	

Taxon	Common name	Scientific name	Number of record(s)	Conservation designation (s)
	Sandwich tern	<i>Sterna sandvicensis</i>	14	BirdsDir A1, WA
	Snipe	<i>Gallinago gallinago</i>	7	BOCCI Red List, WA
	Swift	<i>Apus Apus</i>	12	BOCCI Red List, WA
	Twite	<i>Carduelis flavirostris</i>	1	BOCCI Red List, WA
	Woodcock	<i>Scolopax rusticola</i>	6	BOCCI Red List, WA
	Yellowhammer	<i>Emberiza citrinella</i>	6	BOCCI Red List, WA
Flowering plant	Dense-flowered fumitory	<i>Fumaria densiflora</i>	1	RE
	Green field-speedwell	<i>Veronica agrestis</i>	2	NT
Invasive non-native species	Butterfly bush	<i>Buddleja davidii</i>	12	Medium-impact
	Brown rat	<i>Rattus norvegicus</i>	6	Sch Inv, High-impact
	Cherry laurel	<i>Prunus laurocerasus</i>	1	High-impact
	Common broomrape	<i>Orobanche minor</i>	2	Medium-impact
	Grey squirrel	<i>Sciurus carolinensis</i>	16	Sch Inv, High-impact
	Japanese knotweed	<i>Fallopia japonica</i>	5	Sch Inv, High-impact
	Sika deer	<i>Cervus nippon</i>	1	High-impact
	Sycamore	<i>Acer pseudoplatanus</i>	2	Medium-impact
	Three-cornered garlic	<i>Allium triquetrum</i>	2	Sch Inv, Med-impact
	Traveller's-joy	<i>Clematis vitalba</i>	3	Medium-impact
	Turkey oak	<i>Quercus cerris</i>	1	Medium-impact
	Harlequin ladybird	<i>Harmonia axyridis</i>	1	Sch Inv, High-impact
Invertebrates	Large red tailed bumble bee	<i>Bombus (Melanobombus) lapidarius</i>	19	NT
	Yellow shell	<i>Campptogramma bilineata</i>	1	NT
Mammals - bats	Leisler's bat	<i>Nyctalus leisleri</i>	4	HabDir, WA
	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	2	HabDir, WA
Mammals – terrestrial	Red squirrel	<i>Sciurus vulgaris</i>	1	WA
	Otter	<i>Lutra lutra</i>	5	HabDir, WA
	Red deer	<i>Cervus elaphus</i>	1	WA
	West European hedgehog	<i>Erinaceus europaeus</i>	12	WA

HabDir –Habitats Directive.

BirdsDir A1– Annex I of Birds Directive.

WA –Wildlife Acts.

BoCCI Red List – Birds of Conservation Concern in Ireland on the Red List.

Irish Red List status (NT - Near Threatened, RE – Regionally Extinct)

Sch Inv - Third Schedule of Habitats Regulations.

High-impact – high-impact invasive species in Ireland; Medium-impact – medium-impact invasive species in Ireland.

