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SOCIAL AND AFFORDABLE PURCHASE MIXED TENURE HOUSING DEVELOPMENT AT CASTLEFIELD AVENUE AND OLD KNOCKLYON ROAD, DUBLIN 16

Appropriate Assessment Screening Report

Prepared for:

South Dublin County Council

Comhairle Contae Átha Cliath Theas
South Dublin County Council

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APPROPRIATE ASSESSMENT SCREENING REPORT

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Abstract: This document is to inform the Competent Authority in carrying out their statutory obligations relating to the Habitats Directive requirement for Appropriate Assessment for plans and projects seeking consent. Appropriate Assessment is required under Article 6 (3) of the Habitats Directive for any project or plan that may give rise to significant effects on a European (Natura 2000) site.

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1. INTRODUCTION

Fehily Timoney and Company (FT)[1] was commissioned by South Dublin County Council to prepare an Appropriate Assessment Screening Report for a housing development located at Castlefield Avenue and Old Knocklyon Road, Dublin 16.

This report presents an examination of whether the proposed development is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report has been prepared to inform the competent authority in completing their statutory obligations in relation to Appropriate Assessment, as required by Article 6(3) under Council Directive 92/43/EEC (Habitats Directive).

1.1 Legislative Context

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) provides legal protection for habitats and species of European importance. The Directive requires that where a plan or project is likely to have a significant effect on a European Site, while not directly connected with or necessary to the nature conservation management of the site, it will be subject to 'Appropriate Assessment' to identify any implications for the European site in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

> *"6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

The competent authority must carry out a screening for appropriate assessment to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on a European site. If it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site, an appropriate assessment of its implications for the European Site(s) in view of the Site's conservation objectives is required to be carried out.

The provisions of Article 6(3) do not apply where the proposed development is 'connected with or necessary to the management of the site'. In this case, the proposed development is not directly connected with or necessary to the management of any European site(s).

[1] Details on the contributors to this report are provided in Appendix 1.

1.2 Methodology

1.2.1 Guidance

The assessment was conducted in accordance with the following guidance:

- Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission Notice (2021) Brussels, 28.9.2021 C(2021) 6913 final (European Commission, 2021).
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin (2009, updated 2010) (Environment Heritage and Local Government, 2009).
- Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (2019). Brussels, (2019/C 33/01). OJ C 33, 25.1.2019.
- Interpretation Manual of European Union Habitats. Version EUR 28. (European Commission, 2013)
- OPR Practice Note PN01 Appropriate Assessment Screening for Development Management, (Office of the Planning Regulator, 2021).

1.2.2 Process

The process of determining the likelihood of significant effects from a proposed project on European sites is an iterative process centred around a Source-Pathway-Receptor model. In order for an effect to be established, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism is sufficient to conclude that a potential effect cannot occur.

- Source(s) – e.g., pollutant run-off, noise, removal of vegetation;
- Pathway(s) – functional link, or ecological pathway e.g., groundwater connecting to nearby wetland habitats, or loss of foraging habitat; and,
- Receptor(s) – the qualifying habitats and species of European sites and ecological resources supporting those habitats/species.

In the context of this report, a source is any identifiable element of the proposed project that is known to interact with the receiving environment. A receptor is the Qualifying Interests (QI)[2] for an SAC or Special Conservation Interests (SCI)[3] for an SPA or an ecological feature that is known to be utilised by the QI/SCI. In practice, the term Qualifying Interests also applies to SCIs (and is used in this document for simplicity). A pathway is any connection or link between the source and the receptor.

[2] SACs are areas designated under the Habitats Directive to conserve habitats listed in Annex I of the Directive and plant and animal species listed in Annex II. Collectively these are referred to as the 'Qualifying Interests' or 'QIs' of the SAC.
[3] SPAs are sites classified under the Birds Directive to protect rare or vulnerable bird species listed in Annex I to the Directive as well as regularly occurring migratory species and wetlands. Wetland habitats that support internationally important populations of migratory birds may be coastal or inland. Collectively, these species and habitats are referred to as the 'Special Conservation Interests' of the SPA.

The assessment commences with a description of the project, along with a description of the receiving environment and the associated sources for impacts to the receiving environment. All elements of the project are presented including the project location and existing baseline environment. The type of impacts that are likely due to the project (Source) are identified having regard to the spatial and temporal scale of the project, resource requirements and likely emissions. These sources are then used to define the zone of influence (ZoI) of the project as detailed in Section 2.3.

The European Commission Notice (2021) on the 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC', states that in identifying European sites (Natural 2000 sites), which may be affected by the project, the following should be identified:

- Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- Any European sites within the likely zone of influence of the plan or project. European sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g., water) and various types of waste, discharge or emissions of substances or energy;
- European sites whose connectivity or ecological continuity can be affected by the plan or project.

The zone of influence of a proposed project is therefore the geographical area over which it could affect the receiving environment in a way that could have potential effects on the Qualifying Interests of a European site. The OPR (2021) practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor (S-P-R) framework and not by arbitrary distances (such as 15 km). Section 3.2 sets out the detailed rationale for the identification of relevant European sites within the ZoI based on the sources of impacts arising from the proposed project. Subsequently, an assessment is undertaken with respect to potential connectivity (Pathways) to European Sites and their qualifying interests/special conservation interests are identified.

The potential for in-combination effects with other plans and projects is examined in Section 3.3, having regard to the identified impacts of the project along the ecological pathways identified to European sites.

In Section 3.4 the likelihood of significant effects of the European Sites within the ZoI is examined having regard to the sensitivity of the site with pathways for impacts associated with the project on its own and in combination with other plans and projects.

Having regard to the European Commission Communication on the Precautionary Principle (European Commission, 2021) the:

> *"absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved."*

Where significant effects are determined to be likely, or where there is uncertainty regarding the likelihood of significant effects, the project will be required under law to be subjected to Appropriate Assessment.

This AA screening is based on best scientific knowledge and has utilised ecological expertise. In addition, a detailed online review of published scientific literature was conducted. This included a detailed review of the National Parks and Wildlife Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives.

2. DESCRIPTION OF THE PROJECT

2.1 Project Description

2.1.1 Project Location

The proposed development is located within a suburban setting in Knocklyon, Co. Dublin. The M50 borders the Site directly to the east while several residential housing units surround the Site to the west, north and south. The surrounding area consists of further residential units and open spaces typical of suburban areas. The Site is composed of rank grassland, scrub and is bordered by treelines and walls. No watercourses or drains are present at the Site. The Site is largely flat but moderately sloped towards the centre. The historical route of the now culverted Orlagh watercourse flows in a northly directly approximately 50 m west of the Site before entering the Dodder River which is approximately 350 m north-west of the Site. The Dodder in turn flows eastwards before entering Dublin Bay.

The proposed development will consist of 31 homes, associated open spaces, and all site and development works necessary to facilitate the proposed development and will include:

- Construction of 10 x three storey, three bedroom, houses in two terraced buildings and one semi-detached building.
- Construction of 4 x two-bedroom apartments in a two storey building.
- Construction of a two and three storey apartment building which will comprise: 1 x studio apartment, 8 x one-bedroom apartments, 4 x two-bedroom apartments and 4 x three bedroom apartments.
- New boundary treatment to neighbours and roads, associated upgrading of roadways and paths, provision of car and cycle parking spaces, all hard and soft landscape works, lighting, boundary structures and all associated infrastructure, site and development works necessary to facilitate the proposed development.

2.1.2 Construction Phase

The proposed development will have a requirement for imported materials, primarily concrete, steel, stone and asphalt. Importation of fill will be required beneath apartment blocks and roadways (structural fill). The volumes required will be informed by inter alia the ground conditions at the Site, which will also influence whether foundations will be piled or rafted etc. The majority of new materials brought to site will be used immediately. The remainder will be stored within the site boundary.

Excavation of subsoil layers will be required in order to allow road construction, foundation excavation, drainage and utility installation. Material excavated on the site will be used in construction. However, where there is excess soil, this will be removed from the site to a licenced disposal site. Prior to commencement of construction - a comprehensive Site Investigation (SI) will be undertaken to establish the underlying geology of the site. As part of the SI, soil contamination testing will be undertaken on any made ground to establish if any soil contamination is present. The level of contamination (if any) will be assessed, and the material Waste Acceptance Criteria established as either inert, non-hazardous or hazardous. Following the classification of the material, any material to be removed from site will be disposed of to an appropriate licenced facility.

A list of typical plant that will be utilised on-site is provided below:

List of typical machinery/vehicles:

- Tracked excavators
- Mobile crane
- Grader
- Front loader
- Dumper
- Ride-on roller
- Tipper lorry

Construction hours expected: Normal working hours on site shall be 07:00 to 19:00 Mon to Fri and 08:00 to 16:30 on Sat.

2.1.3 Operational Phase/Post Construction

All residential units will be designed to achieve a A2 Building Energy Rating. Specifics of how this will be achieved will be explored with a Mechanical & Electrical Engineer once appointed post planning. It is likely that air source heat pumps will be utilised for all units. Photovoltaic (PV) panels might potentially also be utilised, subject to BER evaluation by the appointed Mechanical and Electrical (M&E) Engineer .

The Drainage Strategy for the proposed development can be viewed in Engineering Drawings (Ref. C-104 and C-105). New foul sewer lines are proposed to be laid along Homeville Road and Castlefield Avenue, which will connect into the existing Uisce Éireann Network. Swales have been proposed to the north of the site and along the eastern boundary. Runoff from the proposed development will be discharged to Swale 3 and Basin 1 (to the north of the site), which will provide a storage of 175m3, to Swale 2 (providing a capacity of 25m3), and Swale 3 (50m3) of storage, to the south-east of the site.

All permeable paving will have storage in sub-base for runoff from units and hardstanding, which amounts to a total combined storage of 80m3. Proposed roadway and car parking runoff will infiltrate through the permeable paving onto drainage stone, before discharging to perforated pipes and then onto the mainline.

Surface water run-off at the site will be suitably attenuated in accordance with Sustainable Drainage System (SuDS) principles.

2.2 Existing Environment

2.2.1 Description of Existing Ecological Baseline

2.2.1.1 Desktop Assessment

A desk study was carried out to collate available information on the existing natural environment at the proposed project location. This comprised a review of the following publications, data and datasets:

- Environmental Protection Agency (EPA) (on-line map-viewer including the Appropriate Assessment Tool)[4];
- Department of Housing, Planning, and Local Government- EIA Portal;
- National Parks and Wildlife Service – online European site network information, including site conservation objectives[5];
- National Parks and Wildlife Service – Information on the status of EU protected habitats and species in Ireland (including Article 17 and Article 12 Reports);

According to EPA maps, the subsoils in this area comprise Limestone till, sands and gravels (Carboniferous), and the proposed development is underlain by Fine loamy drift with limestones.

The historical route of the Orlagh watercourse flows in a northly directly approximately 50 m west of the red line boundary before entering the Dodder River which is approximately 350 m north-west of the Site. No watercourses are present on the proposed development site.

2.2.1.2 Field Assessment

A site visit was undertaken on the 18th June 2024 by ecologist Daniel Weldon. A walkover survey of the site was undertaken with aim of assessing the following:

- Assess the habitat for suitability to support QIs/SCIs of relevant Natura 2000 sites and to identify the presence or potential presence of QIs/SCI species.
- Determine any hydrological connectivity of the site with proximate watercourses.
- Identify the presence of invasive alien species as listed on the third schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 as amended.

4 https://gis.epa.ie/EPAMaps/ Accessed 19/06/2024.
5 www.npws.ie Accessed 19/06/2024.

The proposed development site consists of two blocks separated by the Rld Knocklyon road and were dominated by species poor rank grassland categorised as Dry meadows and grassy verges (GS2) primarily composed of Yorkshire-fog. Other species present within the grassland included hogweed (Heracleum sphondylium), cocks-foot (Dactylis glomerata), docks (Rumex spp.), creeping thistle (Cirsium arvense), creeping buttercup (Ranunculus repens), cow parsley (Anthriscus sylvestris) and nettle (Urtica dioica). Encroaching bramble (Rubus fruticosus agg.) is present in many areas within the grassland and transitions to Scrub (WS1) adjacent to the old Knocklyon road. Willow (Salix spp.) was also present here. Winter heliotrope (Petasites pyrenaicus) is also present along the eastern boundary of the site. Much of the site boundary is composed of walls classified as Buildings and artificial surfaces (BL3). Hedgerows (WL1) and Treelines (WL2) provide the boundary for the remainder of the site. Hedgerows at the site were species poor and almost entirely comprised of butterfly-bush (Buddleja davidii) with some cherry laurel (Prunus laurocerasus) present along the eastern boundary of the site. Treelines were also dominated by non-native cypress (Cupressus x leylandii), horse chestnut (Aesculus hippocastanum), sycamore (Acer pseudoplatanus) and limes (Tilia spp.).

Figure 2-1: Habitats present within the northern block of the proposed development site

Figure 2-2: Habitats present within the southern block of the proposed development site

2.3 Potential Interactions of the Proposed Project on the receiving environment

Having regard to the European Commission (2021) guidance document and the OPR (2021) practice note, the potential impacts of the project on the receiving environment at source are set (in Table 2.1) out relative to the following criteria:

- Habitat destruction/fragmentation/deterioration;
- Surface water run-off carrying suspended silt and contaminants, into local watercourses;
- Changes to groundwater quality, yield and/or flow paths associated with the proposed project;
- Project related activities (noise, vibration, lighting, human presence, structures, etc);
- Air pollution due to dust and other airborne emissions; and
- Disturbance and potential spread of invasive species during the proposed works.

These impacts are further examined in defining the Zone of Influence (ZoI) of the project to identify likely significant effects through the Source-Pathway-Receptor assessment (Section 3.2).

Table 2-1: Identification of sources for impacts arising from the proposed project that have potential for interactions with the receiving environment

Criteria	Potential sources of impact
Habitat destruction / fragmentation / deterioration	*Construction Phase* Site clearance will involve the removal of rank grassland, tree lines, and scrub. However, these habitats are common in the wider landscape and given the size and scale of the proposed development it is foreseen that these activities will not have a significant effect on the receiving environment. *Operational Phase* No works that could cause habitat destruction, fragmentation or deterioration will take place during this phase.
Surface water run-off carrying suspended silt and contaminants, into local watercourses.	*Construction Phase* The historic route of Orlagh River is located 50 m west of the red line boundary separated by a road and residential housing. No watercourses are present at the proposed development site. *Operational Phase* Surface water generated at the proposed development will be discharged to the receiving surface water sewer at Castlefield Avenue. Surface water run-off at the site will be suitably attenuated in accordance with Sustainable Drainage System (SuDS) principles.
Changes to groundwater quality, yield and/or flow paths associated with the proposed project.	*Construction Phase* During the construction phase, project works will not involve activities that lead to changes in groundwater quality, yield and/or flow paths. Earthworks are required during construction for foundations at the Site and could have potential to require dewatering of groundwater and associated draw down of water levels *Operational Phase* During the operational phase, there will be no e activities that lead to changes in groundwater quality, yield and/or flow paths.

Criteria	Potential sources of impact
Project related activities (noise, vibration, lighting, human presence, structures, etc.	*Construction Phase* Elevated levels of noise and vibration will occur as a result of project works, during the construction phase. Adjacent lands to the project consist of roads, residential housing, improved grassland and occasional treelines/hedgerows. Works will also require lighting, which may project onto these habitats. An increase in human presence will also occur as a result of project works. *Operational Phase* Increased human presence will occur at the Site with associated increases noise and lighting levels locally.
Air pollution due to dust and other airborne emissions.	*Construction Phase* Project works will involve excavation, which is likely to emit dust. As a general rule, *Holman et al. 2014*[6] prescribes a 50m zone of influence for dust effects from track out and construction activities at 'small' construction sites. Dust deposition into the adjacent habitats is therefore expected (in the absence of mitigation). *Operational Phase* No activities will be carried out during the operational phase of this project that could cause air pollution.

[6] Holman et al (2014). IAQM Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, London. www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf.

Criteria	Potential sources of impact
Disturbance and potential spread of invasive species during the proposed works.	*Construction Phase* There are no records of invasive species listed on the Third Schedule within the proposed development. *Operational Phase* During this phase, no works that could spread invasive species will take place.

3. SCREENING FOR APPROPRIATE ASSESSMENT

3.1 Introduction

This section of the report examines if the Castlefield Avenue Social and Affordable Purchase Mixed Tenure Housing Development is likely to have a significant effect upon European sites, either alone or in combination with other plans or projects.

3.2 Identification of European Sites within the Zone of Influence of the Proposed Project

The OPR (2021) AA Screening practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor model. The S-P-R model has been used to identify the ZoI to ensure that relevant European sites are identified. The S-P-R model minimises the risk of overlooking distant or obscure effect pathways, while also avoiding an over reliance on buffer zones (e.g. 15 km), within which all European sites should be considered. This approach follows the DoEHLG (2009 rev 2010) guidance on AA which states that:

> *"For projects, the distance could be much less than 15 km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects".*

As detailed in section 1.3.2, in order for an effect to occur, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism means there is no likelihood for the effect to occur. The potential impacts of the proposed development are set out in Section 2.3 of this report. The impact is essentially the 'source' in the S-P-R model.

These impacts may be very localised and confined to the proposed development site with no potential connectivity to a European site and therefore no potential for effects. Alternatively, where an ecological or functional pathway exists they may give rise to a potential effect to a Qualifying Interest of a European site. This section of the report identifies the potential pathways to European sites emanating from these potential sources of impact.

The dominant ecological pathways to consider are:

- Direct physical interactions or changes to the local environment;
- Air dispersal (noise, dust, odour emissions etc.);
- Hydrological interactions; and
- Dispersal patterns of mobile species.

The potential impacts of the Castlefield Avenue Social and Affordable Purchase Mixed Tenure Housing Development on the receiving environment (identified in Table 2.1) are as follows:

- Increase locally in noise and lighting levels during construction and operation;
- Temporary increase in dust during construction;

- Temporary dewatering excavations, resulting in drawdown of the local water table.

These impacts are further considered in terms of:

- Potential effects to groundwater / hydrogeology;
- The potential effects to mobile SCI from SPAs;
- The potential effect to mobile QI species from SACs;
- Whether there are any European sites geographically overlapping or adjacent to any of the impacts of the proposed project (noise, lighting and dust).

3.2.1 Zone of Influence of the proposed project

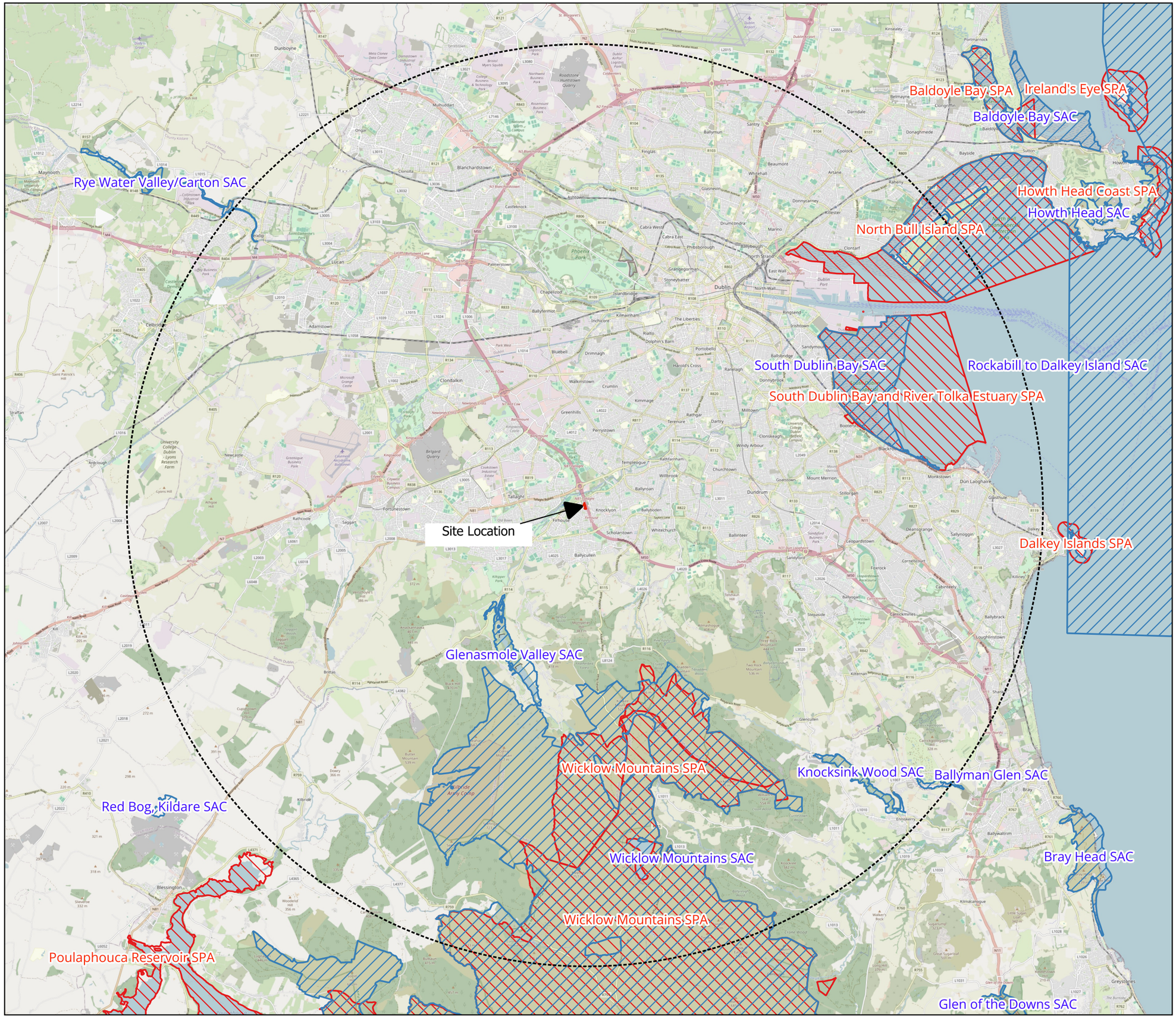
In consideration of the potential impact of the proposed project, the ZoI has been identified as:

- All European sites within 15 km SPA's and SPA's designed for Greylag and Barnacle Geese within 25km of the Castlefield Avenue Housing Development;
- Any European sites within 2 km of the Castlefield Avenue Housing Development, with potential impacts from habitat loss, noise, lighting, invasive species and dust.

A map showing the European sites in the context of the site is presented in Figure 3-1 overleaf.

Please refer to Appendix 2 for further information on the basis of the identified ZoI for the proposed development.

The findings of the ZoI assessment are presented in Table 3.1.



Legend

- Indicative Site Boundary
- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- 15km Zone of Influence

European Sites within 15km Zone of Influence

Social Housing Development
at Castlefield Avenue and Old Knocklyon Road,
Dublin 16

Figure No.	3-1
Client	South Dublin County Council
Date	02/07/2024

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Scale 1:200,000

Table 3-1: Identification of European Sites within the Zone of Influence of the Castlefield Avenue Social and Affordable Purchase Mixed Tenure Housing Development

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
001209	Glenasmole Valley SAC	3.84	Petrifying springs with tufa formation (Cratoneurion) [7220], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410], Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) * important orchid sites [6210]	The SAC is sensitive to direct land use management activities, groundwater and hydrological interactions.	Terrestrial based habitats for which the SAC is designated for lie outside the Zone of Influence from the proposed development site. The GWDTE (tufa springs) associated with the SAC are located beyond the 250m ZoI for groundwater effects (see Appendix 2 for more detail on ZoI). The SAC is located 5.2km upstream of Orlagh river. However, the proposed development has no potential for hydrological connectivity to the river given the culverted nature of the watercourse and its location outside of the proposed development red line boundary.	No = no potential pathway for effect
004040	Wicklow Mountains SPA	5.39	Peregrine falcon (Falco peregrinus) [A103], Merlin (Falco columbarius) [A098]	The SPA is sensitive to disturbance effects and direct	The proposed development site lies outside the Zone of	No - no potential pathway for effect

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
				land use management activities.	Influence for direct effects on the designated Site. No suitable nesting or foraging habitat is present given the size, scale and location of the proposed development site within an urban landscape.	
002122	Wicklow Mountains SAC	5.65	Siliceous rocky slopes with chasmophytic vegetation [8220], Alpine and Boreal heaths [4060], Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0], European dry heaths [4030], Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110], Blanket bogs * if active bog [7130], Natural dystrophic lakes and ponds [3160], Otter (Lutra lutra) [1355], Northern Atlantic wet heaths with Erica tetralix [4010], Calcareous rocky slopes with chasmophytic vegetation [8210], Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110], Calaminarian grasslands of the Violetalia calaminariae [6130], Species-rich Nardus grasslands, on siliceous substrates in mountain areas - and submountain areas in Continental Europe [6230]	The SAC is sensitive to disturbance effects, direct land use management activities and hydrological interactions.	Terrestrial based habitats for which the SAC is designated for lie outside the Zone of Influence from the proposed development site. The designated site is located 9km upstream of Orlagh River. However, the proposed development has no potential for hydrological connectivity to the river given the culverted nature of the watercourse and its location outside of the proposed development red line boundary. No suitable habitat for otter exists at the proposed development site.	No = no potential pathway for effect

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
					Therefore, disturbance/displacement effects are not anticipated as a result of the proposed project.	
000210	South Dublin Bay SAC	8.92	Embryonic shifting dunes [2110], Salicornia and other annuals colonising mud and sand [1310], Annual vegetation of drift lines [1210], Mudflats and sandflats not covered by seawater at low tide [1140]	The hydrologically sensitive habitats of this SAC are highly sensitive to changes in siltation loads, the distribution of silt loads, pollutants and water levels, and anthropogenic disturbance.	Terrestrial based habitats for which the SAC is designated for lie outside the Zone of Influence from the proposed development site. The designated site is located over 17km downstream of Orlagh watercourse However, the proposed development has no potential for hydrological connectivity to the river given the culverted nature of the watercourse and its location outside of the proposed development red line boundary.	No = no potential pathway for effect
004024	South Dublin Bay and River Tolka Estuary SPA	8.96	Sanderling (Calidris alba) [A144], Common tern (Sterna hirundo) [A193], Dunlin (Calidris alpina) [A149], Bar-tailed Godwit (Limosa lapponica) [A157], Arctic	The hydrologically sensitive habitats and species of this SPA are highly sensitive to changes in siltation loads, the	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site.	N

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
			tern (Sterna paradisaea) [A194], Black-headed Gull (Chroicocephalus ridibundus) [A179], Oystercatcher (Haematopus ostralegus) [A130], Roseate Tern (Sterna dougallii) [A192], Light-bellied Brent Goose (Branta bernicla hrota) [A046], Redshank (Tringa totanus) [A162], Wetland and Waterbirds [A999], Knot (Calidris canutus) [A143], Ringed Plover (Charadrius hiaticula) [A137], Grey Plover (Pluvialis squatarola) [A141]	distribution of silt loads, pollutants, water levels, and anthropogenic disturbance.	No suitable foraging or roosting sites for the SCI's exists at the proposed development site.	
004006	North Bull Island SPA	12.82	Shelduck (Tadorna tadorna) [A048], Teal (Anas crecca) [A052], Dunlin (Calidris alpina) [A149], Knot (Calidris canutus) [A143], Bar-tailed Godwit (Limosa lapponica) [A157], Wetland and Waterbirds [A999], Black-tailed Godwit (Limosa limosa) [A156], Oystercatcher (Haematopus ostralegus) [A130], Pintail (Anas acuta) [A054], Golden Plover (Pluvialis apricaria) [A140], Redshank (Tringa totanus) [A162], Light-bellied Brent Goose (Branta bernicla hrota) [A046], Curlew (Numenius arquata) [A160], Shoveler (Anas clypeata) [A056], Sanderling (Calidris alba) [A144], Black-headed Gull (Chroicocephalus ridibundus) [A179], Grey Plover (Pluvialis squatarola) [A141], Turnstone (Arenaria interpres) [A169]	The hydrologically sensitive species of this SPA are highly sensitive to changes in siltation loads, the distribution of silt loads, pollutants, water levels and anthropogenic disturbance.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site.	No = no potential pathway for effect

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
004063	Poulaphouca Reservoir SPA	15.45	Greylag Goose (Anser anser) [A043], Lesser Black-backed Gull (Larus fuscus) [A183]	NA	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site	No = no potential pathway for effect
004172	Dalkey Islands SPA	15.50	Common tern (Sterna hirundo) [A193], Roseate tern (Sterna dougallii) [A192], Arctic tern (Sterna paradisaea) [A194]	The SPA is sensitive to hydrological interactions, disturbance effects and direct land use management activities.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site	No = no potential pathway for effect
004016	Baldoyle Bay SPA	18.28	Bar-tailed Godwit (Limosa lapponica) [A157], Shelduck (Tadorna tadorna) [A048], Golden Plover (Pluvialis apricaria) [A140], Wetland and Waterbirds [A999], Light-bellied Brent Goose (Branta bernicla hrota) [A046], Ringed Plover (Charadrius hiaticula) [A137], Grey Plover (Pluvialis squatarola) [A141]	The SPA is sensitive to hydrological interactions, disturbance effects and direct land use management activities.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site	No = no potential pathway for effect
004113	Howth Head Coast SPA	20.22	Kittiwake (Rissa tridactyla) [A188]	The SPA is sensitive to hydrological interactions, disturbance effects and direct land use management activities.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site.	No = no potential pathway for effect

Site Code	Site Name	Distance	Qualifying Feature	Potential Effects	Pathways for potential effects	Considered further in screening [Y/N]
					No suitable foraging or roosting sites for the SCI's exists at the proposed development site	
004025	Malahide Estuary SPA	21.24	Grey Plover (Pluvialis squatarola) [A141], Pintail (Anas acuta) [A054], Dunlin (Calidris alpina) [A149], Redshank (Tringa totanus) [A162], Light-bellied Brent Goose (Branta bernicla hrota) [A046], Bar-tailed Godwit (Limosa lapponica) [A157], Golden Plover (Pluvialis apricaria) [A140], Shelduck (Tadorna tadorna) [A048], Goldeneye (Bucephala clangula) [A067], Great Crested Grebe (Podiceps cristatus) [A005], Red-breasted Merganser (Mergus serrator) [A069], Black-tailed Godwit (Limosa limosa) [A156], Oystercatcher (Haematopus ostralegus) [A130], Wetland and Waterbirds [A999], Knot (Calidris canutus) [A143]	The SPA is sensitive to hydrological interactions, disturbance effects and direct land use management activities.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site	No = no potential pathway for effect
004117	Ireland's Eye SPA	21.55	Guillemot (Uria aalge) [A199], Razorbill (Alca torda) [A200], Cormorant (Phalacrocorax carbo) [A017], Kittiwake (Rissa tridactyla) [A188], Herring Gull (Larus argentatus) [A184]	The SPA is sensitive to hydrological interactions, disturbance effects and direct land use management activities.	The proposed development site lies outside the Zone of Influence for direct effects on the designated Site. No suitable foraging or roosting sites for the SCI's exists at the proposed development site	No = no potential pathway for effect

3.3 Consideration of in-combination Effects with other plans or projects

Article 6(3) of the Habitats Directive requires that:

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

It is therefore required that the likely significant effects of the proposed project are considered in-combination with any other plans or projects within the zone of influence. The consideration of in-combination effects with other plans or projects, focuses on any sources of impacts identified for the proposed project in section 2.3 and any ecological pathways identified in section 3.2.

As there are no meaningful pathways for effects identified with respect to European sites - given the nature of the habitats on the Site and the distance from relevant QI or SCI species. There are no further considerations required as the S-P-R model has been completed with no potential effects that could arise from the proposed project.

3.4 Screening Conclusion

*Conclusion option **1**: No Likely Significant Effects*

The results of the s-p-r assessment identified that - given the scale and nature of the potential sources identified in Table 2.1 - there are no likely significant effects identified to any European sites. The AA screening process has considered potential effects which may arise during all phases of the proposed project. Through an assessment of the pathways for effects and an evaluation of the sources for impacts, taking account of the processes involved and the distance of separation from European sites, it has been evaluated that there are no likely significant effects on the qualifying interests, special conservation interest or the conservation objectives of any designated European site.

4. REFERENCES

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APPENDIX 1

Statement of Authority

Surveyor	Surveys Completed	Biography
Daniel Weldon	Report Author	This report and ecological surveys were carried out by ecologist Daniel Weldon (BEnvSc.) who has over two years' professional experience and is a competent expert in the Appropriate Assessment process. He has a broad range of experience in implementing site-specific mitigation where necessary. He is vastly experienced in bird identification and behaviour and has carried out both breeding and wintering bird surveys. Daniel is also experienced in habitat and mammal surveying and ecological clerk of works
Rita Mansfield	Report Reviewer	Rita is a Principal Ecologist and Project Manager with 20 years' previous experience as a technical lead within the environmental and planning services sector. She specialises in statutory consent and environmental assessment for large scale public infrastructure projects in the energy, water (including flood relief schemes) and transport sectors. She is a qualified ecologist with experience in environmental impact assessment, planning applications (conventional and strategic infrastructure development), climate adaptation, Appropriate Assessment, foreshore licensing, Water Framework Directive, integrated catchment management, and stakeholder engagement. Rita has held numerous licences under the Wildlife Act and Habitats Directive for disturbance to species which included mitigation (e.g. construction of artificial otter holt, bat exclusion). Rita has provided advice on ecological / environmental design to various private and public sector clients, which included the development of contract requirements for Transport Infrastructure Ireland (TII) for contracts tendered using both the PPP and D&B.

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APPENDIX 2

Considerations in Defining the Potential Zone of Influence of the Proposed Project

4.1 Release of pollutants and sedimentation to watercourses with hydrological connectivity to European sites;

As a precautionary approach in defining the ecological receptors that may be affected, all European sites hydrologically connected (i.e. whereby there is potential for surface water from the project site to runoff directly into a watercourse or drain which flows into a European Site) to the Castlefield Avenue Housing Development were examined using Geographic Information System (GIS) mapping. The Site is not hydrologically connected to any European sites. There is no waterbody within or in proximity to the Site that might act as a conduit for pollution of an European site.

4.2 Potential effects to groundwater / hydrogeology

In accordance with the 'Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems, Land Use Planning System SEPA Guidance Note 31' (2017) a 250m potential zone of influence from the proposed development was considered in assessing the potential for interaction with Groundwater Dependent Terrestrial Ecosystems (GWDTE). There are no GWDTE or European Sites within 250m of the Site.

4.3 Potential effect to mobile SCI's from surrounding SPAs

The assessment has considered the potential pathways for effects on bird species based on the following principles: Generally, the core foraging range for SCI birds species is less than 15km. However, SNH (2016)[7] core foraging range for some geese species can be larger. Namely:

- Greylag goose Core range of 15-20km* Greylag Geese feed mostly on cereal stubble and grassland in their wintering areas.
- Barnacle goose Core range of 15km, with maximum recorded distance of up to 25km.

Therefore, as a precautionary approach in defining the ecological receptors that may be affected, all SPA's within 15 km and SPA's within 25km designed for Greylag and Barnacle Geese were examined using Geographic Information System (GIS) mapping. The conservation objectives of these European sites were assessed to identify potential physical or ecological connectivity to the Castlefield Avenue Housing Development having regard to the habitats within the subject lands and the surrounding area.

4.4 European sites geographically overlapping or adjacent to any of the actions or aspects of the proposed project (noise, lighting and dust)

There are no European sites geographically overlapping or adjacent to the proposed development. The closest European sites is Glenasmole Valley SAC [3.84], located 3.84km away (direct distance).

[7] poi

The Institute of Air Quality Management 'Guidance on the Assessment of dust from demolition and construction' (Holman et al, 2014)[8] states that for sensitive ecological receptors, sensitivity to dust is 'High' up to 20m from the source and reduces to 'Medium' over 50m from the source. Holman et al, 2014 also stipulates that trackout[9] may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites. Dust from soiling (excavation works) can occur up to 25 m, 50 m and 100 m, at minor, moderate, and major construction sites respectively (NRA, 2011).

The disturbance response of birds (e.g., becoming alert or a flight response) can vary depending on season, species sensitivity, and weather. Goodship and Furness (2022)[10] provides estimates of species-specific buffer zones to protect birds from human disturbance during breeding and non-breeding seasons. Therefore, a disturbance Zone of Influence of 1 km is adopted on the basis of the disturbance distances review.

Other emission sources identified in Table 2.1 (e.g. Lighting) are likely to be more localised than the distances stated for noise impacts and are assessed on a case-by-case basis.

Considering the actions or aspects of the proposed project, a precautionary ZoI of 2 km has been adopted.

4.5 Disturbance and potential spread of invasive species during the proposed works.

Invasive species can spread to other habitats by the transportation of plant fragments or soil containing seeds / plan material. This typically can occur during excavation and vegetation clearance. Machinery, vehicles and personnel coming into contact with infected areas can spread these species outside of the site. The ZOI of this potential impact requires the consideration of European sites in close proximity to the footprint of works. As a precautionary approach a ZoI of 2 km has been adopted.

[8] Holman et al (2014). IAQM Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, London. www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf.
[9] The movement of dust and dirt from a construction/demolition site onto the public road network.
[10] Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

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