



# APPROPRIATE ASSESSMENT SCREENING REPORT

FOR

Strategic Housing Development

AT

Kilmoney Road, Carrigaline, Co.

Cork.

ON BEHALF OF

**RESIDE INVESTMENTS LTD.**

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# 1 INTRODUCTION

## 1.1 Background

Enviroguide Consulting was commissioned by Reside Investments Ltd, Mallow, Co. Cork to undertake a screening for Appropriate Assessment with respect to a proposed Strategic Housing Development (the “Proposed Development”) located on Kilmoney Road, Carrigaline, Co. Cork. The purpose of this report is to provide information for the relevant competent authority to carry out screening for Appropriate Assessment.

## 1.2 Legislative Background

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). SACs and SPAs are collectively known as Natura 2000 or European Sites. It is the responsibility of each member state to designate SPAs and SACs. SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each Site is selected correspond to the qualifying interests of the Sites; from these the conservation objectives of the Site are derived.

An ‘Appropriate Assessment’ (AA) is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European Sites. A screening for AA determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a European Site, in view of its conservation objectives.

This AA Screening has been undertaken to determine the potential for significant effects on relevant European Sites. The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Development in the context of the conservation objectives of such Sites.

### 1.2.1 Legislative Context

An Appropriate Assessment is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a European Site. Paragraph 3 states that:

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

These obligations in relation to Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended (“the 2000 Act”), and in particular Section 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

*“177U.— (1) A screening for appropriate assessment of a draft Land use plan or application for consent for Proposed Development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or Proposed Development, individually or in combination with another plan or project is likely to have a significant effect on the European Site.*

*(2)...*

*(3)...*

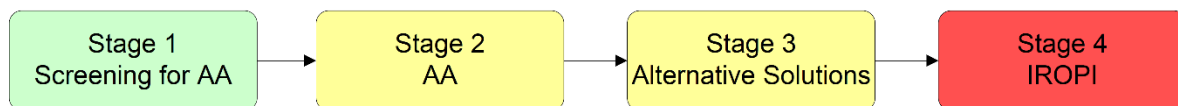
*(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European Site.*

*(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European Site.”*

### 1.2.2 Stages of AA

This Appropriate Assessment Screening Report (the “**Screening Report**”) has been prepared by Enviroguide Consulting. It considers whether the Proposed Development is likely to have a significant effect on a European Site and whether a Stage 2 Appropriate Assessment is required.

The AA process is a four-stage process, with issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.



**Figure 1. The four stages of the Appropriate Assessment Process (DEHLG, 2010).**

The four stages of an AA can be summarised as follows:

- Stage 1 *Screening* addresses:
  - whether a plan or project is directly connected to or necessary for the management of the Site, or

- whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European Site in view of its conservation objectives.
- **Stage 2: Appropriate Assessment (AA).** The second stage of the AA requires the competent authority to determine whether the project or plan (either alone or in combination with other projects or plans) will have an adverse effect on the integrity of the European Site, having regard to the conservation objectives of the site and its ecological structure and function. The developer must provide a Natura Impact Statement (NIS) to the competent authority to inform the AA, which is a statement, for the purposes of Article 6 of the Habitats Directive of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European Site, in view of the conservation objectives of the Site or Sites. It must include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European Site in view of the conservation objectives of the Site or Sites. The competent authority must consult with the public in relation to any plan or project that requires AA. If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European Site, it can only grant consent after proceeding through steps 3 and 4.
- **Stage 3: Assessment of alternative solutions.** If the outcome of Stage 2 is negative i.e., adverse impacts to the Sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- **Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain.** The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European Site, where no less damaging solution exists.

## 2 METHODOLOGY

### 2.1 Guidance

This AA Screening Report has been undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10;
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2001);
- *Communication from the Commission on the precautionary principle* (European Commission, 2000); and,
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019).



- *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 Brussels, 28.9.2021 C (European Commission, 2021); and,*
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021.*

## 2.2 Screening Steps

Screening for AA involves the following steps:

- Establish whether the plan or project is directly connected with or necessary for the management of a European Site;
- Description of the plan or project and the description and characterisation of other projects or plans that in combination have the potential for having significant effects on the European Site;
- Identification of European Sites potentially affected;
- Identification and description of potential effects on the European Site;
- Assessment of the likely significance of the effects identified on the European Site; and
- Exclusion of Sites where it can be objectively concluded that there will be no significant effects.

## 2.3 Desk Study

A desktop study was carried out in April 2022 to collate and review available information, datasets and documentation sources relevant for the completion of this Screening Report. The desktop study relied on the following sources:

- Information on the network of European Sites, boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at [www.npws.ie](http://www.npws.ie);
- Text summaries of the relevant European Sites taken from the respective Standard Data Forms and Site Synopses available at [www.npws.ie](http://www.npws.ie);
- Information on species records and distributions, obtained from the National Biodiversity Data Centre (NBDC) at [www.maps.biodiversityireland.ie](http://www.maps.biodiversityireland.ie);
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at [www.gis.epa.ie](http://www.gis.epa.ie);
- Information on surface water, storm water and sewage infrastructure within and surround the Site provided by the applicant and their design team.
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at [www.gsi.ie](http://www.gsi.ie);

- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from National Planning Application Database.

For a complete list of the specific documents consulted as part of this assessment, see *Section 5 References*.

## 2.4 Ecological Surveys

Enviroguide Consulting conducted ecological surveys on Site between the 17<sup>th</sup> of September 2021 and the 3<sup>rd</sup> of May 2022 (Table 1). Habitats present on Site were identified using methodology outlined by Fossitt (2000). Common bird, bat, non-volant mammal and invasive species surveys were conducted on the 17<sup>th</sup> of September 2021. Winter bird surveys and vantage point surveys were conducted on Site at several time points between December 2021 and April 2022. The purpose of these surveys was to determine the degree of *ex-situ* usage, if any, and activity of Special Conservation Interest (SCI) species associated with any Natura 2000 Sites within the 15km Zone of Influence of the Proposed Development. A breeding bird survey was also conducted on Site on the 3<sup>rd</sup> of May 2022. The following table presents the dates and times when surveys were conducted.

**Table 1: Details of ecological surveys undertaken at the Site.**

Survey	Date	Time	Surveyor
Habitat mapping survey Common bird survey Bat survey Invasive species survey Mammal survey	17/09/2021	2pm-10:30pm	Liam Gaffney (Enviroguide Consulting)
Winter bird survey Vantage point survey	29/12/2021	6 hours to dusk (16:30pm)	Brian McCloskey (Enviroguide Consulting)
Winter bird survey Vantage point survey	17/01/2022	6 hours to dusk (17:00pm)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	27/01/2022	6 hours from dawn (08:20am)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	08/02/2022	6 hours to dusk (17:35pm)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	24/02/2022	6 hours to dusk (16:59pm)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	23/03/2022	6 hours from dawn (06:30am)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	29/03/2022	6 hours from dawn (07:15am)	Dr Bryan Thompson (Enviroguide Consulting)
Winter bird survey Vantage point survey	07/04/2022	6 hours from dawn (06:54am)	Dr Bryan Thompson (Enviroguide Consulting)
Breeding bird survey	03/05/2022	3 hours from dawn (05:55am)	Brian McCloskey (Enviroguide Consulting)

## 2.5 Limitations

Winter bird surveys for the Proposed Development took place between December 2021 and April 2022. During this time, construction works for a pumping station, emergency storage

tank, control kiosk, welfare kiosk and rising mains (Planning Application Reference:194642) had encroached considerably onto the Site. Therefore, a large portion of the survey area was an active construction site with increased human presence.

## **2.6 Assessment of Significant Effects**

The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators, namely:

- Habitat loss or alteration
- Habitat/species fragmentation
- Disturbance and/or displacement of species
- Changes in population density
- Changes in water quality and resource

In addition, information pertaining to the conservation objectives of the European Sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

## **3 STAGE 1 SCREENING**

### **3.1 Management of European Sites**

The operation of the Proposed Development in Carrigaline is not directly connected with or necessary for the management of European Sites and there are no European Sites located within or directly adjacent to the Proposed Development lands.

### **3.2 Description of Proposed Development**

#### **3.2.1 Site location**

The Proposed Development is located in the townland of Kilmoney within the town of Carrigaline which is identified as a 'Metropolitan Town' in the Bandon-Carrigaline Municipal District Local Area Plan 2017. The Development Site is situated to the west of Carrigaline town centre and approximately 10km southeast of Cork City Centre. The Site lies to the south of the N28 Cork to Ringaskiddy route. The total Site area comprises 3.7 hectares (Ha) and has a sloped topography. There is a net developable area of 1.9 Ha. The Site is bounded to the west by agricultural lands, to the east by the Dairygold Co-op Superstore and associated car park, to the north by the Owenboy River and to the south by a number of detached bungalows and Kilmoney Road. Access to the Site is via the inner relief road (currently under construction) and Kilmoney Road which runs to the south of the Site.

#### **3.2.2 Description of Development**

The Proposed Strategic Housing Development consists of the following:

- The Proposed Strategic Housing Development consists of the following:
- The construction of 224 no. residential units consisting of 202 no. proposed apartments in 2 no. blocks, ranging in height from 6 to 7 storeys and 22 no. townhouse/duplex units:

- A 184 m<sup>2</sup> creche/childcare facility;
- The provision of landscaping and amenity areas to include 1 no. local play area, 1 no. kick about areas, an activity trail/greenway along the river, a gathering area/amphitheatre with tired seating areas, a civic space/promenade and 2 no. courtyard areas;
- The provision of 3 no. retail units, residential amenity and management spaces at ground and first floor level; and
- All associated ancillary development including vehicular access on to the Kilmoney Road Lower, and a cycle/pedestrian connection on to the R611 (via an activity trail/greenway along the river), lighting, drainage, roads boundary treatments, ESB Substation, bicycle & car parking and bin storage

### **3.2.3 Description of the Construction Phase**

The construction entrance to the Site will be from the new relief road to the west of the Site and will include vehicular access for construction traffic and pedestrian access for construction personnel. Public access, be it pedestrian or vehicular, will not be permitted to the Site. Appropriate signage will be positioned at approach roads to the Site area so as to inform the public of the Site activities.

All construction works will occur in a single phase which is estimated will take 18 months to complete. During the general excavation of the foundations there will be additional heavy goods vehicle (HGV) movements to and from the Site. All suitable material will be used for construction and fill activities where possible and appropriate. It is envisaged that tower cranes will be erected to hoist materials on site for the construction of apartments. Several measures to ameliorate noise, dust, litter, and other environmental nuisances associated with the construction phase are outlined in the Construction and Environmental Management Plan (CEMP).

For the duration of the Construction Phase, it is envisaged that the maximum working hours will be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 13:00 Saturdays, subject to the restrictions imposed by the local authorities. No working will be allowed on Sundays and Public Holidays unless express permission is obtained from the Local Authority.

### **3.2.4 Description of the Operational Phase**

The Operational Phase will comprise of retail and residential use consistent with the neighbouring land use in the area.

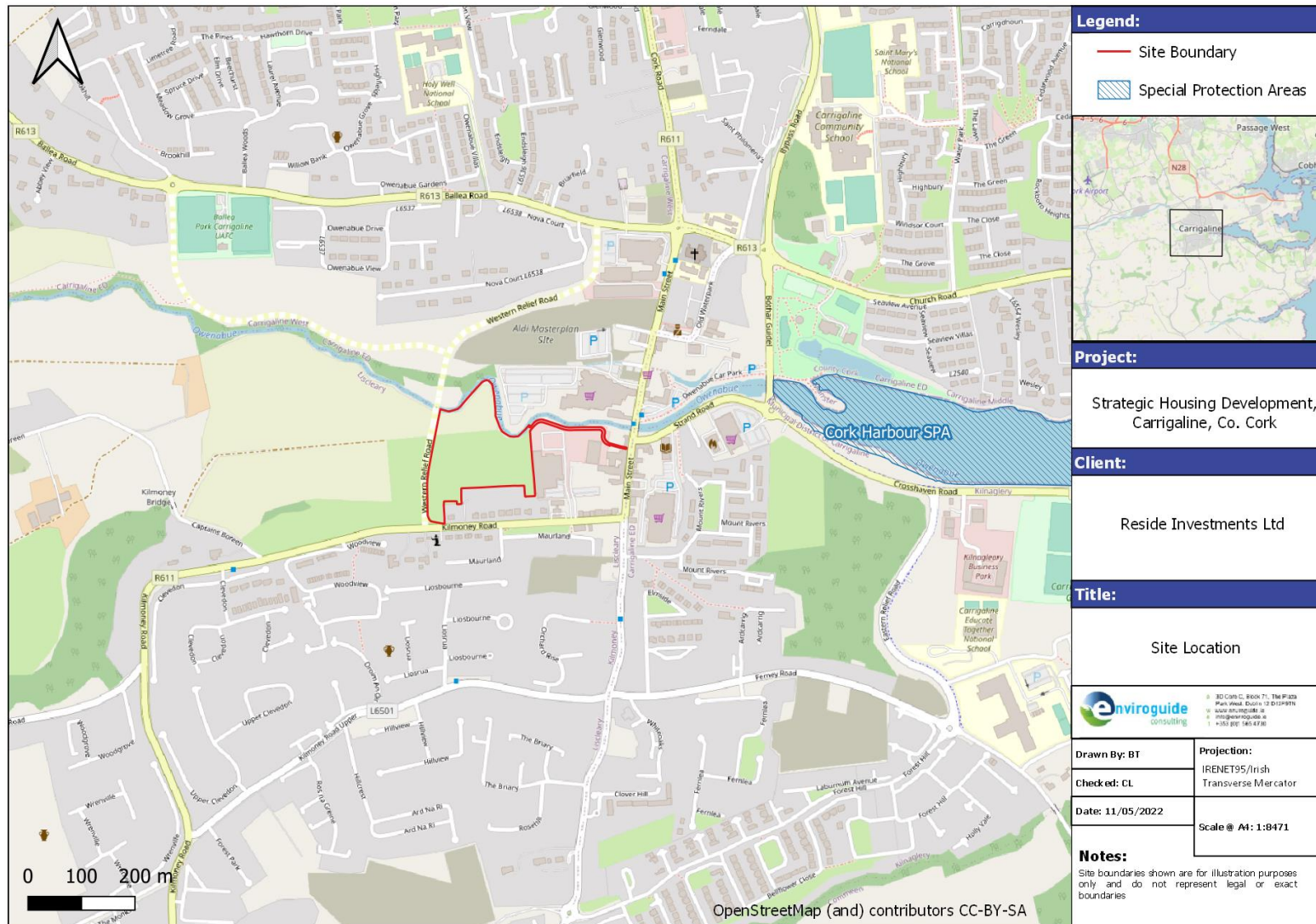


Figure 2. Site location



Figure 3. Site Master Plan (Orange arrows represent pathways of pedestrian circulation)

### 3.3 Existing Environment

#### 3.3.1 Geology, Hydrology and Hydrogeology

The quaternary sediments beneath the Site are mapped by Geological Survey Ireland (GSI) as “*Alluvium*” and “*Till derived from Namurian sandstones and shales*” (GSI, 2022). The SIS National Soils database also classifies the Site as ‘*Urban*’ (GSI, 2022). The bedrock units underlying the area is mapped by the GSI as “*Sandstone & interbedded pyritic mudstone*” (GSI, 2022).

The Proposed Development Site is located in the Lee, Cork Harbour and Youghal Bay catchment, the *Owenboy [Cork]\_ SC\_010* sub-catchment and the *Owenboy (Cork)\_040* river sub-basin. The Owenboy River (EPA code: 19O01), is a 4th order river that runs along the northern boundary of the Proposed Site and flows east through the Owenboy estuary until it reaches the mouth of Cork harbour at Rams Head. Water quality monitoring stations (RS19O011000 and RS19O011400) located upstream of the Proposed Development report water quality as being “*Moderate-Good*” with a Q value score of 3-4 for the most recent monitoring timepoints in 2005 and 2020 respectively. The Owenboy River is classified under the Water Framework Directive (WFD) as being of “*Moderate*” status (2013-2018). The water quality of the Owenboy Estuary downstream of the Proposed Development was classed as “*intermediate*” during the latest reporting period 2018-2020.

The Site is located within the *Ballinhassig East* groundwater body (GWB) (IE\_SW\_G\_004). The GWB covers the majority of the greater Cork City area reaching from Carrigaline in the south to Watergrasshill in the north and extents from Coolcower in the west to Youghal in the east. The main rivers flowing through the GWB are the rivers Lee, Glashaboy, Owenboy, Bride and Glen. The GWB covers a total area of 1,209 km<sup>2</sup>. The current WFD risk status for this GWB is reported as ‘*Good*’, and the groundwater 2013-2018 Risk Status was reported as *At Risk* (EPA, 2022). The Site area is located on a bedrock aquifer that is Classed as Rkd: *Locally Important Aquifer – Bedrock which is moderately productive only in local zones* with groundwater vulnerability classed as either *High* or *Moderate* across the Site.

#### 3.3.2 Habitats

The Site is predominantly composed of rank agricultural grassland (GA1) which transitions to dry meadows and grassy verges (GS2) at the margins of the Site. The northern and southern boundaries of the Site have sections of deciduous treelines (WL2). A drainage ditch (FW4) also runs directly adjacent to the treeline on the southern boundary. The eastern and western section of the Site consists of buildings and artificial surfaces (BL3). In the east, this habitat is in the form of a storage yard for the adjacent co-operative and in the west this habitat is represented by the newly constructed access ramp to the Site from the western relief road. Small sections of hedgerow (WL1) occur along the southern boundary. Towards the north-east of the Site, a section of depositing/lowland rivers (FW2) habitat is within the Site boundary. Please refer to the Biodiversity Chapter of the EIAIR accompanying this application for a more detailed description of the habitats within the Site.

### 3.4 Identification of Relevant European Sites

In order to identify the European Sites that potentially lie within the Zone of Influence (ZOI) of the Proposed Development, a Source-Path-Receptor method (S-P-R) was adopted, as described in 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021), a practice note produced by the Office of the Planning Regulator, Dublin. This note was published to provide guidance on screening for appropriate assessment (AA) during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also applicable to the preparation of Appropriate Assessment Screening Reports such as this.

The guidance document published by the Department of Housing, Planning and Local Government (then DEHLG) 'Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities' (2009) recommends an arbitrary distance of 15km as the precautionary ZOI for a plan or project being assessed for likely significant effects on European Sites, stating however that this should be evaluated on a case-by-case basis.

As such, the 15km ZOI is used in this report as an initial starting point for collating European Sites for AA screening. The potential for connectivity with European Sites at distances greater than 15km from the Proposed Development was also considered in this initial assessment. In this case, there is no potential connectivity between the Proposed Development Site and European Sites located at a distance greater than 15km from the Proposed Development based on the S-P-R model.

The methodology used to identify relevant European Sites comprised the following:

- Use of up-to-date GIS spatial datasets for European designated Sites and water catchments – downloaded from the NPWS website ([www.npws.ie](http://www.npws.ie)) and the EPA website ([www.epa.ie](http://www.epa.ie)) to identify European Sites which could potentially be affected by the Proposed Development;
- The catchment data were used to establish or discount potential hydrological connectivity between the Project Boundary and any European Sites.
- All European Sites within the Precautionary zone of influence (within 15km of the Proposed Development Site) were identified and are shown in **Error! Reference source not found.**
- Table 2 provides details of all relevant European Sites as identified in the preceding steps. The potential for pathways between European Sites and the Proposed Development Site was assessed on a case-by-case basis using the Source-Pathway-Receptor framework as per the OPR Practice Note PN01 (March 2021). Those European Sites where a pathway has been identified are highlighted in green. Pathways considered included:
  - a. Direct pathways (e.g., proximity (i.e., location within the European Site), water bodies, air (for both air emissions and noise impacts).
  - b. Indirect pathways (e.g., disruption to migratory paths, 'Sightlines' where noisy or intrusive activities may result in disturbance to shy species).



- The Site synopses and conservation objectives of these Sites, as per the NPWS website ([www.npws.ie](http://www.npws.ie)), were consulted and reviewed at the time of preparing this report.
- There is absolutely no reliance placed in this Appropriate Assessment Screening Report on measures intended to avoid/reduce harmful effects on the European Sites.

The result of this preliminary screening concluded that there is one SAC and one SPA located within the precautionary ZOI of the Proposed Development Site. The distances to each Site listed are taken from the nearest possible point of the Proposed Development Site boundary to the nearest possible point of each European Site.

Potential pathways between the Proposed Development Site and the European Sites within the ZOI were identified (Table 2).

**TABLE 2. EUROPEAN SITES WITHIN THE 15KM PRECAUTIONARY ZONE OF INFLUENCE OF THE PROPOSED DEVELOPMENT AND POTENTIAL PATHWAYS BETWEEN THEM. THOSE EUROPEAN SITES FOR WHICH A S-P-R LINK WAS IDENTIFIED ARE HIGHLIGHTED IN GREEN.**

Site Name & Site Code	Qualifying Interests	Distance to Site	Connections (Source- Pathway- Receptor)
<b>Special Areas of Conservation (SAC)</b>			
<p>Great Islands Channel SAC (001058)</p> <p><a href="https://www.npws.ie/protected-sites/sac/001058">https://www.npws.ie/protected-sites/sac/001058</a></p>	<p><b>Conservation Objectives Version 1.0 (NPWS, 2014a)</b></p> <ul style="list-style-type: none"> <li>- Mudflats and sandflats not covered by seawater at low tide [1140]</li> <li>- Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]</li> </ul>	<p>8.7 km</p>	<p><b>None-</b> The intervening distance between the Site and this SAC as well as the potential for dilution within Cork Harbour is sufficient to exclude the possibility of significant effects arising from the following during the Construction and/or Operational Phase:</p> <ul style="list-style-type: none"> <li>- Surface water run-off/pollution</li> <li>- Emissions of noise, dust and/or vibrations</li> <li>- Increased traffic volumes</li> <li>- Increased lighting emitted from the Site</li> <li>- Increased human presence at the Site</li> </ul>

Site Name & Site Code	Qualifying Interests	Distance to Site	Connections (Source- Pathway- Receptor)
<b>Special Protected Area (SPA)</b>			
<p>Cork Harbour SPA (004030)</p> <p><a href="https://www.npws.ie/protected-sites/spa/004030">https://www.npws.ie/protected-sites/spa/004030</a></p>	<p><b>Conservation Objectives Version 1.0 (NPWS, 2014b)</b></p> <ul style="list-style-type: none"> <li>- Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]</li> <li>- Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]</li> <li>- Cormorant (<i>Phalacrocorax carbo</i>) [A017]</li> <li>- Grey Heron (<i>Ardea cinerea</i>) [A028]</li> <li>- Shelduck (<i>Tadorna tadorna</i>) [A048]</li> <li>- Wigeon (<i>Anas penelope</i>) [A050]</li> <li>- Teal (<i>Anas crecca</i>) [A052]</li> <li>- Pintail (<i>Anas acuta</i>) [A054]</li> <li>- Shoveler (<i>Anas clypeata</i>) [A056]</li> <li>- Red-breasted Merganser (<i>Mergus serrator</i>) [A069]</li> <li>- Oystercatcher (<i>Haematopus ostralegus</i>) [A130]</li> <li>- Golden Plover (<i>Pluvialis apricaria</i>) [A140]</li> <li>- Grey Plover (<i>Pluvialis squatarola</i>) [A141]</li> <li>- Lapwing (<i>Vanellus vanellus</i>) [A142]</li> <li>- Dunlin (<i>Calidris alpina</i>) [A149]</li> <li>- Black-tailed Godwit (<i>Limosa limosa</i>) [A156]</li> <li>- Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]</li> <li>- Curlew (<i>Numenius arquata</i>) [A160]</li> <li>- Redshank (<i>Tringa totanus</i>) [A162]</li> <li>- Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]</li> <li>- Common Gull (<i>Larus canus</i>) [A182]</li> <li>- Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]</li> <li>- Common Tern (<i>Sterna hirundo</i>) [A193]</li> <li>- Wetland and Waterbirds [A999]</li> </ul>	<p>50m</p>	<p><b>Yes</b> – The Proposed Development Site may provide <i>ex-situ</i> foraging habitat (grassland) for SCI bird species associated with Cork Harbour SPA. Therefore, development at the Site may result in the loss of <i>ex-situ</i> foraging habitat for SCI species within this SPA during both the Construction and/or Operational Phases.</p> <p>The Proposed Development itself may also pose a collision risk to SCI species which fly over the Site particularly during the Operational Phase.</p> <p>The Proposed Development may lead to the disturbance and/or displacement of SCI species associated with Cork Harbour SPA due to emissions of environmental nuisances (noise and dust) during the Construction Phase, given the close proximity (~50m) of the Proposed Development to this Site. Increased lighting along the proposed access route to the west of the Site may also lead to disturbance and/or displacement of SCI species during the Construction and/or Operational Phase.</p>

Site Name & Site Code	Qualifying Interests	Distance to Site	Connections (Source- Pathway- Receptor)
			There is a hydrological pathway via surface water discharges to the Owenboy River during both the Construction and Operational Phases which has the potential to negatively impact water quality within this SPA.

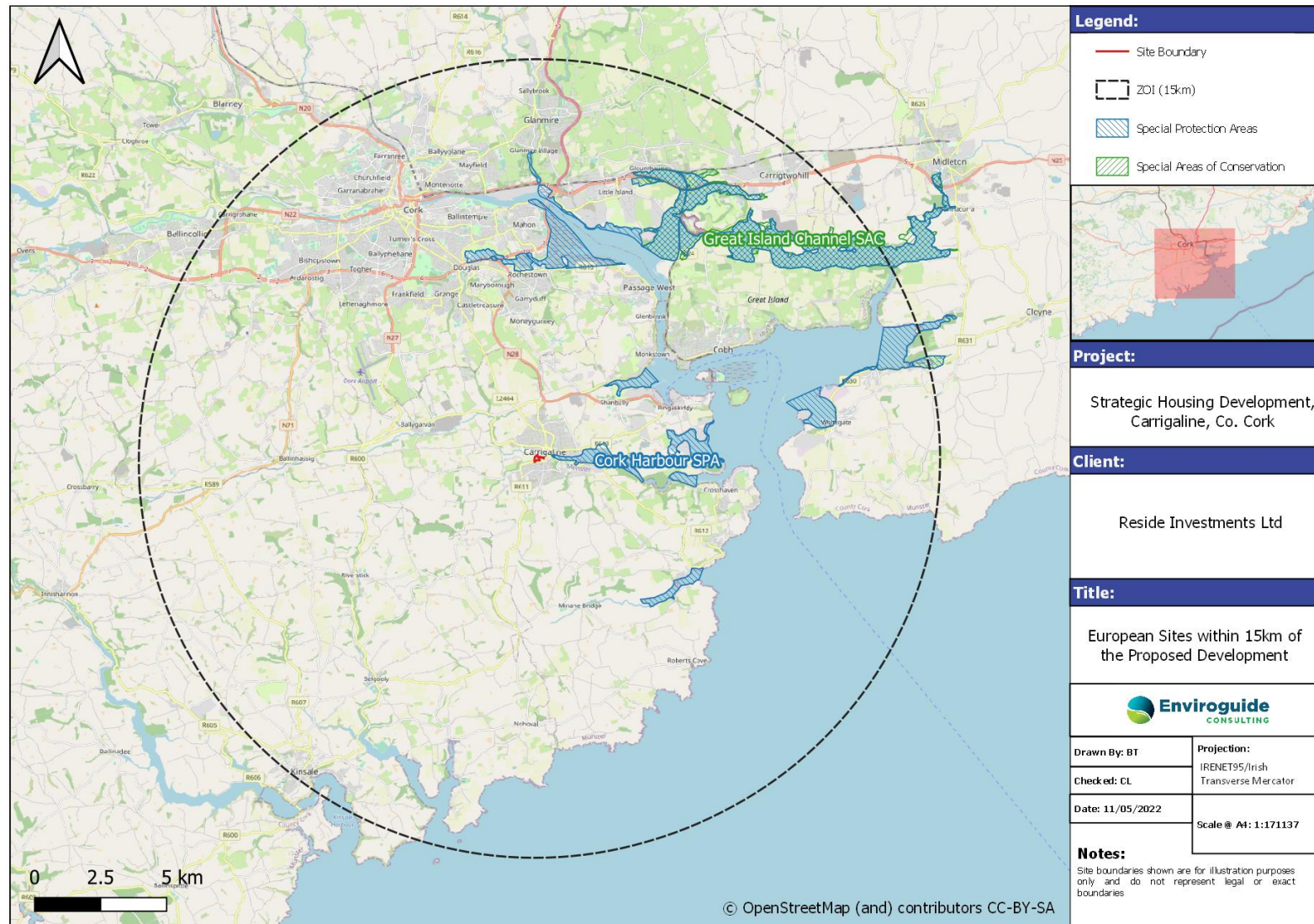


Figure 4. European Sites within the 15km precautionary ZOI of the Proposed Development Site.

### 3.5 Assessment of Likely Significant Effects

European Sites will only be at risk from likely significant effects where the Source-Pathway-Receptor link exists between the Proposed Development and the European Site. As such, the remainder of this AA Screening report will focus on the European Sites for which a S-P-R link was identified, namely:

- Cork Harbour SPA (004030)

#### 3.5.1 Conservation Objectives

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them.

Site Specific Conservation Objectives (SSCO) have been compiled for the European Sites listed above. Site-specific conservation objectives aim to define favourable conservation condition for habitats or species at a Site.

The maintenance of habitats and species within European Sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

### 3.6 Identification and Assessment of Potential Impacts

The assessment framework is taken from the best practice guidelines issued by the European Commission, i.e., "Assessment of plans and projects significantly affecting Natura 2000 Sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC".

The potential for significant effects resulting from the Proposed Development was determined based on a range of indicators, including:

- Habitat loss or alteration;
- Habitat/species fragmentation;

- Disturbance and/or displacement of species;
- Changes in population density; and
- Changes in water quality and resource.

The following elements of the Proposed Development were assessed for their potential for likely significant effects on European Sites.

- **Construction Phase**

- Uncontrolled releases of dust and/or other pollutants to air due to earthworks.
- Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies.
- Surface water run-off containing silt, sediments and/or other pollutants into the local groundwater.
- Waste generation during the Construction Phase comprising soils, construction and demolition wastes.
- Increased noise, dust and/or vibrations as a result of construction activity.
- Increased dust and air emissions from construction traffic.
- Increased lighting in the vicinity as a result of construction activity.
- Loss of *ex-situ* foraging habitat for SCI species associated with European Sites.

- **Operational Phase**

- Surface water drainage from the Site of the Proposed Development.
- Loss of *ex-situ* foraging habitat and potential collision risk for SCI species associated with European Sites.
- Foul water from the Proposed Development leading to increased loading on wastewater treatment plants.
- Increased lighting in the vicinity emitted from the Proposed Development; and
- Increased human presence in the vicinity as a result of the Proposed Development.

### 3.6.1 Habitat Loss and Alteration

The Proposed Development is not located within any European Site and therefore there will be no direct loss or alteration of habitat as a result of the Proposed Development.

The Proposed Development is approximately 50m west of Cork Harbour SPA which supports populations of several SCI bird species (Table 2). Winter bird surveys conducted by Enviroguide Consulting on Site between December 2021 and April 2022 recorded the following SCI species associated with Cork Harbour SPA: Curlew, Cormorant and Grey Heron, Black-headed Gull, Common Gull and Lesser Black-backed Gull. (Table 3). However, all of these species were recorded flying over the Site and with some utilising lands adjacent to it. None of these species were utilising the Site itself as *ex-situ* foraging habitat. None of the SCI species recorded during winter bird surveys were significant in their numbers.

Three Grey Herons and one Cormorant which flew over the Site landed in the riparian vegetation of the Owenboy river directly adjacent to the Site where they were observed foraging. Although a section of the Owenboy river does occur within the Site boundary, this section has vertical gravel riverbanks which are devoid of riparian vegetation. The section of riparian vegetation where Cormorants and Grey Herons were observed foraging is not within the Proposed Site boundary and will not be directly affected during the Proposed Development

works. Curlew which flew over the Site were observed landing and foraging on the grazed agricultural grassland fields to the west of the Proposed Development Site. As the existing baseline conditions at the Site are not similar to those of grazed agricultural grassland, the Proposed Development site is not considered to be suitable *ex-situ* foraging habitat for Curlew.

Black-headed Gull, Common Gulls and Lesser Black-backed Gulls were recorded as flyovers only and not associating with the Site.

Therefore, the loss of habitat at the Proposed Development Site will not result in the loss of *ex-situ* foraging habitat for any SCI species associated within Cork Harbour SPA.

### **3.6.2 Habitat / Species Fragmentation**

Habitat fragmentation has been defined as the 'reduction and isolation of patches of natural environment' (Hall et al., 1997 cited in Franklin et al., 2002) usually due to an external disturbance such that an alteration of the spatial composition of a habitat occurs that alters the habitat and 'create[s] isolated or tenuously connected patches of the original habitat' (Wiens, 1989 cited in Franklin et al., 2002). This results in spatial separation of habitat units which had previously been in a state of greater continuity.

As there will be no direct habitat loss within any European Sites, no habitat fragmentation will arise as a result of the Proposed Development.

### **3.6.3 Changes in Water Quality and Resource**

#### **3.6.3.1 Surface water**

The Proposed Development will be served by the existing surface water sewer network via a new connection to an existing 225mm surface water drain which runs north from Kilmoney road through the Site and discharges into the Owenboy River. Therefore, there is a hydrological connection between the Site of the Proposed Development and Cork Harbour SPA. In the absence of standard, appropriate mitigation measures, there is potential for sediments/pollutants from the Site to enter the above storm water drain, the Owenboy River and ultimately Cork Harbour via surface water run-off during the Construction Phase of the Proposed Development. This could result in impacts on water quality in Cork Harbour SPA. In addition, given the slope of the Site and its proximity to the Owenboy River, there is potential for direct surface water run-off from the Site during periods of heavy rainfall.

#### **3.6.3.2 SuDS Measures included in Project Design**

A suite of SuDS measures have been incorporated into the project design as per the objectives of Cork County Development Plan 2022-2028 (Objective PL 3-1). However, whether these are considered as mitigation when screening for Appropriate Assessment is yet to be unequivocally confirmed by case law. Therefore, in the absence of any measures designed to treat surface water generated at the Site i.e., SuDS, the potential for contaminated surface waters from the Site to be discharged to the Owenboy represents a potential source of significant effects to Cork Harbour SPA in terms of the Key indicator 'Changes in Water Quality and/or Resource' and warrants further assessment.

#### **3.6.3.3 Foul water from Cork Lower Harbour WwTP**

A newly constructed pumping station on Site will pump foul water to an existing sewer on Kilmoney Road where it will flow to Cork Lower Harbour wastewater treatment plant (WwTP). An Irish Water confirmation of feasibility letter for the Proposed Development has been



submitted as part of this application (Irish Water, 2022). The increase of a maximum load of 616 Population Equivalent (PE) at the facility as a result of the Proposed Development, assuming each PE unit was not previously supported by the WwTP, is considered to be an insignificant increase in terms of the overall scale of the facility. The maximum capacity of the Cork Lower Harbour WwTP is 65,000 PE. According to the most recent Annual Environmental Report (AER) for this WwTP, the remaining organic capacity (PE) at this plant is 34203 people. Therefore, the potential maximum increased load of 616 PE does not have the capacity to alter the effluent released from the WwTP to such an extent as to result in likely significant effects on Cork Harbour SPA.

#### **3.6.4 Disturbance and / or Displacement of Species**

The Proposed Development is located approximately 50m west of the Owenboy estuary which forms part of Cork Harbour SPA. The most recent I-WeBS data (2015-2020)<sup>1</sup> for the Owenboy estuary highlights the presence of several SCI species within the estuary including Little Grebe, Cormorant, Grey Heron, Shelduck, Teal, Shoveler, Oystercatcher, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull and Lesser Black-backed Gull. Therefore, the Proposed Development may cause disturbance and/or displacement of SCI species from Cork Harbour SPA due to disturbances from environmental nuisances such as noise and dust during the Construction Phase. In addition, increased lighting during the Construction and/or Operational Phase may also lead to the disturbance and/or displacement of species associated with this Site, particularly from proposed access route to Carrigaline main street which is 50m west of Cork Harbour SPA.

#### **3.6.5 Changes in Population Density**

As no proposed works occur within any European Site there will be no direct reduction in SCI species population densities due to the proposed works.

##### **3.6.5.1 Bird collisions**

The vulnerability of a bird species to collision is a combination of the susceptibility of that species to collision and exposure to collision risk (Prinsen et al., 2011). The biological attributes of a bird which influence collision risk include morphology, vision, age, health/condition, behaviour and their distribution and population density (EirGrid, 2016). The environmental exposure to collision risk can be influenced by the surrounding topography, weather, location of foraging, roosting, nesting and migratory habitats in relation to a proposed structure and the design of the structure itself (Prinsen et al., 2011; EirGrid, 2016).

During vantage point surveys conducted by Enviroguide Consulting between December 2021 and April 2022, SCI species Curlew, Cormorant and Grey Heron were recorded flying over the Site (Table 3). Several Black-headed Gull, Common Gull and Lesser Black-backed Gull were also observed soaring over the Site during these surveys, however, these species are not considered to be at risk of collision due to their visual acuity and high manoeuvrability in flight (EirGrid, 2016.) Therefore, they not considered further in this report. The flight heights of Grey Heron and Cormorant ranged from 10-100m above ground level which is within the collision risk zone for the Proposed Development (6-7 storeys or 19-23 meters). Curlew flight heights

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<sup>1</sup> <https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/i-webs-data-requests/>

were between 40-100m above ground level and therefore were not within the collision risk zone of the Proposed Development.

**Table 3: Results of winter bird surveys carried out on Site. Peak counts of relevant SCI species - Curlew (CU), Grey Heron (H.) and Cormorant (CA) - are shown. Peak counts of SCI gull species such as Black-headed gull (BH), Common gull (CM) and Lesser Black-Backed gull (LB) over the Site peak were not taken but were recorded as “frequent” flyovers. FL refers to the BTO activity code for flying.**

Month	Date	Peak Count CU	Peak Count H.	Peak Count CA	Gull species (BH, CM, LB)	Activity (BTO Code)	Flight Height	Additional Notes
December	29/12/21	0	1	1	Frequent sightings of one or two individuals at high altitude	FL	40-50m	-
January	17/01/22	8	1	0	Frequent sightings of one or two individuals at high altitude	FL	Curlew 40-100m Grey Heron: 5-10m	Heron landed in riparian vegetation adjacent to Site
January	27/01/22	12	1	0	Frequent sightings of one or two individuals at high altitude	FL	Curlew 40m Grey Heron: 25m	-
February	08/02/22	0	1	0	Frequent sightings of one or two individuals at high altitude	FL	15-30m	Heron landed in riparian vegetation adjacent to Site
February	24/02/22	0	1	0	Frequent sightings of one or two individuals at high altitude	FL	30m	-
March	23/03/22	0	1	4	Frequent sightings of one or two individuals at high altitude	FL	Cormorant: 10-35m Grey Heron 10m	Cormorant landed in riparian vegetation adjacent to Site.
March	29/03/22	0	2	2	Frequent sightings	FL	Grey Heron 5m	Heron and Cormorant

Month	Date	Peak Count CU	Peak Count H.	Peak Count CA	Gull species (BH, CM, LB)	Activity (BTO Code)	Flight Height	Additional Notes
					of one or two individuals at high altitude		Cormorant 20m	landed in riparian vegetation adjacent to Site.
April	07/04/22	0	1	0	Frequent sightings of one or two individuals at high altitude	FL	15-20m	-

**Collision avoidance capabilities of SCI species**

In general, larger bird species such as swans and geese are more susceptible to collisions with built infrastructure (EirGrid, 2016). A recent study on bird collisions with power grid infrastructure in Ireland highlighted that Curlew, Cormorant and Grey Heron show a high level of collision avoidance with no collisions or near collisions with pylons or powerlines recorded for these particular species (EirGrid, 2016). Given that the proposed buildings are large conspicuous structures, it is highly likely that Cormorant, Grey Heron and Curlew will have similar avoidance rates to the Proposed Development. During flightline surveys conducted by Enviroguide Consulting, all Curlew flightlines were recorded to the south of the Site where the proposed buildings will be built (Figure 5). However, Curlew were consistently recorded flying above the collision risk zone. Therefore, the proposed buildings do not represent a significant collision risk for Curlew. In addition, there was a tendency for Grey Herons to fly along the route of the Owenboy river to the north of the Site while commuting inland (Figure 7). As the proposed buildings will be constructed to the south of the Site, they will not present a collision risk to Grey Heron using this commuting corridor.

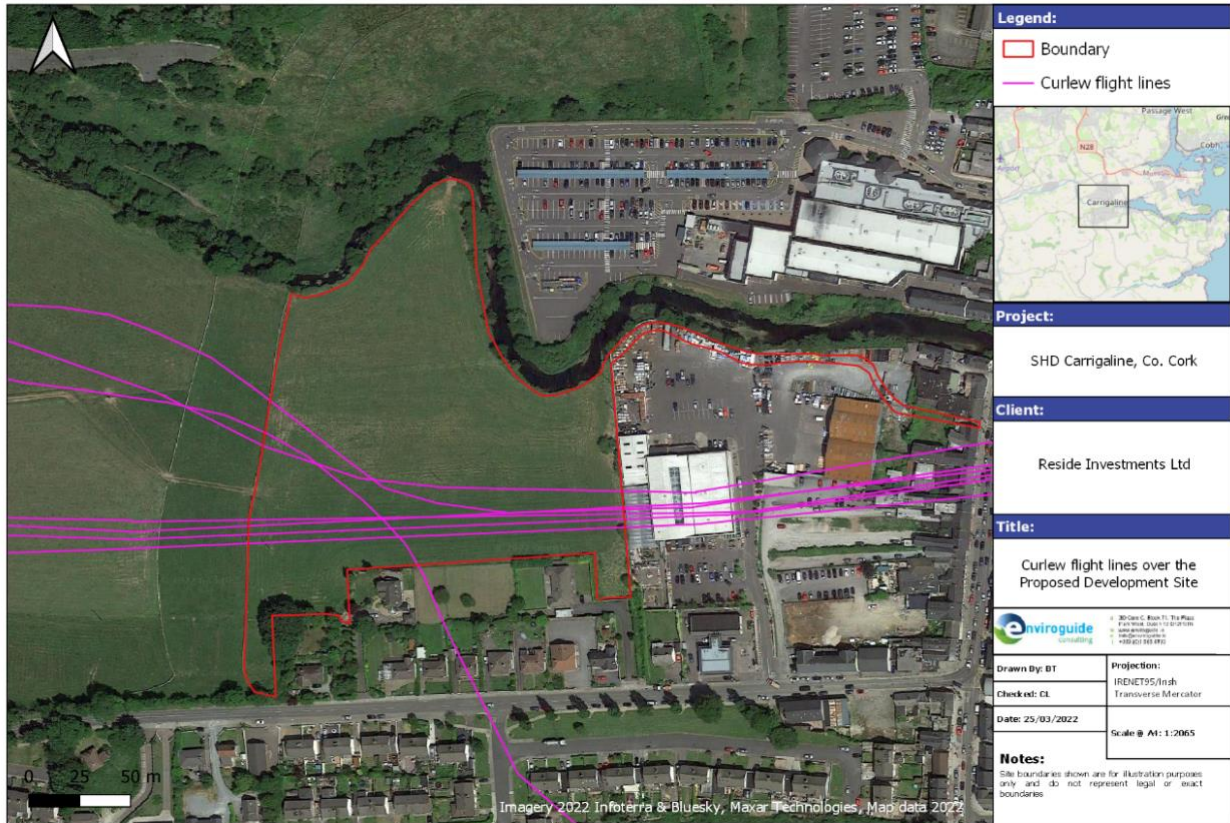


Figure 5. Curlew flightlines over the Proposed Development Site.



Figure 6. Cormorant flightlines over the Proposed Development Site.



**Figure 7. Grey Heron flightlines over the Proposed Development Site.**

### **Building morphology**

The building envelope of the Proposed Development consists of a diverse range of façades which vary in terms of material composition, uniformity and size. In addition, the individual buildings vary in height from 6-7 storeys and include balconies and overhangs as part of the overall design (Figure 8). These architectural design features provide important visible signal as to the presence and extent of the proposed structures to any commuting/foraging bird species should they be in the vicinity of the Site and help to break up reflective surfaces which may disorientate birds (City of Toronto, 2016). Given that the likelihood of collision is already low due to the avoidance capabilities of Curlew, Cormorant and Grey Heron, the overall heterogeneity and design features of the building envelope will further reduce the risk of collision. The above building features are not considered to represent specific mitigation measures to prevent collisions, however, they will contribute to the overall effect in this regard. As such, the risk of collision is deemed negligible.

Therefore, considering the above points, it is not considered that the Proposed Development will result in significant changes in the population densities of any SCI species associated with Cork Harbour SPA.



**Figure 8. Renders of the Proposed Development highlighting the variation in building façade design.**

### 3.7 Potential for In-combination Effects

#### 3.7.1 Existing Planning Permissions

There are several existing planning permissions on record in the area ranging from small-scale extensions and alterations to existing residential properties to some larger-scale developments. The larger-scale developments identified within 500m of the Proposed Development are identified below and the potential for possible in combination effects with the Proposed Development are assessed.

**Table 4: Assessment of potential in-combination effects of the Proposed Development and other developments pending or granted permission in the last 5 years (2017-2022) within 500m of the Site.**

Planning Application	Development Description	Distance to Proposed Development	Potential for in-combination effects?
<p><b>Athena Private Assets Ltd</b></p> <p>Planning Application Reference:196065</p> <p>Conditional (28/02/2020)</p>	<p>Demolition of the existing derelict dwelling and the construction of 38 no. residential units comprising of 10 no. 1 bed apartments, 2 no. 2 bed apartments and 26 no. 3 bed duplex, terraced and semi-detached housing units in scheme. Vehicular and pedestrian access to the residential scheme is from Church Hill at the east of the site. The development also includes, associated car parking, drainage, landscaping and boundary treatments, surface treatments and all ancillary site development works.</p>	<p>260m south</p>	<p><b>Yes:</b> No Appropriate Assessment screening report or Natura Impact Statement was submitted for this Development. However as noted in the Planners report dated 02/03/2020, the Ecology Office Planner expressed <i>“satisfaction that the proposed development will not have significant effects on the qualifying interest of the Cork Harbour Special Protection Area. Surface water proposals are not considered to pose a risk of having significant effects on the Cork Harbour SPA. In accordance with Section 177U of the Planning and Development Act 2000 (as amended), it is concluded beyond reasonable scientific doubt that the proposed works, individually or in combination with other plans / projects are not likely to have a significant effect a European / Natura 2000 Site and a Stage 2 Appropriate Assessment under Section 177V is not required”.</i></p>

			<p>However, surface waters from this development are connected to an existing surface water sewer (SWGM1014963) which discharges into the Owenboy estuary which forms part of Cork Harbour SPA. Therefore, there is potential for in-combination effects between this Development and the Proposed Development due to surface water run-off containing sediments or pollutants during both the Construction and/or Operational Phases.</p>
<p><b>Pilton Properties Ltd</b>  Planning Application Reference:194642  Conditional (17/07/2019)</p>	<p>Construction of a wastewater pumping station and foul rising main including emergency storage tank, welfare kiosk, control kiosk, services, lighting and all ancillary site works. A Natura Impact Statement will be submitted to the Planning Authority with the application</p>	<p>Within Site Boundary</p>	<p><b>No:</b> A Natura Impact Statement was submitted with this application outlining several measures to mitigate against the emissions of environmental nuisances such as noise and dust as well as surface water pollution on European Sites within the vicinity. The construction works associated with this project are largely complete and will not overlap with works for the Proposed Development. Therefore, there is no potential for in-combination effects.</p>
<p><b>Ruden Homes Ltd</b>  Planning Application Reference:214818  Extension of duration (28/04/2021)</p>	<p>A residential development consisting of 72 no. two-storey houses and all ancillary car parking, landscaping and site development works. The proposed site development works include the construction of a pumping station, underground tank, welfare kiosk/building, control kiosk/building and fencing. Access to the proposed development will be via Ballea Roundabout and the existing road permitted</p>	<p>378m north-west</p>	<p><b>No:</b> An Appropriate Assessment Screening report was submitted as part of this application which concluded that the construction and operational phase of this development did not have the potential to result in any likely significant effects on any European Site. Due to the lack of a source-receptor-pathway, there will be no in-combination effects between this development and the Proposed Development on European Sites.</p>



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On examination of the above, it is considered that there is potential for the Proposed Development to act in-combination with other developments in the vicinity that may cause likely significant effects on Cork Harbour SPA. In particular, surface water run-off from the above projects and the Proposed Development which may contain silt, sediments or other pollutants have the potential to reduce water quality in Cork harbour SPA which could have negative effects on SCI species.

### 3.7.2 Relevant Policies and Plans

The following policies and plans were reviewed and considered for possible in-combination effects with the Proposed Development.

- Cork County Development Plan (2022-2028)
- Cork Biodiversity Action Plan (2009-Present)
- Biodiversity Action Plan for Carrigaline Tidy Towns (2019-2023)

The Cork County Development Plan 2022-2028 has directly addressed the protection of European Sites through specific Objectives and policies (MCI 7-5, MCI 7-6, RP 5-19, TO 10-2, EC 8-13, TO 10-7 and TO 10-9). The Cork County Biodiversity Action (2009-Present) and the Biodiversity Action Plan for Carrigaline (2019-2023) are set out to protect and improve biodiversity, and as such will not result in negative in-combination effects with the Proposed Development.

On examination of the above it is considered that there are no means for the Proposed Development to act in-combination with any policies or plans that would cause any likely significant effects on any European Sites.

**Table 5. Summary of impact assessment on European Sites as a result of the Proposed Development.**

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or Resource	In-combination effects	Stage 2 AA Required
<b>SAC</b>							
Great Islands Channel SAC (001058)	No	No	No	No	No	No	No
<b>SPA</b>							
Cork Harbour SPA (004030)	No	No	Potential effects	No	Potential effects	No	<b>Yes</b>

#### **4 APPROPRIATE ASSESSMENT SCREENING CONCLUSION**

The Proposed Strategic Housing Development at Carrigaline, Co. Cork, has been assessed taking into account:

- the nature, size and location of the Proposed works and possible impacts arising from the construction works.
- the qualifying interests and conservation objectives of the European Sites
- the potential for in-combination effects arising from other plans and projects.

In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of this report that, on the basis of objective information; the possibility **may be excluded** that the Proposed Development will have a significant effect on the European Site listed below:

- Great Islands Channel SAC (001058)

However, upon examination of the relevant information including in particular the nature of the Proposed Development and the likelihood of significant effects on European Sites, the possibility **may not be excluded** that the Proposed Development will have a likely significant effect on the European Site listed below:

- Cork Harbour SPA (004030)

Accordingly, a Natura Impact Statement has been prepared for the Proposed Development and is included under separate cover.

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## APPENDIX I - EUROPEAN SITE SYNOPSES

Brief descriptions of European Sites which are within the 15km radius of the Proposed Development are presented below with relevant excerpts taken from their respective NPWS Site synopses and Natura 2000 forms.

### **Great Islands and Channel SAC (001058)**

*This Site comprises the north-eastern part of Cork Harbour. It includes all of the Great Island Channel, the intertidal areas between Fota Island and Little Island, and also the estuary of the Dungourney and Owennacurra Rivers as far as Midleton. The North Channel is on average 1 km wide but extends for about 9 km from east to west. The area is well sheltered and the intertidal sediments are predominantly fine muds. In addition to the estuarine habitats, the site includes some wet grassland areas which are used by roosting birds, as well as some broad-leaved woodland at Fota Island. Compared to the rest of Cork Harbour, the Great Island Channel is relatively undisturbed, with aquaculture the main activity.*

*The Site is of ecological importance for its examples of intertidal mud and sand flats and Atlantic salt meadows of the estuarine type. Both habitats are fairly extensive in area and of moderate to good quality. The Site has high ornithological importance, supporting regularly c.50% of the wintering waterfowl of Cork Harbour. Significant proportions of the internationally important populations of *Limosa limosa* and *Tringa totanus* which winter in Cork Harbour utilise the Site and it supports nationally important populations of a further 12 species, including *Pluvialis apricaria* and *Limosa lapponica*, both listed on Annex I of the EU Birds Directive.*

### **Cork Harbour SPA (004030)**

*Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The Site comprises the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy Estuary, Whitegate Bay and the Rostellan inlet. Owing to the sheltered conditions, the intertidal flats are often muddy in character. Salt marshes are scattered through the Site and these provide high tide roosts for the birds. Otherwise, birds roost on stony shorelines and in some areas fields adjacent to the shore. Some shallow bay water is included in the Site. Cork Harbour is adjacent to a major urban centre and a major industrial centre.*

*Cork Harbour is an internationally important wetland Site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. It supports an internationally important population of *Tringa totanus*. A further 15 species have populations of national importance, with particularly notable numbers of *Tadorna tadorna* (9.6% of national total), *Anas clypeata* (4.5% of total), *Anas acuta* (4.2% of total) and *Phalacrocorax carbo* (4.1% of total) occurring. It has regionally important populations of *Pluvialis apricaria* and *Limosa lapponica*. Passage waders are regular, including *Philomachus pugnax* and *Tringa erythropus*. It is an important site for gulls in winter and autumn, especially *Larus canus* and *Larus fuscus*. The Site provides both feeding and roosting areas for the waterfowl species. The quality of most of the estuarine habitats is good. The wintering birds have been well-monitored since the 1970s. The Site has a breeding colony of *Sterna hirundo* which is of national importance. The colony is monitored annually and the chicks ringed.*