AA Screening - Proposed development of a site at Carrigaline Road/Churchyard Lane, Douglas, Cork.



Limosa Environmental
ecological & environmental consultancy

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Limosa Environmental (2025) AA Screening – proposed development of a site at Carrigaline Road/Churchyard Lane, Douglas, Cork. January 2025.

Front cover photo: Speckled Wood (Parage aegeria) Stock photo (Limosa Environmental).

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1. Introduction and background

Limosa Environmental was commissioned to provide information to support Appropriate Assessment Screening of a proposed project at Carrigaline Road and Churchyard Lane, Douglas, Cork (Figure 1).

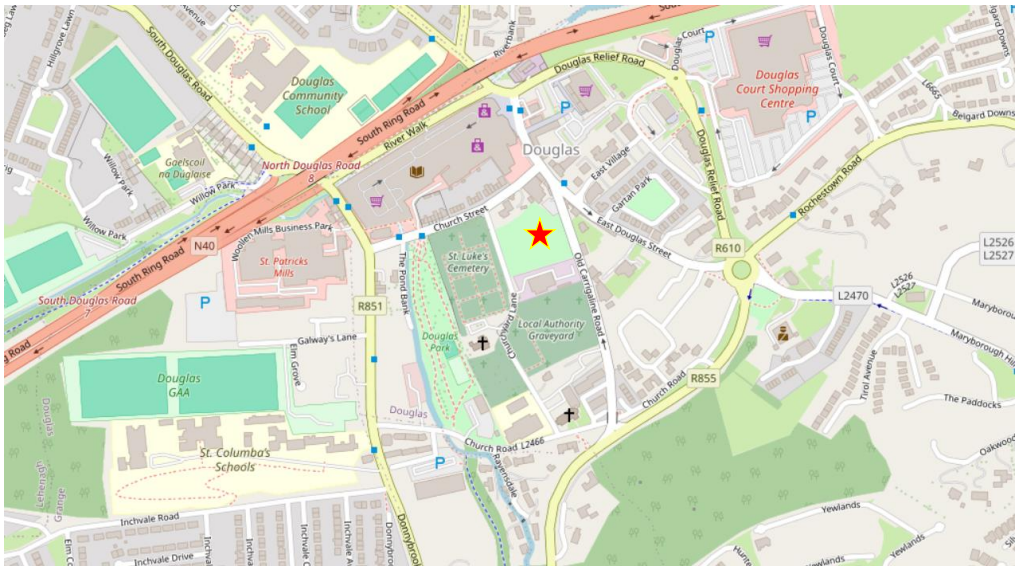


Figure 1. Location of the proposed development site marked by a red star (Image: OpenStreetMaps).

The obligation to undertake Appropriate Assessment arises from Articles 6 (3) and (4) of European Union (EU) Council Directive 92/43/EEC (Habitats Directive) and transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations S.I. No 477 of 2011; as amended by European Communities (Birds and Natural Habitats) Regulations 2011-2021. Screening is the first stage of an Appropriate Assessment (AA) and aims to establish whether a proposed plan or project (in this case a project) either alone or in combination with other plans or projects, could have significant negative effects on a Natura 2000 site (also known as a European site) in view of the site's conservation objectives. At Stage 2 (Appropriate Assessment), the impact of a project or plan alone and in combination with other projects or plans on the integrity of the Natura 2000 site is considered with respect to the conservation objectives of the site and to its structure and function (DoEHLG, 2009).

Natura 2000 sites ('European sites') are Special Areas of Conservation (SACs) designated under the EU Habitats Directive,[1] and Special Protection Areas (SPAs), designated under the EU Birds Directive.[2] As signatories to these Directives, Ireland like other EU Member states, has designated prime areas of ecological importance as SACs and SPAs and these are part of a network of sites of 'community importance' for biodiversity across the EU called the 'Natura 2000' network.

The proposed project lies close to the Douglas Estuary, part of Cork Harbour which has two European designations as follows (i) Cork Harbour Special Protection Area (Site Code 4030) and (ii) Great Island Channel Special Area of Conservation (SAC Site Code 1058). On account of the proposed project's location in relation to Natura 2000 sites, and in accordance with legislative requirements (Articles 6 (3) and (4) of European Union (EU) Council Directive 92/43/EEC on the conservation of natural habitats

[1] Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna, as amended by Council Directive 97/62/EC. The Directive was transposed into Irish law by the European Communities (Natural Habitats) Regulations 2011, amended and later consolidated by the European Communities (Birds and Natural Habitats) Regulations 2011 – 2021.
[2] Directive 2009/147/EC (Birds Directive) on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended).

and of wild fauna and flora, a *Habitats Directive Screening Statement* should be prepared to assess the potential for impacts upon the Natura 2000 sites. Where the potential for significant negative impacts cannot be screened out, the assessment should pass to Stage 2: Natura Impact Assessment.

2. Methodology

2.1 Appropriate Assessment methodology

There are 4 stages in an Appropriate Assessment as outlined in the European Commission Guidance document (EU Commission, 2001) (Table 1, Figure 1). The following is a brief summary of these steps.

Stage 1 - Screening: This stage examines the likely effects of a project/plan either alone or in combination with other projects/plan upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant.

Table 1. Steps for the undertaking of AA Screening

Step One	*Determination of whether the plan or project is directly connected with the necessary management of the Natura 2000 site.*
Step Two	*Description of the proposed project/plan and the description of other plans/projects that in combination have the potential to have significant effects on a Natura 2000 site.*
Step Three	*Characteristics of the site. Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives. Identification of the potential effects upon a Natura 2000 site and characterisation of the site as a whole to identify where impacts are most likely to fall.*
Step Four	*Assessment of the significance of effects on the Natura 2000 site.* *If the effects are deemed to be significant then the process must pass to Stage 2 – Appropriate Assessment.*

Stage 2 - Appropriate Assessment: In this stage, the impact of the project on the integrity of the Natura 2000 site is considered with respect to the conservation objectives in place for site.
Stage 3 - Assessment of Alternative Solutions: Should the Appropriate Assessment determine that adverse impacts are likely upon a Natura 2000 site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts.
In the absence of any reasonable alternatives for a project/plan that would be less damaging to the integrity of a Natura 2000 site, it is then necessary to proceed to Stage 4.
Stage 4 - Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the Natura site will be necessary.

The statutory agency responsible for designated areas in Ireland is the National Parks & Wildlife Service of the Department of Housing, Local Government and Heritage.

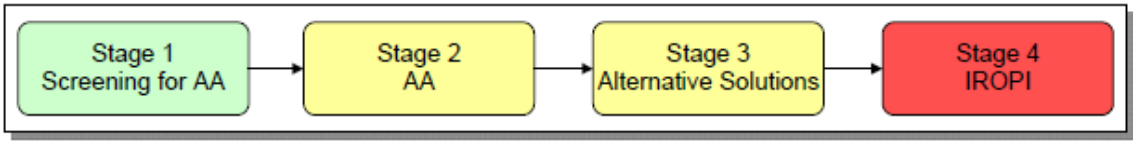


Figure 2. Summary of AA process (Source: DoEHLG, 2009).

2.2 Assessment methodology

- **Identification of Natura 2000 sites**

The proximity of proposed development sites to Natura 2000 sites is of importance when identifying potential impacts. The zone of influence (ZoI) i.e. the area over which impacts can occur, varies from project to project based on a range of factors including development type, scale, size and location. Irish guidance (DoEHLG, 2009) states '*For projects, the distance could be much less than 15 km, and in some cases less than 100 m, 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*.' The ZoI is identified using the Source-Pathway-Receptor model (S-P-R model), where:

- A 'source' is defined as the individual element of the project that has the potential to impact on a European site, its qualifying features, and its conservation objectives,
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor; and
- A 'receptor' is defined as the Special Conservation Interest (SCI) of a SPA or a Qualifying Interest (QI) of a SAC for which conservation objectives have been set for the European site(s) being assessed.

- **Desk top Study**

The study included a review of published literature pertaining to the ecology of the focus study area. The site and surrounding areas were investigated and viewed using Google Earth, Google maps[3] and Bing maps.[4] Sites designated for nature conservation at both national and international level were identified within a 15-km radius of the site. EPA mapping was used to identify the main inland surface waters (e.g. rivers, streams, canals, lakes and reservoirs) within the wider study area. The National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) online databases were reviewed concerning sites, habitats and ecological features of interest within the site and wider study area.

- **Site surveys**

Standard ecological surveys for ecological impact assessment were undertaken during May and July 2024. These included surveys for habitats, breeding birds and mammals (refer to Limosa Environmental, 2025).

- **Reporting**

Ecological Impact Assessment was carried out following the methodology detailed in Appendix 1 and aided using the following standard texts, while impact terminology follows EPA (2022). The assessment was undertaken with regard to the following documents:

[3] https://www.google.com/maps
[4] https://www.bing.com/maps/

- Assessment of plans and projects significantly in relation to Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EU Commission, Brussels (2021),
- Appropriate Assessment of plans and projects in Ireland: Guidance for planning authorities (DoEHLG, 2009),
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (Commission Notice C (2018) 7621 final Brussels 21.11.2018),
- Appropriate Assessment Screening for Development Management (Office of the Planning Regulator, 2021),
- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2022),
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (Chartered Institute of Ecology and Environmental Assessment (CIEEM, 2018).

Where mentioned in the report, habitat classification follows '*A Guide to Habitats within Ireland*' (Fossitt, 2000). Plant nomenclature follows Stroh et al. (2023). A statement of competency for the author of this report is provided in Appendix 3.

3.0 Project details

3.1. Site location

The proposed development site lies within Douglas Village, Cork at Irish Grid reference: W 70003 69409 (Figure 3). The site is located to the south-east of Douglas Village shopping centre and just off East Douglas Street on the Carrigaline Road. The site is bordered by the Carrigaline Road to the east, Churchyard Lane to the west, a Telephone Exchange to the south, and a residential dwelling alongside a restaurant and bar to the north. The site is surrounded by existing trees and stone walls along its eastern and western edges.

The site is largely greenfield in nature but to facilitate development some works will occur in lands under ownership of Cork City Council (orange shaded areas in Figure 4; please refer to planning drawings for more clarity). The site area (red line boundary in Figure 4) is 1.04 ha.

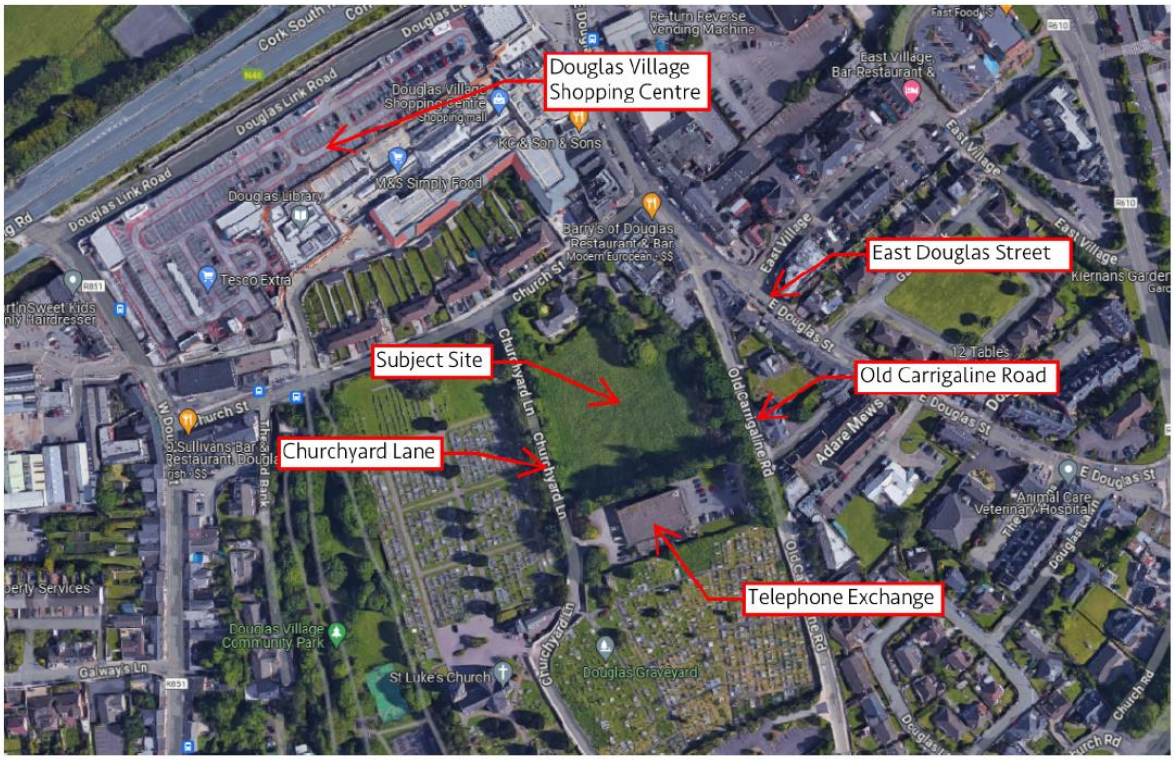


Figure 3. Location of the proposed development site marked by a yellow star (Image: DOSA, 2024a/Google maps).

3.2. Project description

The planning application is described as follows:

Permission for the following Large-Scale Residential Development (LRD) located at Carrigaline Road and Churchyard Lane, Douglas, Cork, comprising of the construction of 124 no. residential apartments (consisting of a mix of 1, 2 and 3 bed units), 1 no. cafe unit and 2 no. office units, in a development ranging in height from 1 to 5 storeys and all associated site development works including footpaths, car and bicycle parking, drainage, bicycle and bin stores, lighting, fencing, landscaping/amenity areas, ESB substation/switchroom and plant room. Site development works include 2 no. new uncontrolled pedestrian crossings and footpath improvements on Churchyard Lane which requires the removal of 6 no. existing on-street car parking spaces. The proposed development works include a connection and construction of a new storm water and foul sewer along Carrigaline Road. Access to the site will be via a new vehicle access point and a new pedestrian connection from Carrigaline Road and 2 new pedestrian connections onto Churchyard Lane. The new vehicular access requires the removal of 4 no. existing car parking spaces.

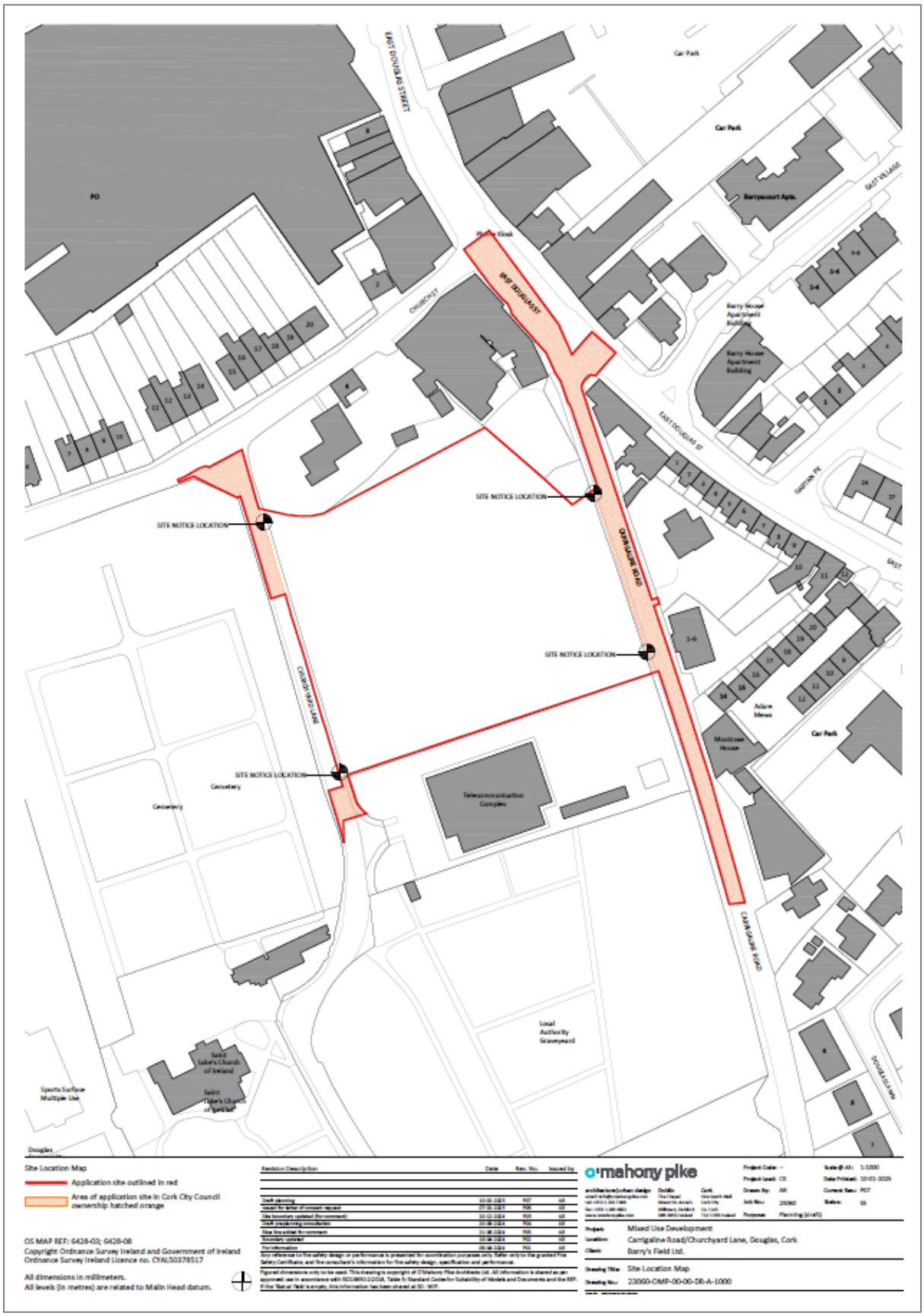


Figure 4. Site location (Source: O' Mahony Pike).



Figure 5. Proposed site layout plan (Source: O' Mahony Pike).

3.3 Project details

The proposed development entails the construction of 124 residential units, providing a mix of one, two and three bed units in two (2 no.) blocks ranging from one to five storeys. Additionally, the development includes plans for a café unit and two office units at ground level, and all associated site development including footpaths, car and bicycle parking, drainage, bicycle and bin stores, lighting, landscaping/amenity areas, ESB substation and switchroom, and a plant room at ground floor level (Figure 5).

The proposed development necessitates the installation of approximately 90 meters of new foul sewer pipeline, connecting to an existing point located to the southeast of the site on the Carrigaline Road. Additionally, the project will involve the construction of 136 meters of storm sewer infrastructure along the Carrigaline Road and East Douglas Street, leading to a connection point at the junction of Church Street and East Douglas Street, situated to the north of the site. Furthermore, the development will require the replacement of 54 meters of water main along the Carrigaline Road, extending to the intersection with East Douglas Street. A new vehicular access route will be created on Carrigaline Road, which will include two uncontrolled crossings and require the removal of six existing car parking spaces. These works will be completed as part of this proposed development. The Developer will seek a letter of consent from Cork City Council to undertake the works as part of the LRD proposal.

Surface water management

The proposed storm water drainage system has been designed to cater for all surface water runoff from all hard surfaces within the proposed development including roadways, roofs, parking areas etc (DOSA, 2025a).

A surface water management strategy has been prepared for the proposed development (DOSA, 2025b). The completed development site will be a mix of soft landscaping and hard paving or roofing. The existing topography is a single catchment. There will be one (1 no.) surface water discharge points to service the developed site and it will discharge to the stormwater network at the junction between East Douglas Street and Church Street.

The diversion of runoff from the catchment will be offset by the use of infiltrating-type SuDS infrastructure. Surface water runoff generated from the proposed residential development will be conveyed through a proposed surface water network including SuDS and attenuation/management on site prior to final discharge at Qbar greenfield run-off rates. The existing stormwater network at the junction between East Douglas Street and Church Street has been chosen as the suitable surface water discharge point for the proposed development (DOSA, 2025b).

Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control devices (Hydrobrakes or equivalent) and associated attenuation area. Surface water discharge will also pass through a full retention fuel / oil separators (sized in accordance with permitted discharge from the site). The storm sewer network was designed using Autodesk InfoDrainage modelling software. Outputs from the storm sewer design can be found in the Appendices of the Infrastructure Report (DOSA, 2025a).

All flow velocities within the network fall within the limits of 0.75 and 3m/sec as set out in "Recommendations for Site Development Works" as published by the Department of Environment. The storm water network and detention basin are designed to accommodate the 100-year return period plus an additional 20% to account for the effects of climate change (DOSA, 2025b).

The following SuDS features will be implemented as part of the design: filter drains (to be located along the proposed internal parking and pathways and will allow groundwater to recharge to its natural state), bio-retention systems (to be located in areas of open green space), and attenuation tanks. It is proposed to provide a petrol interceptor upstream of the attenuation area to ensure that any remaining hydrocarbons or pollutants within the runoff are treated prior to outfall to the drainage network. It is proposed to provide a Kingspan Bypass Separator Types or similar approved (DOSA, 2025b). The proposed petrol interceptor also includes a silt storage capacity that will allow silt to be collected in the interceptor prior to discharge to the proposed attenuation tanks. This silt build-up can then be removed from the tanks (DOSA, 2025a).

Foul water management

Uisce Éireann have confirmed that, subject to a valid connection agreement being put in place, the proposed development can connect to the existing Uisce Éireann network. Following, consultation with Cork City Council & Uisce Eireann the discharge location has been agreed on the Carrigaline Road. In order to facilitate the proposed connection, the Uisce Éireann sewer network will have to be extended by approximately 80 m. All works will be in accordance with Uisce Éireann specifications and requirements. All works will be in accordance with Uisce Éireann Code of Practice for Wastewater Supply & the Wastewater Infrastructure Standard Details Document Number: IW-CDS-5030-01.
Please refer to Drawing 7114-0020-E (Figure 6).

Water supply

As with the drainage network, a Pre-Connection Enquiry was submitted to Uisce Éireann under Reference No. CDS24009261. This confirmed that, subject to a valid connection agreement being put in place, the proposed connection to the Uisce Éireann network could be facilitated. Following, consultation with Uisce Éireann a revised connection location was agreed at the junction of Carrigaline Road and East Douglas Street, see Figure 7 below.

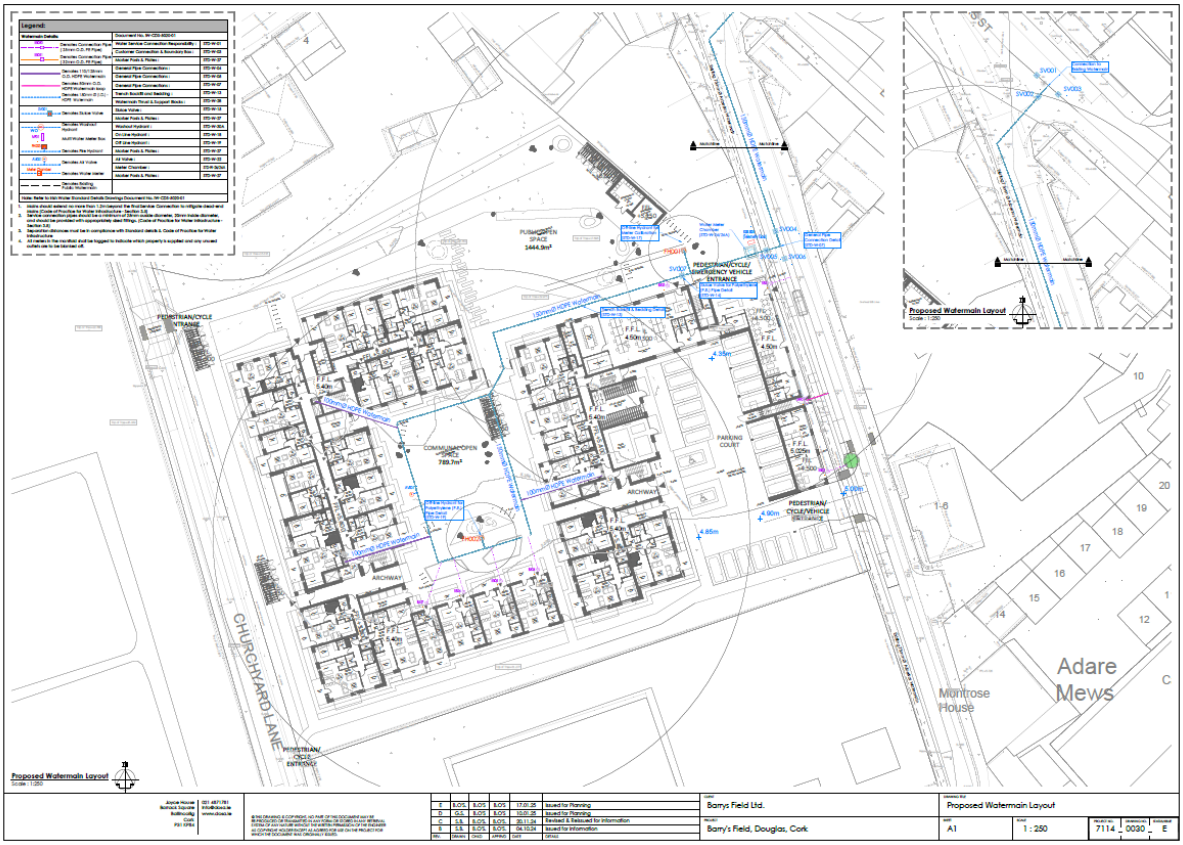


Figure 6. Proposed drainage layout (Source: DOSA, Drawing Ref: 7114-0030-E).

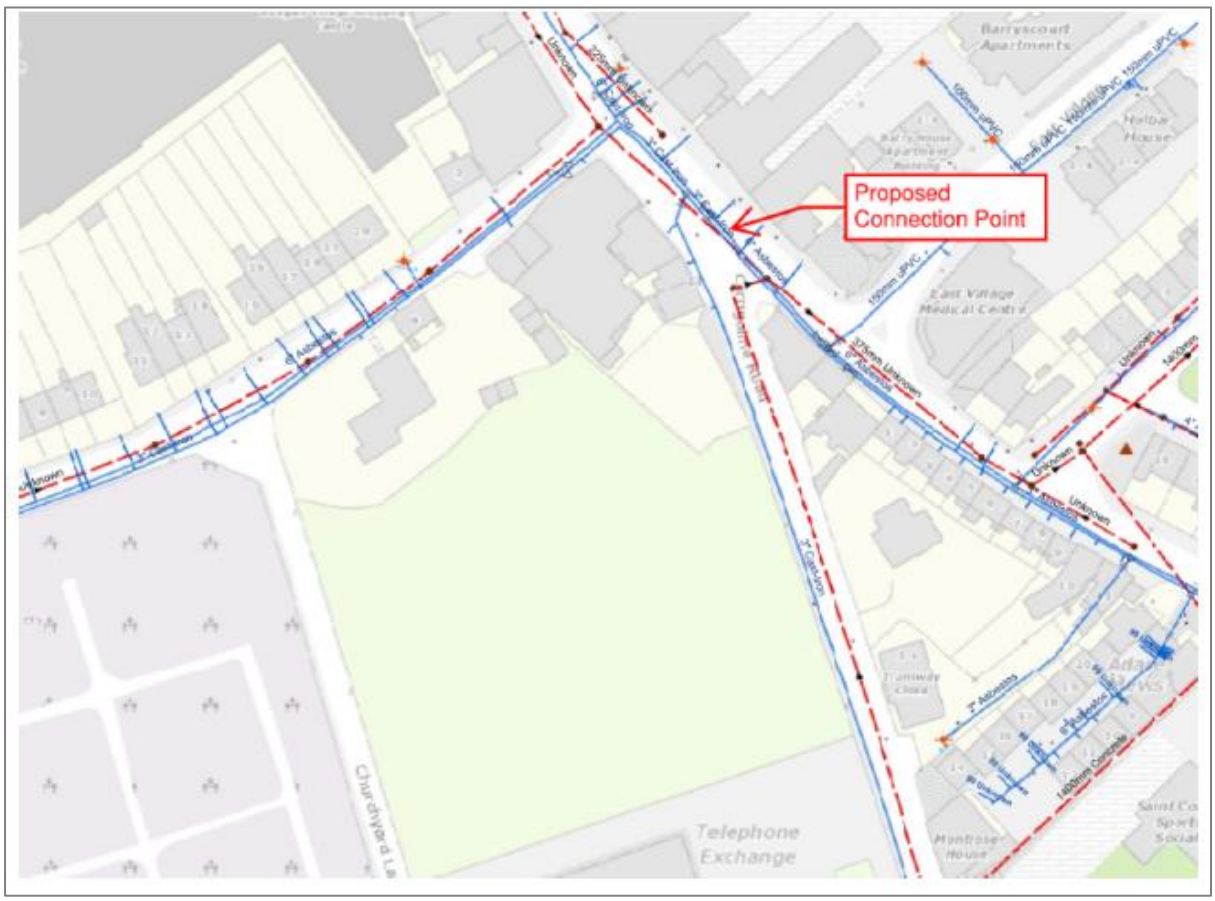


Figure 7. Proposed connection point for water supply (Source: DOSA, 2025a).

Construction Environmental Management Plan (CEMP) (DOSA, 2025c)

Details of the construction phase as well as environmental pollution control measures are presented in a Construction Environmental Management Plan (CEMP) (DOSA, 2025c). This is considered a 'live' document and will be reviewed and updated/revised as necessary throughout the construction phases.

The CEMP describes the construction works sequencing, starting with pre-commencement activities, followed by enabling works, development of site compound, construction, and landscaping. All parts of the construction phase will be covered by the CEMP. Protection measures are provided in relation to stripping and earthworks, maintenance of plant and machinery, storage and use of oils, fuels and chemicals, as well as the development of the surface water and foul water management systems.

Flood risk

A Flood Risk Assessment (FRA) was carried out for the proposed development (Arup, 2025). In the Cork City Development Plan 2022-2028, the site is within Flood Zone C, outside of Flood Zones A and B. This means that the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Key conclusions of the FRA are as follows:

- The proposed development site lies within the defenced area of the Douglas Flood Relief Scheme. It is therefore defended to a level equivalent to the Q100 event (100-year flood) with an additional allowance for freeboard which is generally set at 0.5 m across Douglas.
- The risk of fluvial flooding to the site is limited to design exceedance fluvial events and possible climate change scenarios which may lead to overland flow along Churchyard Lane (Arup, 2025). In such an event the risk of ingress to the site will be managed by ensuring the ground levels at the pedestrian entrances are set c. 200 mm above the existing road levels; sufficient to ensure that water does not enter the site.
- The risk of tidal, groundwater and pluvial flooding to the site is very low.
- There is no off-site impact associated with the development and access and egress routes to the development will be maintained at all times via the Carrigaline Road.
- The site is classified as Flood Zone A and a Justification Test for the development has therefore been undertaken. It is considered that the proposed development satisfies all the criteria of the development management Justification Test and that the risks relating to flooding will be managed to acceptable levels and therefore fully comply with DoEHLG/OPW and Cork City Council planning guidelines.

Arboricultural Impact Assessment

An Arboricultural Impact Assessment (AIA) has been carried out for the proposed project (Heritage Tree Care, 2024a). This AIA is accompanied by a Tree Constraints Plan showing the location of individual trees and tree groups to be retained; and a Tree Clearance Plan showing the location of the individual trees and tree groups to be removed, and a Tree Protection Plan (TPP).

Out of a total 96 trees, 30 trees are to be removed from the site; 25 to facilitate development, and five that are Category U (low value, dead or hazardous). A total of 66 trees require pruning as part of pre-construction preparations on-site. The trees to be removed are largely along the eastern boundary to accommodate the proposed building footprints, access road infrastructure, and public realm interface along Carrigaline Road.

The Arboricultural Impact Assessment provides detailed mitigation measures and tree protection measures to protect the retained trees during the construction phase.

Species	Botanical Name	Native	Total No. trees on the Site	No. Trees to be removed to facilitate development	Category A	Category B	Category C	Category U
Common Lime	*Tilia x europaea*	N	20	0	1	10	4	5
Sycamore	*Acer pseudoplatanus*	N	26	4		9	17	
Ash	*Fraxinus excelsior*	Y	2	0	1	1		
Hawthorn	*Crataegus*	Y	29	15		15	14	
Field Maple	*Acer campestre*	N	4	1		4		
Lombardy Poplar	*Populus nigra italica*	N	11	5		6	5	
Alder	*Alnus glutinosa*	Y	2	0			2	
Silver Birch	*Betula pendula*		2	0		1	1	
		Total	**96**	**25**	**2**	**46**	**43**	**5**
			Total Number of Trees being removed from Site	**30**	*(25 to facilitate development & 5 Category U)*			

Figure 8. Summary of subject trees associated with the site (Source: Heritage Tree Care Ltd, 2024a).

Category A = high quality and value; Category B = moderate quality and value (20-year life expectancy); Category C = moderate quality and value (10-year life expectancy); Category U = poor quality and value.

Landscaping

The landscape design rationale has been prepared by Cunnane Stratton Reynolds (CSR, 2025). The development site has been classified into four spaces as follows: public realm, shared crossway, courtyard and common green space. The proposed landscape masterplan shows the details of the design which incorporates native tree planting, pollinator hedging, and elements incorporated into SuDS design e.g. bioretention basin planting.

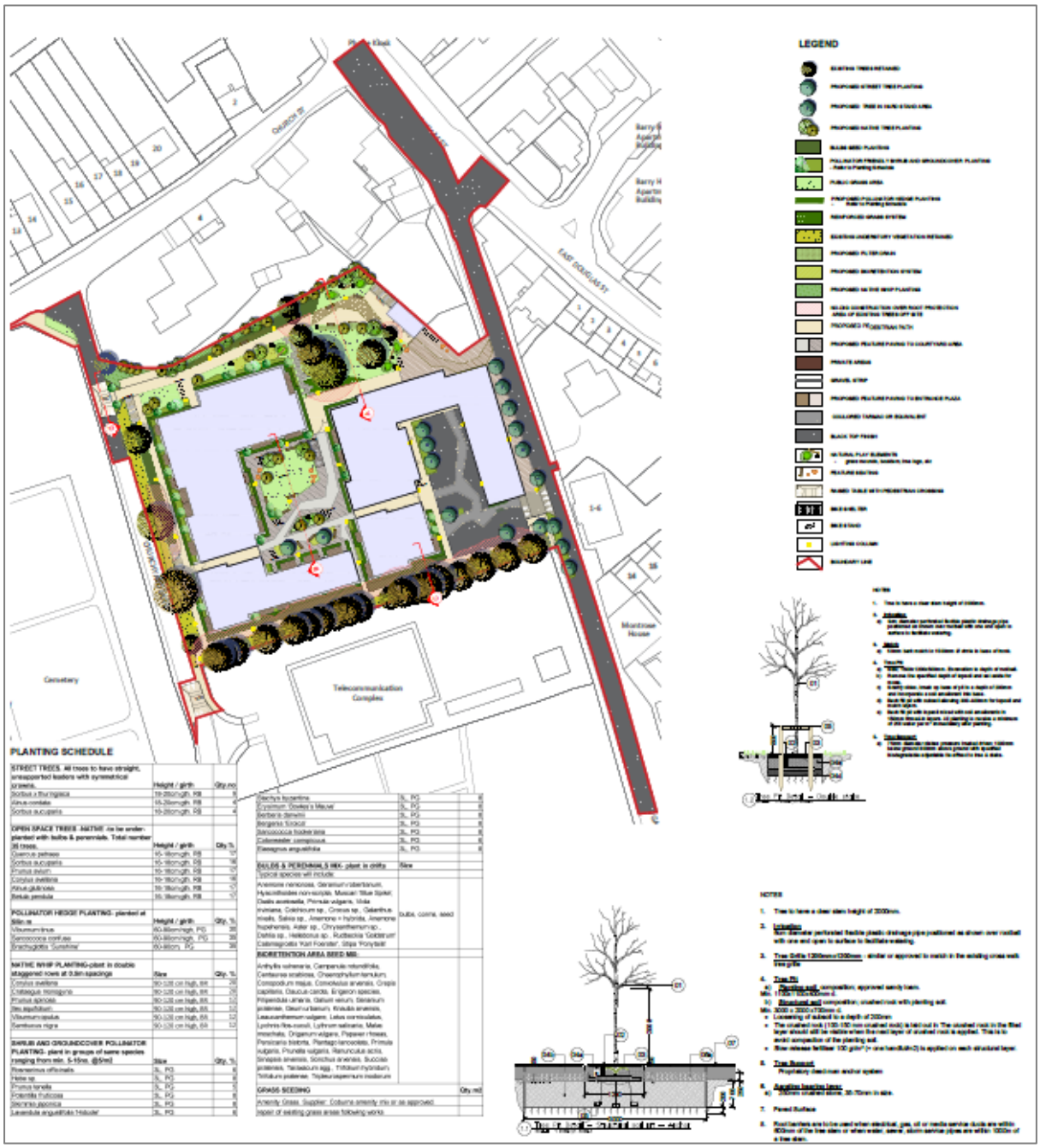


Figure 9. Proposed landscape masterplan (Source: Cunnane, Stratton Reynolds). Please refer to planning drawing for more clarity.

4.0 Baseline environment

4.1 Natura 2000 (European) sites

Natura 2000 sites within a 15 km radius of the site are:

- Cork Harbour Special Protection Area (Site Code 4030) – situated *c.*280 metres at closest point drawn by a straight line (Figure 10).
- Great Island Channel Special Area of Conservation (SAC Site Code 1058) – situated *c.* 6.8 km at closest point drawn by a straight line (Figure 10).



Figure 10. Natura 2000 sites within a 15 km radius of the proposed development site (denoted by yellow line). Proposed site indicated by a yellow dot. Solid pale pink shading denotes Cork Harbour SPA sites while black hatching denotes SAC sites, including within 15 km, Great Island Channel SAC.

4.2 Determining relevant Natura 2000 (European) sites

Natura 2000 (European) sites that lie within a 15 km radius of the proposed development site were identified in Section 4.1 above. Using the Source-Pathway-Receptor model (S-P-R model), relevant Natura 2000 sites are identified (Table 2). No other Natura 2000 (European) site has connectivity with the proposed development site.

Table 2. Determining relevant Natura 2000 (European) sites.

Natura 2000 site	Distance	Connectivity/pathway for impacts?
Cork Harbour SPA	c. 280 metres	**Yes.** Surface/storm water will discharge to the stormwater network at the junction between East Douglas Street and Church Street and ultimately drain to Cork Harbour via a storm water outfall into the Douglas Estuary. **Yes.** Foul water from the proposed development will go for treatment to Cork City (Carrigrennan) Wastewater Treatment Plant (WWTP) that ultimately discharges into Cork Harbour at Lough Mahon (within Cork Harbour SPA).
Great Island Channel SAC	c. 6.8 km at the closest point	**Yes.** Surface/storm water will discharge to the stormwater network at the junction between East Douglas Street and Church Street and ultimately drain to Cork Harbour via a storm water outfall into the Douglas Estuary. This is distant to the SAC however. **Yes.** Foul water from the proposed development will go for treatment to Cork City (Carrigrennan) Wastewater Treatment Plant (WWTP) that ultimately discharges into Cork Harbour at Lough Mahon. While Great Island Channel SAC is not downstream of the WWTP discharge point, tidal/wind movements could be of some relevance in relation to the SAC, where its boundary is c. 550m north-east of the WWTP's discharge point.

4.3 Cork Harbour Special Protection Area

Cork Harbour Special Protection Area (SPA) is a large, sheltered bay system, which stretches from the two main estuaries of the River Lee, near Cork City in the northwest, and the Owenacurra River, near Midleton in the northeast, southwards as far as Roches Point. It is a complex site and encompasses many other estuaries and inlets including the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets.

Cork Harbour is an internationally important wetland site which regularly supported in excess of 20,000 wintering waterfowl at the time of site designation. The site was also selected as a SPA because it supported Black-tailed Godwit *Limosa limosa islandica*, and Redshank *Tringa totanus* in numbers of international importance, while a further 20 non-breeding (wintering) waterbird species occurred in numbers of national importance. The Annex I species Common Tern *Sterna hirundo* also has a breeding population within Cork Harbour (NPWS, 2014b).

The Special Conservation Interest (SCI) species for Cork Harbour SPA are listed in Table 3 together with their baseline data[5] and conservation importance, in terms of All-Ireland importance or international importance, at the time of site designation. The NPWS Site Synopsis is given in Appendix 2.

Table 3. Waterbird Special Conservation Interest (SCI) species for Cork Harbour SPA (* denotes an Annex I species).

Special Conservation Interest Species (SCIs)	**Baseline data** (Mean peak 1995/96 – 1999/00)(I-WeBS)	**Conservation status during baseline period** (Source: NPWS, 2014b)
Shelduck (*Tadorna tadorna*)	2,009	All-Ireland Importance
Wigeon (*Anas penelope*)	1,791	All-Ireland Importance
Teal (*Anas crecca*)	1,065	All-Ireland Importance
Pintail (*Anas acuta*)	57	All-Ireland Importance
Shoveler (*Anas clypeata*)	103	All-Ireland Importance
Red-breasted Merganser (*Mergus serrator*)	121	All-Ireland Importance
Little Grebe (*Tachybaptus ruficollis*)	57	All-Ireland Importance
Great Crested Grebe (*Podiceps cristatus*)	253	All-Ireland Importance
Cormorant (*Phalacrocorax carbo*)	521	All-Ireland Importance
Grey Heron (*Ardea cinerea*)	80	All-Ireland Importance
Oystercatcher (*Haematopus ostralegus*)	1,809	All-Ireland Importance
Golden Plover (*Pluvialis apricaria*)*	3,342	All-Ireland Importance
Grey Plover (*Pluvialis squatarola*)	95	All-Ireland Importance
Lapwing (*Vanellus vanellus*)	7,569	All-Ireland Importance
Dunlin (*Calidris alpina*)	9,621	All-Ireland Importance
Black-tailed Godwit (*Limosa limosa*)	1,896	International Importance
Bar-tailed Godwit (*Limosa lapponica*)*	233	All-Ireland Importance
Curlew (*Numenius arquata*)	2,237	All-Ireland Importance
Redshank (*Tringa totanus*)	2,149	International Importance
Black-headed Gull (*Chroicocephalus ridibundus*)	3,640	All-Ireland Importance
Common Gull (*Larus canus*)	1,562	All-Ireland Importance
Lesser Black-backed Gull (*Larus fuscus*)	783	All-Ireland Importance
Common Tern (*Sterna hirundo*)*	102 breeding pairs	All-Ireland Importance

4.3.1 Conservation objectives

For coastal SPA sites, conservation objectives are defined for attributes relating to waterbird species populations, and for attributes related to the maintenance and protection of habitats that support them. These attributes are (1) population trend; (2) population distribution, and (3) habitat range and area. Site-specific conservation objectives for Cork Harbour SPA were published in 2014 and are shown in Table 4.

[5] Baseline data based on the Irish Wetland Bird Survey (I-WeBS) in NPWS (2014b).

Table 4. Conservation Objectives – Cork Harbour SPA (after NPWS, 2014a, 2014b)

Objective 1 *To maintain the favourable conservation condition of the waterbird Special Conservation Interest species listed for the SPA.*	*To be favourable, the long-term population trend for each waterbird Special Conservation Interest species should be stable or increasing. Waterbird populations are deemed to be unfavourable when they have declined by 25% or more, as assessed by the most recent population trend analysis.*
	To be favourable, there should be no significant decrease in the range, timing or intensity of use of areas by the waterbird species of Special Conservation Interest, other than that occurring from natural patterns of variation
Objective 2 *To maintain the favourable conservation condition of the wetland habitat at the SPA as a resource for the regularly occurring migratory waterbirds that use it.*	*To be favourable, the permanent area occupied by the wetland habitat (2,587 ha) should be stable and not significantly less than the measured area, other than that occurring from natural patterns of variation.*

4.3.2 Conservation status (condition)

The conservation status of non-breeding waterbird species of Cork Harbour SPA in relation to Objective 1a (population trend) was provided in the Conservation Objectives supporting document (NPWS, 2014b). However, this conservation status assessment would now be considered out of date. Recently published site-specific waterbird trends are not available for Cork Harbour. However current published national trends for each of the waterbird SCI species are available (after Kennedy et al. 2022) and are shown in Table 5 (note that the conservation status/condition is not known for breeding Common Tern, or wintering gull species).

Table 5. Current national trend (where available) of waterbird SCI species listed for Cork Harbour SPA (after Kennedy et al. 2022).

SCI Species	5-year	12-year	23-year	Trend classification
Shelduck	6.3	-0.8	9.3	Stable or Increasing
Wigeon	0.9	-17	-18.2	Intermediate Decline
Teal	1.8	5.7	19.4	Stable or Increasing
Pintail	-0.8	-6	-13.7	Intermediate Decline
Shoveler	23	-21.3	-10.8	Intermediate Decline
Red-breasted Merganser	-12.9	5.2	-14.7	Intermediate Decline
Little Grebe	6.1	16.7	38.2	Stable or Increasing
Great Crested Grebe	-39.5	-6.1	-10.8	Intermediate Decline
Cormorant	38.5	8.4	42.9	Stable or Increasing
Grey Heron	1	-4.9	6.6	Stable or Increasing
Oystercatcher	-17.5	-31.1	10.8	Stable or Increasing
Golden Plover	-16.9	-58.1	-54.1	Large Decline
Grey Plover	-30.6	-39.4	-57.8	Large Decline
Lapwing	-6.5	-45.1	-63.9	Large Decline
Dunlin	5.9	-21.2	-45.2	Moderate Decline
Black-tailed Godwit	22.5	25	92.3	Stable or Increasing
Bar-tailed Godwit	-32.6	-13.9	-5.1	Intermediate Decline
Curlew	-9.4	-23.7	-43.1	Moderate Decline
Redshank	-14	-28.4	6.7	Stable or Increasing
Black-headed Gull	-	-	-	Not available
Common Gull	-	-	-	Not available

Lesser Black-backed Gull	-	-	-	Not available
Common Tern	-	-	-	Not available

4.4 Great Island Channel Special Are of Conservation

The Great Island Channel SAC stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Within the site is the estuary of the Owennacurra and Dungourney Rivers and these rivers, which flow through Midleton, provide the main source of freshwater to the North Channel. A summary of qualifying interests is given in Table 6. The NPWS Site Synopsis is given in Appendix 2.

Table 6. Summary of qualifying interests for Great Island Channel SAC.

Qualifying Interest	Description (after NPWS, 2008)	Site-specific details
Tidal Mudflats and Sandflats [1140]	Intertidal mudflats and sandflats are submerged at high tide and exposed at low tide and are normally associated with inlets, estuaries or shallow bays. The physical structure of these intertidal flats ranges from mobile, coarse-sand beaches on wave exposed coasts to stable, fine-sediment mudflats in estuaries and other marine inlets. They can support diverse communities of invertebrates.	Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Hediste* (*Nereis*) *diversicolor* and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places and especially at Rossleague and Belvelly.
Atlantic Salt Meadows [1330]	Atlantic salt meadows generally occupy the widest part of the saltmarsh gradient. They also contain a distinctive topography with an intricate network of creeks and salt pans occurring on medium to large sized saltmarshes. Atlantic salt meadows contain several distinctive zones that are related to elevation and frequency of submergence.	The saltmarshes are scattered through this site and are all of the estuarine type (mud substrate). Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).

4.4.1 Conservation objectives

Site-specific conservation objectives for Great Island Channel SAC were published in 2014 NPWS (2014c). NPWS (2014d) provides supporting information for coastal habitats (Atlantic salt meadows) while NPWS (2014e) provides supporting information for the marine habitat that is a qualifying interest for the site, namely 'mudflats and sandflats not covered by sea water at low tide'. These are

detailed objectives, and several attributes are used to define the features that should be preserved or restored to favourable conservation condition. Example of attributes used include habitat area, physical structure (flooding regime) and vegetation zonation (pertinent to saltmarshes) and benthic community composition (pertinent to mudflats and sandflats not covered by sea water at low tide). The conservation objectives documents are freely available on www.npws.ie and were examined as part of the ecological assessment reported here.

4.4.2 Conservation status

Nationally, Ireland, like other EU member states, is required to report on the conservation status of habitats and species listed on the annexes of the Habitats Directive (Article 17 reporting) at six-yearly intervals. In December 2007, Ireland submitted its first baseline assessments of conservation status for 59 habitats and *c.*100 species that occur in Ireland (NPWS, 2008). This assessment was updated in 2013 (NPWS, 2013a,b) and most recently in August 2019 (NPWS, 2019). Habitats are classified as being "favourable", "inadequate", "bad" or "unknown". The current status of the qualifying interests listed for the Great Island Channel SAC is given in Table 7 below.

Table 7. Conservation status of qualifying interest habitats and species of the Great Island Channel SAC (after NPWS 2019).

Habitats of qualifying interest	Status (after NPWS, 2019)
Tidal Mudflats and Sandflats (1140)	Inadequate (deteriorating trend)
Atlantic Salt Meadows (1330)	Inadequate (deteriorating trend)

4.5 Ecology of the proposed site

Habitats

The site is greenfield in nature comprising a 'field' containing rank, unmanaged grassland, surrounded and enclosed by treelines. The following section describes the habitats that were identified. Nomenclature follows Stroh et al. (2023) and Latin names are given at first mention.

Dry Meadows and Grassy Verges (GS2)

This habitat was recorded in the main area open area within the study site boundary and consisted of a tall, rank grassland which was dominated by coarse grasses. The sward height was up to 1 metre. No evidence of recent management (either grazing or mowing) was observed and scrub species and sapling trees were encroaching into the grassland habitat from the peripheries of the study site.



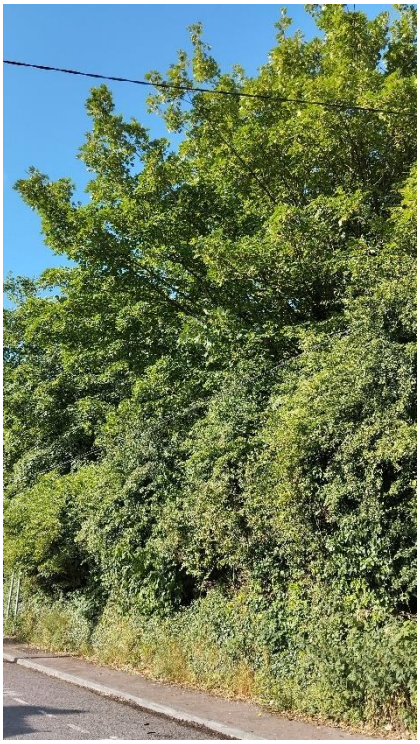
Plate 1. Dry meadow habitat dominates the site.



Plate 2. Dry meadow habitat dominates the site with treelines forming the backdrop. Rubbish, old shopping trollies and piles of drink cans suggest the site is used for 'recreational' purposes.

Species recorded in the grassland included frequent False Oat-grass *Arrhenatherum elatius,* Creeping Thistle *Cirsium arvense* and Yorkshire Fog *Holcus lanatus*. Cocks-foot *Dactylis glomerata*, Creeping Buttercup *Ranunculus repens*, Creeping Bent *Agrostris stolonifera*, Bindweed *Calystegia spp.* and Hogweed *Heracleum sphondylium* were occasionally recorded. Common Nettle *Urtica dioica*, Dandelion *Taraxacum*, Greater Bird's-foot-trefoil *Lotus pedunculatus*, Hedge Woundwort *Stachys sylvatica*, Common Ragwort *Jacobaea vulgaris*, Meadow Buttercup *Ranunculus acris*, Red Clover *Trifolium pratense*, Ribwort Plantain *Plantago lanceolata*, Cleavers *Galium aparine*, Bush Vetch *Vicia sepium* and Dock (*Rumex* sp.) were rarely recorded.

Treelines (WL2)



Mature treelines were recorded around the boundary of much of the study site with Sycamore *Acer pseudoplatanus* frequently recorded on the western and part of the northern boundary along with Ash *Fraxinus excelsior* which was rarely recorded. Hawthorn *Crataegus monogyna*, Common Privet, Bramble *Rubus fruticosus* agg., Ivy *Hedera helix* and Elm (*Ulmus* sp.) were occasionally to rarely recorded growing beneath.

The southern treeline held frequent mature Lime *Tilia spp.* and occasional Poplar *Populus spp.* trees. Holly *Ilex aquifolium* and Hawthorn were recorded growing beneath these trees. The area under these trees was deeply shaded with frequent Ivy and Herb-Robert *Geranium robertianum* rarely recorded. Ivy Broomrape *Orobanche hederae* was recorded growing in the south-eastern corner, close to the existing informal entrance to the site.

A section of treeline along the southeastern side of the study site was dominated by Sycamore. A treeline in the northeastern side of the study site contained occasional Sycamore including two specimens with variegated vegetation. Birch *Betula spp.*, Apple (*Malus* spp.), Field Maple *Acer campestre*, Norway Maple *Acer platanoides* and Alder *Alnus glutinosa* were all rarely recorded. Holly and Elder *Sambucus nigra* were also present.

Hedgerow (WL1)

Hedgerow habitat was recorded along the eastern boundary where Hawthorn was frequently recorded growing on a c. 1 m earth and stone bank adjacent to the footpath. Other woody species present included Elder, Snowberry *Symphoricarpos albus*, Butterfly-bush *Buddleja davidii* and Mock Orange (*Philadelphus* sp.). A range of species grew on the bank including frequent Ivy along with Bindweed and Travellers-joy *Clematis vitalba* which scrambled over the hedgerow vegetation. Nipplewort *Lapsana communis,* Common Privet, Common Nettle, Pellitory-of-the-wall *Parietaria judaica*, False Oat-grass, Ivy-leaved Toadflax *Cymbalaria muralis*, Lords and Ladies (*Arum* sp.), Alexanders *Smyrnium olusatrum*, Bilbao's Fleabane *Erigeron floribundus*, Smooth Sow-thistle *Sonchus oleraceus*, Wood Avens *Geum urbanum*, Broad-leaved Dock *Rumex obtusifolius* and Dandelion were all occasionally to rarely recorded.

A gappy hedgerow was recorded along the northern boundary were Hawthorn and ornamental Cypress bushes were growing at intervals along the boundary.

Scrub (WS1)

Bramble dominated scrub was recorded growing around the edge of the grassland habitat, indicative of the lack of management of the grassland habitat and subsequent encroachment of the scrub species. Along with Bramble, Travellers Joy, Hedge Bindweed *Calystegia sepium*, Cleavers, False Oat-grass, Butterfly Bush, Japanese Knotweed *Fallopia japonica* were all recorded in the scrub habitat.



Plate 3. Japanese Knotweed along with Hedge Bindweed (white flower).



Figure 11. Habitat map.
Legend: GS2 Dry meadows and grassy verges, WL1 Hedgerow WL2 Treeline, WS1 Scrub.

Potential for protected flora

A search of the online National Biodiversity Data Centre (NBDC) database was undertaken for records of rare or scarce flowering plants, mosses, bryophytes and lichens within the relevant national 2-km squares (W66Z and W76E) covering the proposed development site. The records were assessed against the current conservation status of habitats and flora in terms of species inclusion in one or more of the following: Ireland Red Lists e.g. vascular plants (Wyse-Jackson et al. 2016), the Flora Protection Order (2022); and the EU Habitats Directive (92/43/EEC). This review resulted in a list of five flowering plant species (Table 8). It is important to note however, that these records are not necessarily the complete list of rare or protected plant species for these grid squares. Absence of records of threatened or protected species from an area does not imply that they are not present within the given area, but rather, that no records are held.

The species listed in Table 8 were then checked against data in the most recent Plant Atlas (Strohl et al. 2023). The final column in Table 8 gives an indication of when the plant was last recorded within the grid squares assessed. This combined data reveals that all five plant species have been recorded within the last five years. None were recorded within the proposed site.

Table 8. Rare, scarce or protected plant species that have been recorded previously in grid square W66Z and W76E. *Red list status after Wyse-Jackson et al. (2016). NBDC data downloaded 19th November 2024.

Common name	Latin name	Date of record	Red List Status*	Most recent record (after Plant Atlas 2020)[a]
Cornflower	*Centaurea cyanus*	18/07/2019	Red List: Threatened Species (waiting list)	2019
Greater Knapweed	*Centaurea scabiosa*	18/07/2019	Red List: Near threatened	2019
Little-robin	*Geranium purpureum*	17/05/2017	Red List: Near threatened	2019
Meadow Crane's-bill	*Geranium pratense*	18/07/2019	Red List: Vulnerable	2019
Round-leaved Crane's-bill	*Geranium rotundifolium*	09/05/2020	Red List: Least concern (Vulnerable)	2019

[a]Strohl et al. (2023) https://plantatlas2020.org/atlas/2cd4p9h.5g3

Birds

A total of 19 bird species was recorded during the breeding bird surveys (Table 9), with 18 species recorded within the site or on its boundaries, and one species (Goldfinch) recorded in flight over the site only. The treelined site boundaries were the most important habitats used by birds with nearly all records relating to birds within treelines, or within patches of scrub. One species was confirmed to be breeding within the site boundaries (Woodpigeon), but 17 species have the potential to be breeding.

Overall, the bird species recorded (Table 9) are considered common and widespread birds of the Irish countryside. No Annex I bird species were recorded, and no Red-listed species of highest conservation concern were recorded. Two Amber-listed species were recorded (medium conservation concern: Goldcrest and Starling; neither confirmed breeding within the site, although breeding is possible.

Table 9. Bird species recorded during the 2024 breeding season surveys. This table shows the total number of birds recorded in the Early and Late survey visits. Also shows Red- and Amber-listed bird species of High and Medium Conservation Concern (BoCCI-4 - after Gilbert et al. 2021), the habitat that the species was observed in, and the highest breeding status (following BTO classification).

Species code	Common name	Latin name	BoCCI-4	Early	Late	Breeding Codes	Breeding status	Habitat*	Notes
B.	Blackbird	*Turdus merula*		3	4	H/S	Possible	WL2, WS1	
BC	Blackcap	*Sylvia atricapilla*		2	1	S	Possible	WL2	
BF	Bullfinch	*Pyrrhula pyrrhula*			1	H	Possible	WL2	
CH	Chaffinch	*Fringilla coelebs*		2		H/S	Possible	WL2	
CT	Coal Tit	*Periparus ater*			1	H	Possible	WL2	
CD	Collared Dove	*Streptopelia decaocto*			2	H	Possible	WL1	
D.	Dunnock	*Prunella modularis*		1	1	H/S	Possible	WL1	Immature birds observed
GC	Goldcrest	*Regulus regulus*	Amber		1	H	Possible	WL2	
GO	Goldfinch	*Carduelis carduelis*			1				In flight over site
GT	Great Tit	*Parus major*		1	2	H	Possible	WL2	Immature birds observed
HC	Hooded Crow	*Corvus cornix*		1	2	H	Possible	WL2	Also observed in flight over site
JD	Jackdaw	*Corvus monedula*			1	H	Possible	WL2	
MG	Magpie	*Pica pica*		1	1	H	Possible	WL2	
R.	Robin	*Erithacus rubecula*		2		S	Possible	WL2	
RO	Rook	*Corvus frugilegus*		1		S	Possible	WL2	Also observed in flight over site
ST	Song Thrush	*Turdus philomelos*			1	H	Possible	WL2	
SG	Starling	*Sturnus vulgaris*	Amber	3		S	Possible	WL2	Also observed in flight over site
WP	Woodpigeon	*Columba palumbus*		7	2	H/S/FF	Confirmed	WL2, WS1	Also observed in flight over site
WR	Wren	*Troglodytes troglodytes*		3	2	S	Possible	WL2	

*Habitat codes: WL2 Treeline, WS1 Scrub.

A search of the online National Biodiversity Data Centre (NBDC) database was undertaken for records of bird species of conservation concern previously recorded within the national 2-km squares (W66Z and W76E) covering the proposed development site. The records were assessed against the current conservation status of birds of conservation concern (Gilbert et al. 2021) (Table 10). It is important to note however, that these records are not necessarily the complete list of species for these grid squares. Absence of records does not imply that they are not present within the given area, but rather, that no records are held. The final column of Table 10 gives the likelihood of these species occurring within the proposed site, based on species' ecology.

Table 10. Records of bird species of conservation concern previously in grid square W66Z and W76E. *Status after Gilbert et al. (2021). NBDC data downloaded 19th November 2024. Species listed alphabetically.

Common name	Latin name	Date of last record	Status (after Gilbert et al. 2021)	Potential for occurrence within site?
Black-headed Gull	*Larus ridibundus*	19/11/2016	Amber List (breeding and wintering)	No
Black-tailed Godwit	*Limosa limosa*	31/12/2011	Red List (breeding)	No
Common Gull	*Larus canus*	19/11/2016	Amber List (breeding and wintering)	No
Cormorant	*Phalacrocorax carbo*	19/11/2016	Amber List (breeding and wintering)	No
Greenfinch	*Carduelis chloris*	31/12/2011	Amber List (breeding)	Yes
Herring Gull	*Larus argentatus*	19/11/2016	Amber List (breeding and wintering)	No
Kingfisher	*Alcedo atthis*	04/08/2018	Amber List (breeding) / Annex I	No
Linnet	*Carduelis cannabina*	31/12/2011	Amber List (breeding)	Potential
Little Egret	*Egretta garzetta*	07/09/2016	Annex I	No
Mallard	*Anas platyrhynchos*	19/11/2016	Amber List (breeding and wintering)	No
Meadow Pipit	*Anthus pratensis*	23/04/2023	Amber List (breeding)	Unlikely
Oystercatcher	*Haematopus ostralegus*	19/11/2016	Red List (breeding and wintering)	No
Shelduck	*Tadorna tadorna*	24/05/2016	Amber List (breeding and wintering)	No
Skylark	*Alauda arvensis*	22/05/2019	Red List (breeding)	Unlikely
Snipe	*Gallinago gallinago*	17/03/2021	Red List (breeding and wintering)	Unlikely
Starling	*Sturnus vulgaris*	19/11/2016	Amber List (breeding)	Yes - confirmed
Stock Dove	*Columba oenas*	31/12/2011	Red List (breeding)	No
Swallow	*Hirundo rustica*	31/12/2011	Amber List (breeding)	Yes (foraging over in flight)
Swift	*Apus apus*	01/07/2023	Red List (breeding)	Potential (foraging over in flight)
Teal	*Anas crecca*	12/03/2019	Amber List (breeding and wintering)	No

Non volant mammals/Other fauna

No signs of mammal species were recorded within the site during the surveys. Other records made were of the following:
Speckled Wood Butterfly *Pararge aegeria.*
Forest Bug *Pentatoma rufipes.*
Udea lutealis – a moth of the family Crambidae.
Agapeta hamana - a moth of the family Tortricidae.

A search of the online National Biodiversity Data Centre (NBDC) database was undertaken for records of rare or protected mammal and amphibian species previously recorded within national 2-km squares (W66Z and W76E) covering the proposed development site. Note, that as with plant and bird records above, this species list should be viewed as incomplete; and does not imply that other rare, scarce or protected species do not occur, but rather that no records are currently available (Table 11).

Table 11. Rare/Protected mammal and amphibian species that have been recorded previously within grid squares W66Z and W76E. Based on data downloaded from the NBDC 19th November 2024.

Mammals	EU Habitats Directive	Wildlife Act, 2000	Red Data Species*
Insectivora			
Hedgehog *Erinaceous europaeus*		√	lc
Chiroptera		√	lc
Lesser Noctule *Nyctalus leisleri*	IV	√	lc
Rodentia			
Red Squirrel *Sciurus vulgaris*		√	lc
Carnivora			
Badger *Meles meles*		√	lc
Irish Stoat *Mustela erminea hibernica*		√	lc
Otter *Lutra lutra*	II & IV	√	lc
Amphibians			
Common Frog *Rana temporaria*	V	√	lc

* Marnell, F., Kingston, N. & Looney, D. (2019) *Ireland Red List No. 12 – Terrestrial Mammals.* National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland, (NPWS, 2021) Irish Wildlife Manual 116 Checklists Protected and Threatened Species Version 2.1 3 December 2021.xlsx. (Ireland Red List criteria follow IUCN (2001): RE Regionally Extinct; CR Critically Endangered; EN Endangered; VU Vulnerable; NT Near threatened; lc least concern; dd data deficient; na not assessed)

Bats

Please refer to the separate bat report submitted with the planning application by Greenleaf Ecology (2025).

Invasive, alien species (IAS species)

The following IAS species were recorded within the site (Table 12):

Japanese Knotweed - a high-impact Third Schedule IAS species. Its presence is known within the site, and it has been subject to survey. A management plan has been prepared by O'Donovan Agri Ltd.
Cherry Laurel (*Prunus laurocerasus*) – a high impact IAS species.

Clematis vitalba (Traveller's Joy or Old Man's Beard) – a wild clematis. A medium impact species.
Sycamore - a medium impact species, was recorded within the treeline habitats. It is regarded as invasive due to its propensity to self-seed. Research suggests that Sycamore is an archaeophyte introduced in ancient times and dates back to the Neolithic and as such should be re-classified and not considered as a threat to native ecosystems (Stolze et al. 2017). However, the species does appear invasive in places and out-competes other native species, particularly Ash.
Butterfly Bush (*Budleja davidii)* - A medium impact species.
Montbretia sp. – a low impact/risk IAS species.
Winter heliotrope (***Petasites fragrans*****)** - a low impact/risk IAS species.

Table 12. IAS species records.

Easting	Northing	Species name	Notes
569905	569460	Travellers Joy	Scrambling along the lower vegetation under the treeline and adjacent scrub. All along the western boundary.
569975	569406	Cherry Laurel	Immature bush under treeline
569976	569405	Montbretia sp.	3 plants under treeline
569995	569420	Cherry Laurel	2 semi mature bushes under treeline
570000	569423	Butterfly Bush	Mature bush in SE corner with Fuchsia
569995	569420	Travellers Joy	Scrambling over scrub
569981	569447	Japanese Knotweed	Large stand near eastern boundary in Bramble scrub c. 5-7 m diameter. Access difficult in scrub
569986	569459	Butterfly Bush	On/near eastern boundary
570005	569487	Travellers Joy	Scrambling over boundary hedgerow
570003	569473	Japanese Knotweed	Large stand just inside the eastern boundary hedge, c. 5 m diameter. Might link up with other stand. Difficult to see in scrub and access restricted with scrub.
570019	569440	Butterfly Bush	Bush in eastern boundary hedgerow
570019	569440	Travellers Joy	Scrambling over vegetation on eastern hedgerow
570025	569416	Travellers Joy	Scrambling over boundary hedgerow
570012	569417	Winter Heliotrope	Clump under treelines near existing informal entrance

4.6 Ecological evaluation

Ecological values are assigned to the features recorded on site using the methods described in Section 2.2 (Table 13).

Table 13. Ecological value of on-site ecological features.

Feature	Ecological value assigned	Rationale
Dry meadows and grassy verges	Moderate Local	Likely provides foraging habitats for insects, birds etc but this habitat was not of any special importance.
Scrub WS1	Moderate Local	Likely provides nesting, foraging and commuting habitat for small mammals, insects, birds etc
Treelines WL2	Moderate to High Local	Mature trees of a variety of species. Supported the majority of birds recorded and important for bat foraging. Ecological corridor.
Birds	Moderate Local	Majority of species are common and widespread species of the Irish countryside.
Bats	-	Refer to Greenleaf Ecology (2025)
Non volant mammals/other fauna	Low local	No species of interest recorded.

5.0 Screening Assessment

5.1 Overview

AA screening focuses upon impacts on Natura 2000 sites and their qualifying habitats and species. Of importance therefore, is the assessment as to whether predicted impacts will be significant. Significance should be established in light of, amongst other things, the characteristics and specific environmental conditions of the site concerned, and the likely effects of the plan or project. If a plan or project is likely to undermine any of the site's conservation objectives it must be considered likely to have a **significant effect** on that site (EC, 2001). Conversely, if a plan or project will have impacts on a site, but these impacts will clearly not affect or undermine those conservation objectives, then it is considered that the project/plan will not have a significant effect on the site concerned (DoEHLG, 2009).

An essential first step in this process is the determination of whether there is an overlap or coincidence between the qualifying interest habitats and species of the Natura 2000 site and the 'zone of influence' of the proposed development. The zone of influence of a proposed development can be defined as the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework (OPR, 2021). Natura 2000 sites are considered 'relevant' where a source-pathway-receptor link exists between the proposed development and the Natura 2000 site.

An assessment of potential overlap or coincidence between the qualifying interest habitats and species of relevant Natura 2000 sites and the 'zone of influence' of the proposed development are given in Tables 14a – 14b.

Table 14a. Determination of coincidence between the qualifying interest habitats/species of Cork Harbour SPA Conservation and the ZOI of the proposed development

Special Conservation Interests (SCIs)	Occurs within/adjacent to the site?	Source-pathway-receptor link?
Shelduck	No. Ex situ impacts highly unlikely (refer to text)	**Yes.** Surface/storm water will discharge to the stormwater network at the junction between East Douglas Street and Church Street and ultimately drain to Cork Harbour via a storm water outfall into the Douglas Estuary which is an integral part of the SPA. **Yes.** Foul water from the proposed development will go for treatment to Cork City (Carrigrennan) Wastewater Treatment Plant (WWTP) that ultimately discharges into Cork Harbour at Lough Mahon (within Cork Harbour SPA).
Wigeon	No. Ex situ impacts highly unlikely (refer to text)	
Teal	No. Ex situ impacts highly unlikely (refer to text)	
Pintail	No. Ex situ impacts highly unlikely (refer to text)	
Shoveler	No. Ex situ impacts highly unlikely (refer to text)	
Red-breasted Merganser	No. Ex situ impacts highly unlikely (refer to text)	
Little Grebe	No. Ex situ impacts highly unlikely (refer to text)	
Great Crested Grebe	No. Ex situ impacts highly unlikely (refer to text)	
Cormorant	No. Ex situ impacts highly unlikely (refer to text)	
Grey Heron	No. Ex situ impacts highly unlikely (refer to text)	
Oystercatcher	No. Ex situ impacts highly unlikely (refer to text)	
Golden Plover	No. Ex situ impacts highly unlikely (refer to text)	
Grey Plover	No. Ex situ impacts highly unlikely (refer to text)	
Lapwing	No. Ex situ impacts highly unlikely (refer to text)	
Dunlin	No. Ex situ impacts highly unlikely (refer to text)	
Black-tailed Godwit	No. Ex situ impacts highly unlikely (refer to text)	
Bar-tailed Godwit	No. Ex situ impacts highly unlikely (refer to text)	
Curlew	No. Ex situ impacts highly unlikely (refer to text)	
Redshank	No. Ex situ impacts highly unlikely (refer to text)	
Black-headed Gull	No. Ex situ impacts highly unlikely (refer to text)	
Common Gull	No. Ex situ impacts highly unlikely (refer to text)	
Lesser Black-backed Gull	No. Ex situ impacts highly unlikely (refer to text)	
Common Tern	No. Ex situ impacts highly unlikely (refer to text)	

Table 14b. Determination of coincidence between the qualifying interest habitats/species of Great Island Channel SAC and the ZOI of the proposed development

Habitats and species of Qualifying Interest	Occurs within/adjacent to the site?	Source-pathway-receptor link?
Tidal Mudflats and Sandflats [1140]	No	**No.** Surface/storm water will discharge to the stormwater network at the junction between East Douglas Street and Church Street and ultimately drain to Cork Harbour via a storm water outfall into the Douglas Estuary. This is distant to the SAC however, and impacts upon the Qis of the SAC are deemed to be unlikely. **Yes.** Foul water from the proposed development will be conveyed for treatment to Cork City (Carrigrennan) Wastewater Treatment Plant (WWTP) that ultimately discharges into Cork Harbour at Lough Mahon. While Great Island Channel SAC is not downstream of the WWTP discharge point, tidal/wind movements could be of some relevance in relation to the SAC, its boundary being c.550m north-east of the WWTP's discharge point.
Atlantic Salt Meadows [1330]	No	

5.2 Assessment – potential for impacts upon Natura 2000 (European) sites

Project Details	
Name of project	Permission for the following Large-Scale Residential Development (LRD) located at Carrigaline Road and Churchyard Lane, Douglas, Cork, comprising of the construction of 124 no. residential apartments (consisting of a mix of 1, 2 and 3 bed units), 1 no. cafe unit and 2 no. office units, in a development ranging in height from 1 to 5 storeys and all associated site development works
Natura 2000 sites within potential impact zone	• Cork Harbour Special Protection Area (Site Code 4030) • Great Island Channel Special Area of Conservation (SAC Site Code 1058)
Qualifying features of Natura 2000 sites	Please refer to Sections 4. 3 – 4.4.2 of this report.
Distance of project from Natura 2000 sites	Cork Harbour Special Protection Area (Site Code 4030) – situated *c.*280 metres at closest point drawn by a straight line. Great Island Channel Special Area of Conservation (SAC Site Code 1058) – situated *c.* 6.8 km at closest point drawn by a straight line.
Is the project directly connected with or necessary to the management of the sites?	No.
Are there other projects that together with the project being assessed could affect the sites?	Please refer to the next section of this report (Section 5.3).
Brief description of project	Permission for the following Large-Scale Residential Development (LRD) located at Carrigaline Road and Churchyard Lane, Douglas, Cork, comprising of the construction of 124 no. residential apartments (consisting of a mix of 1, 2 and 3 bed units), 1 no. cafe unit and 2 no. office units, in a development ranging in height from 1 to 5 storeys and all associated site development works including footpaths, car and bicycle parking, drainage, bicycle and bin stores, lighting, fencing, landscaping/amenity areas, ESB substation/switchroom and plant room. Site development works include 2 no. new uncontrolled pedestrian crossings and footpath improvements on Churchyard Lane which requires the removal of 6 no. existing on-street car parking spaces. The proposed development works include a connection and construction of a new storm water and foul sewer along Carrigaline Road. Access to the site will be via a new vehicle access point and a new pedestrian connection from Carrigaline Road and 2 new pedestrian connections onto Churchyard Lane. The new vehicular access requires the removal of 4 no. existing car parking spaces.
Describe the individual elements of the project (either alone or in combination with other projects) likely to give rise to impacts on the Natura 2000 sites):	
- *Ex-situ* impacts – potential for waterbirds listed for Cork Harbour to occur within the site and be impacted by the proposed development. - Uncontrolled/unattenuated surface and storm water (construction and operation phases) - could lead to negative impacts upon the water quality of the Douglas Estuary and wider Cork Harbour SPA, with knock-on impacts upon all SCI species. Given the distance involved, this potential impact is not considered likely to affect the Qis of the Great Island Channel SAC, some 6.8 km away.	

- Potential for pollution from accidental spills of oils, fuels, cements, etc during the construction phase - could lead to negative impacts upon the water quality of the Douglas Estuary and wider area of Cork Harbour SPA, with knock-on impacts upon all SCI species. Given the distance involved, this potential impact is not considered likely to affect the QIs of the Great Island Channel SAC, some 6.8 km away.
- Foul water – the development will connect to Cork City WWTP at Carrigrennan which discharges into Lough Mahon.
- Flood risk.
- IAS species.

Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on Natura 2000 sites by virtue of:

(a) Size and scale; (b) Land-take; (c) Distance from Natura 2000 Site or key features of the Site; (d) Resource requirements; (e) Emissions; (f) Excavation requirements; (g) Transportation requirements; (h) Duration of construction, operation etc.; and (i) Other

(a) Size and scale

Site of area 1.04 ha.

(b) Land take (Habitat loss)

There will be no direct habitat loss as the proposed site lies outside of the boundary of any Natura 2000 (European) site.

(c) Distance to Natura 2000 sites

Cork Harbour Special Protection Area (Site Code 4030) – situated *c.*280 metres at closest point drawn by a straight line.

Great Island Channel Special Area of Conservation (SAC Site Code 1058) – situated *c.* 6.8 km at closest point drawn by a straight line.

(d) Resource requirements

Surface/storm water will discharge into the Douglas Estuary (Cork Harbour).

Foul water, after treatment, ultimately discharges to Cork Harbour (Lough Mahon).

(e) Emissions

Surface/storm water – operational phase

The proposed storm water drainage system has been designed to cater for all surface water runoff from all hard surfaces within the proposed development including roadways, roofs, parking areas etc (DOSA, 2025a). A surface water management strategy has been prepared for the proposed development (DOSA, 2025b). The completed development site will be a mix of soft landscaping and hard paving or roofing. The existing topography is a single catchment. There will be one (1 no.) surface water discharge points to service the developed site and it will discharge to the stormwater network at the junction between East Douglas Street and Church Street.

The diversion of runoff from the catchment will be offset by the use of infiltrating-type SuDS infrastructure. Surface water runoff generated from the proposed residential development will be conveyed through a proposed surface water network including SuDS and attenuation/management on site prior to final discharge at Qbar greenfield run-off rates. The existing stormwater network at the junction between East Douglas Street and Church Street has been chosen as the suitable surface water discharge point for the proposed development (DOSA, 2025b).

Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control devices (Hydrobrakes or equivalent) and associated attenuation area. Surface water discharge will also pass via a full retention fuel / oil separators (sized in accordance with permitted discharge from the site). The storm sewer network was designed using Autodesk InfoDrainage modelling software. Outputs from the storm sewer design can be found in the Appendices of the Infrastructure Report (DOSA, 2025a).

All flow velocities within the network fall within the limits of 0.75 and 3m/sec as set out in "Recommendations for Site Development Works" as published by the Department of Environment. The storm water network and detention basin are designed to accommodate the 100-year return period plus an additional 20% to account for the effects of climate change (DOSA, 2025b).

The following SuDS features will be implemented as part of the design: filter drains (to be located along the proposed internal parking and pathways and will allow groundwater to recharge to its natural state), bio-retention systems (to be located in areas of open green space), and attenuation tanks. It is proposed to provide a petrol interceptor upstream of the attenuation area to ensure that any remaining hydrocarbons or pollutants within the runoff are treated prior to outfall to the drainage network. It is proposed to provide a Kingspan Bypass Separator Types or similar approved (DOSA, 2025b). The proposed petrol interceptor also includes a silt storage capacity that will allow silt to be collected in the interceptor prior to discharge to the proposed attenuation tanks. This silt build-up can then be removed from the tanks (DOSA, 2025a).

The proposed surface water management design is in adherence with current best practice. Given the level of detail incorporated into the surface water management design (operational phase), the proposals are considered to adequately address the potential impacts of unattenuated surface/storm water on the Douglas Estuary and Cork Harbour SPA. The predicted impact is therefore considered to be *no-change (imperceptible) – slight negative impact. No significant impacts are predicted. This potential impact is therefore screened out at this stage.*

Surface/storm water – construction phase
A Preliminary Construction & Environmental Management Plan (CEMP) has been produced by DOSA (2025c). This sets out the measures to be implemented during construction, to minimize impacts upon the surrounding environment. The measures are considered best practice and standard on a construction site. They are also considered adequate to address the potential for impacts of unattenuated surface/storm water on the Douglas Estuary and Cork Harbour SPA. The predicted impact is therefore considered to be *no-change (imperceptible) – slight negative impact. No significant impacts are predicted. This potential impact is therefore screened out at this stage.*

Foul water
The Annual Environmental Report for Cork City WWTP D0033 (Irish Water, 2023) shows that the WWTP was non-compliant in relation to BOD and Total Nitrogen. However, the annual report does state that ambient monitoring of transitional and coastal receiving waters indicates that discharge from the WWTP does not have an observable negative impact on water quality or the WFD (Water Framework Directive) status of the receiving waters (Uisce Eireann, 2023). The EPA licence profile for the WWTP (https://leap.epa.ie/licence-profile/D0033) also shows four incidents of complaint during 2024 including fish kills and an uncontrolled release. Cork WWTP has adequate capacity, but clarity should be sought by the Planning Authority that the proposed development, in combination with other development proposals that will link to this WWTP, will have no impact on the WWTP meeting its emission limit values (ELVs). Such clarification will ensure no significant impacts upon Cork Harbour SPA or Great Island Channel SAC.

(f) Excavation requirements (Construction phase)
Development of the site will require some excavations. A Preliminary Construction & Environmental Management Plan (CEMP) has been produced by DOSA (2025c). This sets out the measures to be implemented during construction, to minimize impacts upon the surrounding environment. The measures are considered best practice and standard on a construction site. They are also considered adequate to address the potential for impacts on the Douglas Estuary and Cork Harbour SPA. The predicted impact is therefore considered to be *no-change (imperceptible). No significant impacts are predicted. This potential impact is therefore screened out at this stage.*

(g) Transportation requirements

This project will result in a local, short-term increase in construction traffic associated with a re-development of this nature.

(h) Duration of operation

A permanent development.

(i) *Other –*

Ex site impacts – Waterbird species listed for a SPA may at times use habitats situated within the immediate hinterland of the SPA or in areas outside of the SPA but ecologically connected to it. The reliance on these habitats will vary from species to species and from site to site. Significant habitat change or increased levels of disturbance within these areas could result in the displacement of one or more of the listed waterbird species from areas within the SPA, and/or a reduction in their numbers.

Based on expert knowledge, the species listed for Cork Harbour SPA are highly unlikely to utilise the habitats within the proposed site. While certain SCI species e.g. Oystercatcher and Black-tailed Godwit are known to forage terrestrially, this is generally within areas close to wetlands and with good connectivity between the wetland and the terrestrial foraging area. The main reason for no impacts however, is that the existing habitats within the site i.e. long, rank grass, renders the site unsuitable for foraging waterbirds. In addition, the fully enclosed nature (by treelines) makes the site unsuitable as foraging waterbirds generally require good sightlines to view potential predators. *No (significant impacts) are predicted. This potential impact is therefore screened out at this stage.*

Flood Risk – A Flood Risk Assessment (FRA) was carried out for the proposed development (Arup, 2025). In the Cork City Development Plan 2022-2028, the site is within Flood Zone C, outside of Flood Zones A and B. This means that the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). However, as the site is defined as being within the 100-year floodplain, it is therefore classified as being within Flood Zone A (Arup, 2025); different to the classification in the Cork City Development Plan. Key conclusions of the FRA are as follows:

- The proposed development site lies within the defended area of the Douglas Flood Relief Scheme. It is defended to a level equivalent to the Q100 event (100-year flood) with an additional allowance for freeboard which is generally set at 0.5 m across Douglas.
- The risk of fluvial flooding to the site is limited to design exceedance fluvial events and possible climate change scenarios which may lead to overland flow along Churchyard Lane (Arup, 2025). In such an event the risk of ingress to the site will be managed by ensuring the ground levels at the pedestrian entrances are set c. 200 mm above the existing road levels; sufficient to ensure that water does not enter the site.
- The risk of tidal, groundwater and pluvial flooding to the site is very low.
- There is no off-site impact associated with the development and access and egress routes to the development will be maintained at all times via the Carrigaline Road.
- The site is classified as Flood Zone A and a Justification Test for the development has therefore been undertaken. It is considered that the proposed development satisfies all the criteria of the development management Justification Test and that the risks relating to flooding will be managed to acceptable levels and therefore fully comply with DoEHLG/OPW and Cork City Council planning guidelines.

No (significant impacts) are predicted. This potential impact is therefore screened out at this stage.

IAS species – where IAS species occur within the ZOI of a construction site then there is a potential for these deleterious species to be spread into the surrounding environment if measures to prevent their spread are not incorporated into site management. Japanese Knotweed, a high impact IAS species, is known to occur within the site. It has been subject to survey, and a management plan has been prepared by O'Donovan Agri (2024). Given that the location of the plants will constrain development of the site, and that if planning permission is granted then the removal of the plants is time sensitive, it has been agreed to manage this IAS species by recovery and disposal off-site (O'Donovan Agri, 2024). Note that a herbicide treatment was also applied to the plants during

November 2024. Given careful adherence to the management measures, including biosecurity measures, as detailed in the management plan, Japanese Knotweed should be able to be successfully eradicated from the site. Overall, this should result in no determinable negative impacts and be a *moderate positive impact upon the site and local ecology.* In addition to Japanese Knotweed, the following IAS species also occur on site: Cherry Laurel, *Clematis vitalba*, Sycamore, Butterfly Bush, Montbretia sp. and Winter Heliotrope. These species have the potential to cause negative impacts upon the site and local ecology into the future. Management measures have been formulated and are provided in Appendix 4 of Limosa Environmental (2025). These measures will be incorporated into site landscaping and maintenance proposals as standard. In terms of downstream effects on Natura 2000 sites, n*o (significant impacts) are predicted. This potential impact is therefore screened out at this stage.*
Describe any likely changes to the site as a result of: (a) Reduction of habitat area, (b) disturbance to key species, habitat or species fragmentation, (c) reduction in species density, (d) changes in key indicators of conservation value or climate change.
As above.
Describe any likely impacts on the Natura 2000 site as a whole in terms of: (a) Interference with the key relationships that define the structure of the site, and (b) Interference with key relationship that define the function of the site.
As above.

5.3 Cumulative impacts

Plans concerning the Douglas area

- Cork City Development Plan 2022-2028.
- The Kinsale Road to Douglas Sustainable Transport Corridor (STC K) - commences close to the Bull McCabe's pub on the eastern side of the Ballycurreen Road junction with the Kinsale Road (N27). The STC K proceeds on Ballycurreen Road to Grange Road and Donnybrook Hill. Footpath, cycle track, bus lane, and general traffic lanes are provided at appropriate locations.
- Cork Metropolitan Area Transport Strategy (CMATS) – large investment in transport including BusConnect routes proposed for Douglas Village.
- Douglas East West Link - the scheme involves the design and construction of a new link road over the Ballybrack Valley. The proposed link road will connect the R609 Carrigaline Road and the R851 Donnybrook Hill Road. The scheme will involve approximately 82m span bridge constructed at height over the Ballybrack Valley, upgrading of the Donnybrook Hill and Grange Road junction from a T junction to a 4-way junction and the creation of a new T junction on the Carrigaline Road with the new bridge.

Projects - Part 8

- The Scairt Cross proposed development - comprising the construction of a residential development of 54 no. dwelling units, July 2024.
- Douglas Street, White's Street and Mary's Street - the project aims to improve the public realm, encourage active travel and facilitate economic activity in the Douglas Street area.

Projects - Planning applications

A search of Cork City Council's online planning enquiry database was undertaken to identify other planning applications dated within three years of the 1st December 2024, that are proximal or within the Douglas area (searches under the location 'Douglas'). This search yielded 200 planning applications which were reviewed individually. The majority of these applications relate to the construction of

single or small-scale private domestic dwellings, or alterations to same. Notable larger applications include the following:

- ABP Ref. 307041-20 - permitted SHD (under construction) 449 no. residential scheme (Glenveagh Homes Ltd).
- ABP Ref. 304367-19 - permitted SHD (under construction) 472 no. residential scheme (Cairn Homes Properties Ltd).
- Cork County Council, ABP Ref. HA0053 & MA0014 - permitted M28 Cork to Ringaskiddy Motorway Scheme, commenced.
- Planning Ref 24/42632 - Large-Scale Residential Development (LRD) at Castletreasure, Moneygurney and Maryborough (townlands), Douglas, Cork. 58 residential units.
- Planning Ref 24/43489 – Large Scale Residential development (LRD) comprising the construction of 108 residential units.
- Planning Ref 24/42645 - Permission for development on this site of c.1.98 hectares on lands located at South Douglas Road, Cork. The development will consist of a residential and creche development comprising: 93 no. residential units (2 no. semi-detached units, 48 no. townhouses, 11 no. mews units (comprising 9 no. mews houses and 2 no. mews apartments) and 32 no. duplexes (comprising 17 no. duplex houses and 15 no. duplex apartments) (with terraces and private open space, where relevant).
- Planning Ref 2442647 - Permission for development on a site of c. 0.7 hectares on lands located at South Douglas Road, Cork. The development will consist of a residential development comprising: 20 No. residential units (2 No. semi-detached units, 3 No. detached units, 11 No. mews units (comprising 9 No. mews houses and 2 No. mews apartments), and 4 No. duplexes (comprising 2 No. duplex houses and 2 No. duplex apartments)) (with terraces and private open space, where relevant).

Wastewater treatment and cumulative considerations

The Annual Environmental Report for Cork City WWTP D0033 (Irish Water, 2023) shows that the WWTP was non-compliant in relation to BOD and Total Nitrogen. However, the annual report does state that ambient monitoring of transitional and coastal receiving waters indicates that discharge from the WWTP does not have an observable negative impact on water quality or the WFD (Water Framework Directive) status of the receiving waters (Uisce Eireann, 2023). The EPA licence profile for the WWTP (https://leap.epa.ie/licence-profile/D0033) also shows four incidents of complaint during 2024 including fish kills and an uncontrolled release. Therefore, while Cork WWTP has capacity, clarity should be sought that the proposed development, in combination with other development proposals that will link to this WWTP, will have no impact on the WWTP meeting its emission limit values (ELVs).

Flood Risk

A Flood Risk Assessment (FRA) was carried out for the proposed development (Arup, 2025). In the Cork City Development Plan 2022-2028, the site is within Flood Zone C, outside of Flood Zones A and B. This means that the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). However, as the site is defined as being within the 100-year floodplain, it is therefore classified as being within Flood Zone A (Arup, 2025); different to the classification in the Cork City Development Plan.

Key conclusions of the FRA are as follows:

- The proposed development site lies within the defended area of the Douglas Flood Relief Scheme. It is defended to a level equivalent to the Q100 event (100-year flood) with an additional allowance for freeboard which is generally set at 0.5 m across Douglas.
- The risk of fluvial flooding to the site is limited to design exceedance fluvial events and possible climate change scenarios which may lead to overland flow along Churchyard Lane (Arup, 2025). In such an event the risk of ingress to the site will be managed by ensuring the ground levels at the pedestrian entrances are set c. 200 mm above the existing road levels; sufficient to ensure that water does not enter the site.
- The risk of tidal, groundwater and pluvial flooding to the site is very low.
- There is no off-site impact associated with the development and access and egress routes to the development will be maintained at all times via the Carrigaline Road.
- The site is classified as Flood Zone A and a Justification Test for the development has therefore been undertaken. It is considered that the proposed development satisfies all the criteria of the development management Justification Test and that the risks relating to flooding will be managed to acceptable levels and therefore fully comply with DoEHLG/OPW and Cork City Council planning guidelines.

Conclusion

Potential cumulative effects largely concern construction/operational related surface water and foul effluent inputs, where qualifying interests associated with Cork Harbour SPA and Great Island Channel SAC could be subject to in-combination impacts through hydrological or water quality impacts such as increased siltation, increased nutrient loading, and contaminated run-off arising from the developments. Assuming that all local developments submitted to Cork City Council Planning Authority closely adhere to standard environmental practices regarding soil and water management during construction and operational phases, and given adequate compliance of Cork City (Carrigrennan WWTP), then significant adverse cumulative effects are considered unlikely upon the relevant Natura 2000 sites.

6.0 AA Screening Conclusions

Following the examination of relevant information, and assessment of potential impacts, this report concludes that significant negative impacts upon Cork Harbour SPA and Great Island Channel SAC can be ruled out at screening stage.

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Appendix 1

Ecological Evaluation and Ecological Impact Assessment (EcIA)

Ecological Impact Assessment (EcIA) process has three main steps:

1. Ecological evaluation – this step consists of evaluating each ecological resource (e.g. habitat, population, or species) within the zone of influence (area to be affected) using the criteria outlined in Table 1a (based on a geographic hierarchy of importance). Each ecological resource is given an evaluation value (ranking) as described in Table 1b.
2. Impact (Affect) prediction - based on information provided on the proposed project/development, this step aims to identify all direct and indirect impacts that may affect the ecological features in the zone of influence, and wider area. Table 1c gives impact terminology as per the EPA (2022).
3. Assessment of the magnitude of impact - impact magnitude refers to the 'size' or 'amount' of an impact/ affect (IEEM, 2006; EPA, 2022). The magnitude of an impact will depend on the nature and sensitivity of the ecological features and will be influenced by intensity, duration (temporary/permanent), timing, frequency and reversibility of the potential impact (CIEEM 2018). Levels of impact magnitude are given in Table 1d. Magnitude terminology is based on EPA (2003) while the rationale for assigning level of significant impact follows CIEEM (2018). Importantly, this step aims to identify the impacts which may be significant upon '*important ecological features*' (CIEEM, 2018).

Table 1a. Criteria for ecological evaluation

Evaluation criteria	Definitions and Notes
Site designations	Designated areas for conservation are areas that are designated under national and/or European laws in order to conserve habitats and species of national or international conservation importance. These include: • Natural Heritage Areas (NHA): a national designation given legal status by the Wildlife Amendment (2000) Act. • Special Areas of Conservation (SAC): areas considered of European and national importance whose legal basis is the EU Habitats Directive (92/43/EEC), transposed into Irish law through the European Union (Natural Habitats) Regulations, 1997. • Special Protection Areas (SPA): sites of conservation importance for birds whose legal basis is the EU Birds Directive (209/147/EC). • Wildfowl Sanctuary: designated under the 1976 Wildlife Act. • Ramsar Site: European designation based on the Ramsar Convention, 1984.
Species designations/criteria	Certain legislation refers directly to species/populations (e.g. annexed species): • Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora. • Council Directive 79/409/EEC on the Conservation of Wild Birds ('Birds Directive'). • Bern Convention on the Conservation of European Wildlife and Natural Habitats. • The Wildlife Act (1976) and the Wildlife (Amendment) Act (2000). • Birds of Conservation Concern in Ireland (Colhoun & Cummins, 2013). • Red Data Books (e.g. Wyse-Jackson et al. 2016) • Flora (Protection) Order, 2022.
Size	Includes both size of habitats (area) and population size of individual species and is intrinsically linked to other criteria such as rarity and fragility (below). Habitats: considers minimum viable size of habitats, habitat heterogeneity, species/area relationships, home-range size. Populations: considers concept of minimum viable population size (population viability), national and local population trends, extinction risk.

Diversity / Biodiversity	At a minimum species richness (number of species). Biodiversity defined as 'the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part (Convention on Biological Diversity, 1993). Must be considered in terms of the habitat type - some habitats have low species diversity by nature. Keystone species deserve special attention – defined as a species whose removal would induce significant changes within the food web (Begon et al. 1996).
Rarity	Applies to habitats and to species. The degree to which a habitat or community approximates a natural state. The degree to which the site is a good example of the habitat types. National, county, local scales e.g. within 10-km^2 squares.
Naturalness	The degree of modification by human intervention. Habitats that are least modified are generally regarded more highly (Treweek, 1999). Also considers the extent to which the habitat is free of alien species.
Representativeness/ Typicalness	How well the area represents habitats or vegetation types on a wider scale (Treweek, 1999); 'degree of representivity of the natural habitat type on the area' (Council Directive 92/43/EEC; Habitats Directive).
Fragility	The degree of sensitivity of habitats, communities and species to environmental change.
Stability/Resistance/Resilience	Habitats and species. Stability refers to the ability of an ecosystem to maintain some form of equilibrium in the presence of a disturbance. Resilience is defined as the ability and speed with which a community returns to its former state following a disturbance. Resistance is defined as the ability of a community to avoid displacement by a disturbance (Begon et al. 1996).
Other criteria include:	
Recorded history (scientific value), Potential value, Educational value, Amenity value.	

Table 1b. Ecological Evaluation

Ecological value	**Examples**
A International	Sites designated as Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar Sites. Sites meeting criteria for international designation.
B National	Sites designated as Natural Heritage Areas (NHA) or sites qualifying for designation. Undesignated sites containing good examples of Annex I habitats. Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Sites supporting viable populations of Red Data Book species (nationally rare species).
C Regional	Undesignated sites that are prime examples of the habitat (natural or semi-natural) type, exhibit high biodiversity or support important communities/assemblages of species within the region. Sites exhibiting habitats that are scarce within the region.

	Sites that support nationally scarce plant species (recorded from less than 65 10-km^2 squares, unless they are locally abundant). Sites that hold regionally scarce vertebrate species.
D High Local	Sites that are prime examples of the habitat type, exhibit high biodiversity or important communities/assemblages of species within the local area. Habitats that are considered important in a local context – e.g. semi-natural habitats within an urban setting, hedgerows and treelines that serve as important ecological corridors within an otherwise modified landscape. Sites exhibiting habitats/species that are generally scarce within the local area.
E Moderate Local	Sites that exhibit good quality semi-natural habitats. Hedgerows and treelines.
F Low Local	Artificial or modified habitats considered of low value for wildlife.

Adapted from CIEEM, 2018; IEEM, 2006; NRA, 2009; Regini, 2000.

Table 1c. Description of effects as per the EPA (2022):

Positive Impact	A change which improves the quality of the environment.
Negative Impact	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Neutral Impact	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Indirect Effects/ Secondary Effects	Impacts not directly associated with the project, often produced away from the project site or because of a complex pathway.
Cumulative Effects	The addition of many small impacts to create one larger, more significant, impact.
Do-Nothing Effects	The environment as it would be in the future if no development was carried out.
Worst-Case Effects	Impacts arising from a development in the case where mitigation measures substantially fail.
Indeterminable Effects	When the full consequences of a change in the environment cannot be described.
Irreversible Effects	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
Residual Effects	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
Synergistic Effects	Where the resultant impact is of greater significance than the sum of its constituents.

Table 1d. Significance of Effects (terminology based on EPA 2022; CIEEM 2018).

Impact Magnitude	**Definition / Rationale**
Imperceptible	An effect capable of measurement but without noticeable consequences.
Not Significant	An effect that causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect that has noticeable consequences without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

Significant Effects	A significant effect is one which undermines the conservation objectives for 'important ecological features' (CIEEM, 2018). In broad terms, significant effects encompass impacts upon the structure and function of a defined site, its habitats and species and their conservation status; or in other words on site integrity**. EPA (2022) measures these effects as those that significantly alter a sensitive aspect of the environment.
Very Significant Effects	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect that obliterates sensitive characteristics.

** Integrity is defined as 'the integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

Table 1e. Quality of Effects (terminology based on EPA, 2022)

Impact Magnitude	**Definition / Rationale**
Positive Effects	A change which improves the quality of the environment (e.g. increasing species diversity, improving reproduction capacity or by removing nuisances).
Neutral Effects	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative Adverse Effects	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; damaging health or property or by causing nuisance).

Appendix 2

SITE NAME: CORK HARBOUR SPA
SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica, Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis diversicolor* and *Corophium volutator.* Green algae species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Some shallow bay water is included in the site. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (1,896) and Redshank (2,149) - all figures given are five year mean peaks for the period 1995/96 to 1999/2000. At least 18 other species have populations of national importance, as follows: Little Grebe (57), Great Crested Grebe (253), Cormorant (521), Grey Heron (80), Shelduck (2,009), Wigeon (1,791), Teal (1,065), Pintail (57), Shoveler (103), Red-breasted Merganser (121), Oystercatcher (1,809), Golden Plover (3,342), Grey Plover (95), Lapwing (7,569), Dunlin (9,621), Bar-tailed Godwit (233) and Curlew (2,237). The Shelduck population is the largest in the country (over 10% of national total). Other species using the site include Mute Swan (38), Whooper Swan (5), Pochard (72), Gadwall (6), Mallard (513), Tufted Duck (64), Goldeneye (21), Coot (53), Ringed Plover (73), Knot (26), Greenshank (46) and Turnstone (113). Cork Harbour is an important site for gulls in winter and autumn, especially Black-headed Gull (3,640), Common Gull (1,562) and Lesser Black-backed Gull (783), all of which occur in numbers of national importance. Little Egret and Mediterranean Gull, two species which have recently colonised Ireland, also occur at this site.

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, there are at least 20 species that have wintering populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary. 21.11.2014

SITE NAME: GREAT ISLAND CHANNEL SAC
SITE CODE: 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest
of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):
[1140] Tidal Mudflats and Sandflats
[1330] Atlantic Salt Meadows
The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis* diversicolor and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva lactua* and Enteromorpha spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially at Rossleague and Belvelly.
The saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).
The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck is the most frequent duck species with 800-1,000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance.
The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species. Furthermore, it contains large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site falls within Cork Harbour Special Protection Area, an important bird area designated under the E.U. Birds Directive. While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments. The site is of major importance for the two habitats listed on Annex I of the E.U. Habitats Directive, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna.

Appendix 3

Limosa Environmental was established by **Dr Lesley J Lewis** and associates in 2004 and has since amassed a range of experience across both the private and public sectors. Our aim is to provide a first-class professional service at competitive prices in line with national and international best practice and adhering to the codes of conduct laid down by the Chartered Institute of Ecology and Environmental Management. We can provide a wide range of ecological and environmental services, bringing together teams of professionally qualified, accredited and specialist ecologists and environmental scientists to meet the specific requirements of each individual project. We hold current Professional Indemnity and Public Liability Insurances.

Relevant Experience in relation to Appropriate Assessment: Dr Lesley J Lewis has over 20 years of experience as a consultant ecologist.

Consultant ecologist to planning departments – Lesley has recently been engaged as a consultant ecologist by planning authorities including Dublin City Council and Cork City Council. Lesley is also on a panel of expert ecological consultants contracted by An Bord Pleanála. In this work Lesley reviews ecological reporting (AA/EIAR) and advises on planning opinions and decisions.

Recent Experience Ecological Impact Assessment/Appropriate Assessment:
Community Centre, Baldoyle, Co. Dublin (2023, Fingal County Council), private development Crookhaven, Co. Cork (2023, private client), private development Carrigtwohill, Co. Cork (2023, private client), Housing project Macroom (2023, private client), Lidl development in Killorglin (2022, Lidl Ireland), Appropriate Assessment of Westfields Wetlands Management Plan (2023 Limerick City and County Council), development of industrial units, Carrigtwohill, Cork (2023 private client), development of a warehouse, Macroom, Cork (2023 private client), development of a Data Centre, Little Island, Cork (2022 private client), private development Baltimore, Co. Cork (2021, private client), light industrial/warehousing development, Little Island, Cork (2021, private client), mixed-use development Carrigaline, Co. Cork (2021, Lidl Ireland), Youghal Front Strand Flood Mitigation Works (2020, Cork County Council), Mixed-use development (2020, Mallow, Co. Cork, Lidl Ireland), development of a light industrial park, Watergrasshill, Cork (2019, private client); Re-development of Carrignacurra Castle, Co Cork (2019, private client), private development Baltimore Co. Cork (2019, private client), bus shelter/accessible stop program – East Cork (2019, Cork County Council), development of a light industrial park, Little Island, Cork (2019, private client); installation of a zip-line on Bull Rock (2019, BirdWatch Ireland), development of a light industrial park/warehousing, Little Island, Cork (2019, private client); development of a light industrial park/warehousing, Watergrasshill, Co. Cork (2019, private client); repair works to sea walls Cork Harbour (2019, Cork County Council); housing development at Newmarket (2018, private client), housing development at Toonsbridge, Macroom (2018, private client), road re-surfacing at Toonsbridge, Macroom, Co. Cork (2018, for Cork County Council), development of pedestrian footbridges Castlemartyr, Co. Cork (2018, Cork County Council), private development Castletownbere Co. Cork (2018, private client), residential/business development Clonakilty, Co. Cork (2018, private client), re-development of site of former Duhallow Park Hotel (2018, private client), housing development (50 houses) Carrigtwohill, Co. Cork (2018, private client), road re-surfacing at Toonsbridge, Macroom, Co. Cork (2017, for Cork County Council), development of a discount foodstore Fermoy, Cork (2017, Lidl Ireland), housing development (47 houses), Cobh, Co Cork (2017, private client), extension to light industrial unit, Little Island, Cork (2017, private client), development of a discount foodstore Douglas, Cork (2017, Lidl Ireland), works to sea walls at Rosscarbery (2017 Cork County Council), development of a footbridge at Killeagh Co Cork (2017, Cork County Council), development of an eco-campsite in West Cork (2016, private client), Rosscarbery flood defence works (2016, Cork County Council), development of Lidl stores at Mallow and Kanturk (2016, Lidl Ireland).