

Natura Impact Statement

Residential Development

Dromdarrig

Mungret

Co. Limerick

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Report prepared for Development at Dromdarrig

Mungret Co. Limerick

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Appendices

Appendix A: Appropriate Assessment Screening Report (AASR)
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1 Introduction

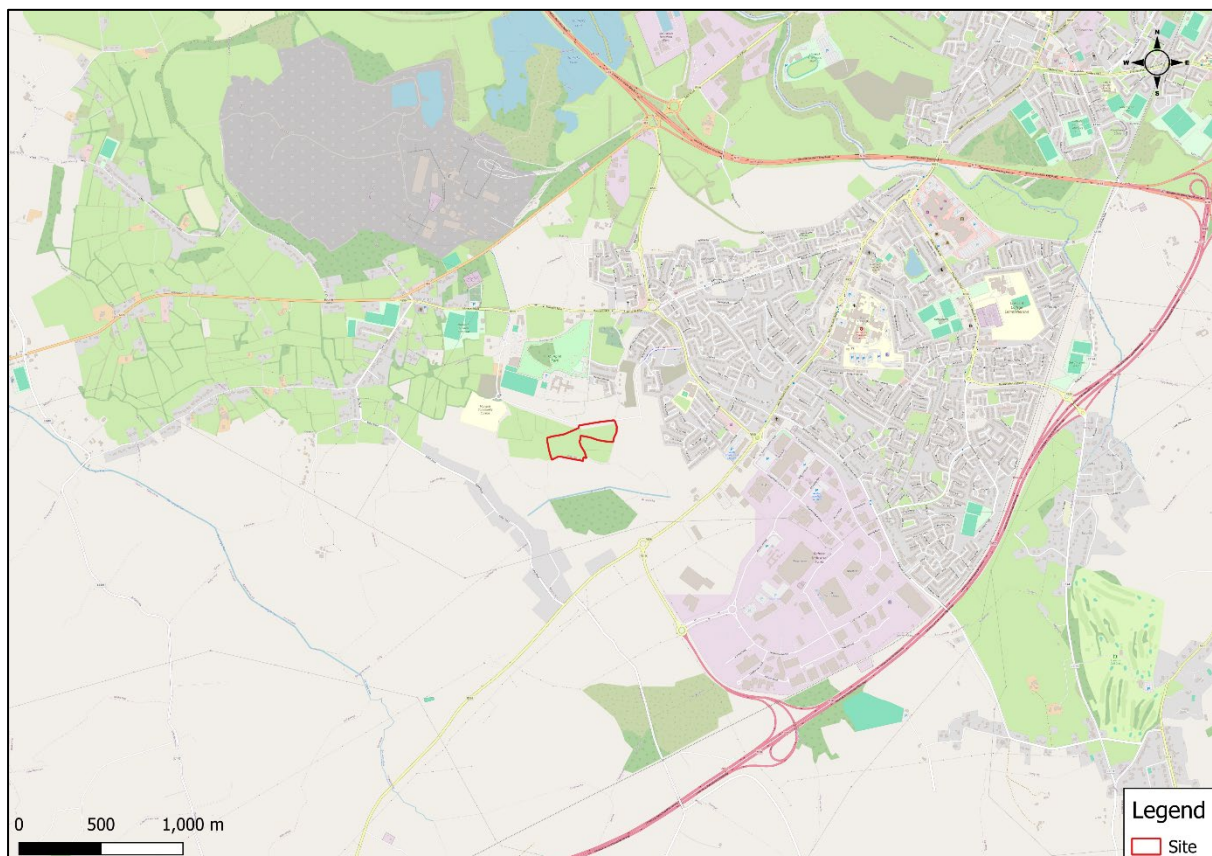
This Natura Impact Statement (NIS) prepared by Greenleaf Ecology provides information in support of the Appropriate Assessment (AA), in respect of the proposed Residential Development, Dromdarrig, Mungret, Co. Limerick (hereafter referred to as the proposed development). An Appropriate Assessment Screening Report (AASR) was previously undertaken in respect of this development which concluded that likely significant effects of the scheme on a European site could not be ruled out. A copy of the AASR is enclosed within Appendix A of this report.

This report provides information and appraises the potential for the proposed development, alone or in combination with other plans and projects, to have an adverse effect on the integrity of European sites in view of best scientific knowledge and the conservation objectives of the sites. European sites are those identified as sites of European Community importance designated as Special Areas of Conservation (SAC) under the Habitats Directive (92/43/EEC) or as Special Protection Areas (SPA) under the Birds Directive (79/409/ECC as codified by Directive 2009/147/EC).

The proposed development is described in Section 2 of this report and the location of the proposed site is illustrated in Figure 1-1.

This report has been updated in response to the request for further information from Limerick County Council (Ref: 2561231).

Figure 1-1: Site Location



1.1 Statement of Competence

This NIS has been prepared by Karen Banks. Karen is an ecologist with 19 years' experience in the field of ecological assessment. She holds a BSc (Hons) in Environment and Development from Durham

University and is a full member of the Chartered Institute of Ecology and Environmental Management. Karen has extensive experience in ecological field survey and impact assessment. In her career as an ecologist Karen has completed reports to inform Appropriate Assessments (AA) covering the transport, energy and land use sectors, with work including assessment of Plans at the national, regional and local level, and numerous AAs of projects.

1.2 Findings of the Screening for Appropriate Assessment

The AASR (Appendix A) considered the potential for likely significant effects on European sites within 15km of the proposed development. Source – pathway – receptor dynamics were assessed for the European sites within 15km of the proposed development and potential connectivity was identified for 2 no. European sites: Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA. The AASR found that the proposed development will require site clearance, earthworks, drainage and construction of the proposed residential development. There is potential for run-off of deleterious substances from these works to the surrounding environment. Potential conduits to Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA include movement of groundwater and overland flow via preferential flow paths to Loughmore Common Turlough and Loughmore Canal, which eventually drains into these European sites. Applying the precautionary principle, there is potential for likely significant effects on the aquatic QI species sea lamprey, brook lamprey and river lamprey and the QI habitat Water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation [3260] for Lower River Shannon SAC as a result of degradation of water quality. An assessment of the potential for likely significant effects on other QI species and habitats for Lower River Shannon SAC is provided within the AASR (Appendix A). In view of the nature, size, scale and location of the proposed works the potential slight, short-term localised reduction in water quality within the Mague Estuary Lower River Shannon SAC is not likely to result in significant impacts on the foraging resources for the SCI for River Shannon and River Fergus Estuaries SPA. No potential for disturbance impacts on SCI within River Shannon and River Fergus Estuaries SPA or ex-situ disturbance impacts were identified (see Appendix A).

1.3 Study Area and Zone of Influence

Determination of this project's Zone of Influence (Zoi) was achieved by assessing all elements of the proposed project against the ecological receptors within the proposed project footprint, in addition to all ecological receptors that could be connected to and subsequently impacted by the proposed project through impact pathways. To this end, the zone of influence extends outside of the proposed development works footprint to include ecological receptors connected to the project through overlap / intersection, proximity and connectivity through features such as watercourses.

As described in Section 1.2, the AASR identified the potential for a slight, short term, localised reduction in water quality within the Mague Estuary, which forms part of Lower River Shannon SAC (Site Code: 002165) (for location see Figure 4-1). No potential for likely significant effects on any other European site was identified. Therefore, the study area for this NIS comprises the proposed development footprint and connecting hydrological and hydrogeological pathways to Lower River Shannon SAC.

1.4 NIS Objectives

This NIS considers impacts to Lower River Shannon SAC. As described in Section 1.2, in the absence of mitigation, and applying the precautionary principle, there is potential for likely significant effects on the aquatic QI species sea lamprey, brook lamprey and river lamprey and the QI habitat Water courses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation for Lower River Shannon SAC as a result of degradation of water quality. Therefore, this study focuses on

the suitability and importance of the study area for the aquatic species sea lamprey, brook lamprey and river lamprey and habitat Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium vegetation designated as part of this European Site. Potential impacts, such as the release of water borne pollutants to Lower River Shannon SAC are considered in this assessment.

2 Project Description

Permission for the following: Large-scale Residential Development (LRD) comprising of the construction of 172 no. residential units, 1 no. creche, 3 no. ESB substations and all associated development works including footpaths, cycle paths, car and bicycle parking, drainage, fencing, bicycle and bin stores, lighting and landscaping/amenity areas at Dromdarrig, Mungret, Co. Limerick.

Access to the site will be via 2 no. new vehicle access points from the existing Mungret Park Road.

2.1 Surface Water

The proposed surface water management is described in the Hydrology and Hydrogeology Assessment (IE Consulting, 2026) and the Surface Water Layout Drawing (25114-OSL-11-DR-C-11).

It is proposed that all surface water runoff from the proposed development site will be infiltrated towards the south-western corner of the site.

Where the infiltration capacity is exceeded or fails, provision has been made for a pumping station to operate.

From the proposed Surface Water Drainage Layout it is understood that the proposed development site will be divided into five sub-catchments. Drainage will be directed from sub-catchment 1 in the east towards sub-catchment 5 in the south-west, via four proposed attenuation tanks, until reaching a proposed deep infiltration trench located in sub-catchment 5 in the south-western corner of the site. A standalone surface water sewer network will be provided (see blue arrows in Drawing 25114-OSL-11-DR-C-11).

The proposed SuDS strategy comprises Nature Based SuDS such as bioretention areas, bioswales (green areas), rain gardens and tree pits; as well as Infiltration System SuDS such as unlined permeable paving, infiltration trenches and unlined underground attenuation tanks; as well as Proprietary Treatment Systems such as petrol/oil separators will be included.

2.2 Foul Water Network

Wastewater will be collected via a main wastewater drainage network located around the proposed development and shall discharge by gravity to the proposed Type 3 Wastewater Pump Station (WwPS) situated to the west of the site. A rising main shall pump effluent to a standoff manhole to the north of the site adjacent to the southern edge of the LIHAF road before discharging by gravity to the existing 225mm dia. wastewater sewer installed on the LIHAF road.

Irish Water have confirmed that connection is feasible with upgrades comprising an extension of the network by approximately 390m.

3 Methodology

3.1 Legislative Background for Appropriate Assessment

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as “The Habitats Directive”, provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. As defined under the Habitats Directive (Article 3(1)) Natura 2000 is a European ecological network composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range.

In Ireland, these sites are designated as European sites and include SPAs, established under the EU Birds Directive (79/409/EEC, as codified by 2009/147/EC) for birds and SACs, established under the Habitats Directive 92/43/EEC for habitats and species.

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) as amended. In the context of the Proposed Development, the governing legislation is Part XAB of the Planning and Development Act (as amended).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European sites. Article 6(3) establishes the requirement for Appropriate Assessment (AA):

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

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in this report to inform the assessment has had regard to the following legislation and guidance listed in Section 2.2:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (also known as the ‘Habitats Directive’);
- Council Directive 2009/147/EC on the conservation of wild birds, codified version, (also known as the ‘Birds Directive’);
- The European Communities (Birds and Natural Habitats) Regulations 2011 to 2015; and
- The Planning and Development Act (as amended).

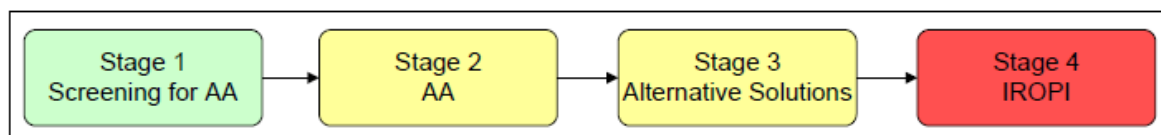
3.2 Stages of Appropriate Assessment

Article 6(3) & (4) of the Habitats Directive defines a stepwise procedure where plans or projects are considered. The Department of the Environment, Heritage and Local Government guidelines (DoELHG, 2009, rev 2010) outlines the European Commission's methodological guidance (EC, 2002) promoting a four-stage process to complete the AA and outlines the issues and tests at each stage. An important

aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages are summarised diagrammatically in Figure 3-1. Stages 1-2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of the Article 6(3) Assessment or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Figure 3-1: Four stages of appropriate assessment¹



Stage 1 Appropriate Assessment

Stage 1 AA comprises the Screening process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) as follows:

- i. whether a plan or project (in this instance the proposed project) is directly connected to or necessary for the management of the European sites, and
- ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on the European sites in view of their conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA).

Stage 2: Appropriate Assessment

The aim of the stage 2 AA process is to identify any adverse impacts that the plan or project might have on the integrity of relevant European sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed that would avoid, reduce or remedy any such negative impacts and the plan or project can be amended and / or conditions and restrictions imposed. If it is considered that mitigation measures will not be able to satisfactorily reduce potential adverse impacts on a Natura 2000 site, then an assessment of alternative solutions is considered in Stage 3. This is then followed by Stage 4 in the event that adverse impacts remain, and the proposed activity or development is deemed to be of Imperative Reasons of Overriding Public Interest (IROPI), allowing an assessment of compensatory measures to be considered.

This NIS informs Stage 2 of the AA process and determines if the project is likely to affect the integrity (structure and function) of European sites. As the screening process identified that potential impacts to Lower River Shannon SAC are unknown, uncertain or cannot be ruled out without further assessment, then AA is required including the preparation of an NIS.

The NIS represents a detailed, targeted assessment of the nature and potential significance of direct and indirect impacts arising from the proposed project. An assessment of cumulative impacts (both from the project objectives, and other policies, plans and programmes) is also completed as part of

¹ IROPI – Imperative Reasons for Overriding Public Interest

the NIS. The NIS also incorporates standard best practice and mitigation measures to eliminate potential adverse impacts.

This NIS has been prepared having regard to the following guidance and legislation:

Guidance

- Department of the Environment, Heritage and Local Government (DoEHLG) (2009, rev 2010a), Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities.
- Department of the Environment, Heritage and Local Government (DoEHLG, 2010b), Department of Environment Heritage and Local Government Circular NPWS 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DoEHLG, 2010).
- EPA (2013) Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioners Manual. Environmental Protection Agency.
- European Commission (2018), Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2000a), Communication from the Commission on the Precautionary Principle, Office for Official Publications of the European Communities, Luxembourg.
- European Commission Notice Brussels C (2021) 6913 final 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (EC, 2021).
- European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission. Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2013), Interpretation Manual of European Union Habitats. Version EUR 28.
- European Commission (2006), Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities.

4 European Sites within Project Zone of Influence

As described in Section 1.2, the AASR [Appropriate Assessment Screening Report] identified the potential for likely significant effects on one European site, namely, Lower River Shannon SAC.

Table 4-1 details this European site and its proximity and connectivity to the proposed development. Figure 4-1 provides an illustration of the location of the proposed development in relation to Lower River Shannon SAC.

Table 4-1: Connectivity between Lower River Shannon SAC and the proposed development

European Site	Distance from Proposed Site (km) ²	Connectivity
Lower River Shannon SAC (002165)	2.2km	There is no direct connectivity. There is potential remote indirect connectivity via overland flow or movement of groundwater to Loughmore Common Turlough and Loughmore Canal, which drains to the Barnakyle watercourse and, in turn, Lower River Shannon SAC.

Figure 4-1: Map illustrating the location of the proposed development in relation to Lower River Shannon SAC



² Straight line distance

4.1 Summary of European Sites Relevant to the Stage 2 Appropriate Assessment

4.1.1 Lower River Shannon SAC (Site Code: 002165)

As described in the Standard Data Form ([N2K IE0002165 dataforms \(europa.eu\)](#)), this site is a very large, long site approximately 14 km wide and 120 km long, encompassing: the drained river valley which forms the River Shannon estuary; the broader River Fergus estuary, plus a number of smaller estuaries e.g. Poulmasherry Bay; the freshwater lower reaches of the Shannon River, between Killaloe and Limerick, plus the freshwater stretches of much of the Feale and Mulkear catchments; a marine area at the mouth of the Shannon estuary with high rocky cliffs to the north and south; ericaceous heath on Kerry Head and Loop Head; and several lagoons. The underlying geology ranges from Carboniferous limestone (east of Foynes) to Namurian shales and flagstones (west of Foynes) to Old Red Sandstone (at Kerry Head). The salinity of the system varies daily with the ebb and flood of the tide and with annual rainfall fluctuations seasonally.

The Lower River Shannon SAC contains many Annexed habitats, including the most extensive area of estuarine habitat in Ireland. A good range of Annexed species are also present, including the only known resident population of *Tursiops truncatus* in Ireland, all three Irish species of lamprey, and a good population of *Salmo salar*. A number of birds listed on the EU Birds Directive either winter or breed in this SAC. The Lower River Shannon SAC is internationally important for waterfowl with more than 50,000 individuals occurring in winter. Several species listed in the Irish Red Data Book are present, perhaps most notably the only known Irish populations of *Scirpus triquetus*.

4.1.1.1 Qualifying Interests

The importance of a site designated under the Habitats Directive is defined by its qualifying features or interests. Qualifying interests for any European site are listed on a pro forma, called the Natura 2000 standard data form, which forms the basis of the rationale behind designation, and informs the Conservation Management Plan for targeted management and monitoring of key species and habitats.

Qualifying interests for the Lower River Shannon SAC are given in Table 4-2, along with the conservation status and specific sensitivities and main threats relevant to each feature. Information on the conservation status for each habitat within the SAC was extracted from the Natura 2000 Standard Data Form on the Natura 2000 viewer at [N2K IE0002165 dataforms \(europa.eu\)](#). This information provides specific details on the conservation status of each habitat within the SAC. The environmental sensitivities have been derived from The Status of EU Protected Habitats and Species in Ireland³.

Table 4-2: Conservation Status and Main Threats to the Qualifying Interests of Lower River Shannon SAC

Annex I Habitat/Annex II Species	Conservation Status at Lower River Shannon SAC ⁴	Environmental Sensitivity/Main Threats (Ranked High to Medium)
[1110] Sandbanks which are slightly covered by sea water all the time	B= Good conservation status.	No pressures or threats noted
[1130] Estuaries	B= Good conservation status.	F20 Residential or recreational activities and structures generating marine pollution (excl.

³ NPWS (2019a) The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitats Assessments. Unpublished Report, National Parks and Wildlife Service and NPWS (2019b) The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished Report, National Parks and Wildlife Service.

⁴ Natura 2000 Standard Data Forms version date September 2018, accessed 17/09/2024

		marine macro- and micro-particular pollution (H) A28 Agricultural activities generation marine pollution (H) G16 Marine aquaculture generating marine pollution (H) I02 Other invasive alien species (other than species of Union concern) (H) XU Unknown pressure (M)
[1140] Mudflats and sandflats not covered by seawater at low tide	B= Good conservation status.	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H) A28 Agricultural activities generation marine pollution (H) G16 Marine aquaculture generating marine pollution (H)
[1150] *Coastal lagoons	B= Good conservation status.	J02 Mixed source marine water pollution (marine and coastal) (H) K04 Modification of hydrological flow (H) K02 Drainage (H) L01 Abiotic natural processes (e.g. Erosion, silting up, drying out, submersion, salinization (M) L03 Accumulation of organic material (M) C12 Extraction activities generating marine pollution (M) N04 Sea-level and wave exposure changes due to climate change (M)
[1160] Large shallow inlets and bays	A= Excellent conservation status.	F20 Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro-particular pollution (H) A28 Agricultural activities generating marine pollution (H) B23 Forestry activities generating pollution to surface or ground waters (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (H) G16 Marine aquaculture generating marine pollution (H)

		I02 Other invasive alien species (other than species of Union concern) (H) Xu Unknown pressure (M)
[1170] Reefs	A= Excellent conservation status.	G01 Marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (H) G03 Marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats (H)
[1220] Perennial vegetation of stony banks	A= Excellent conservation status.	F08 Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures) (H) C01 Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (M) E01 Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (M) F07 Sports, tourism and leisure activities (M) F09 Deposition and treatment of waste/garbage from household/recreational facilities (M) I02 Other invasive alien species (other than species of Union concern) (M)
[1230] Vegetated sea cliffs of the Atlantic and Baltic coasts	A= Excellent conservation status.	C01 Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell) (M) E01 Roads, paths railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (M) F07 Sports, tourism and leisure activities (M) F08 Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures) (M)

		I02 Other invasive alien species (other than species of Union concern) (M) N03 Increases or changes in precipitation due to climate change (M) N04 Sea-level and wave exposure changes due to climate change (M)
[1310] <i>Salicornia</i> and other annuals colonising mud and sand	C= Average or reduced conservation status.	I02 Other invasive alien species (other than species of Union concern) (M) A09 Intensive grazing or overgrazing by livestock (M)
[1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	B= Good conservation status.	A09 Intensive grazing or overgrazing by livestock (H) F07 Sports, tourism and leisure activities (H) A33 Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams) (M) A36 Agriculture activities not referred to above (M) F08 Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures) (M) I02 Other invasive alien species (other than species of Union concern) (M)
[1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	B= Good conservation status.	A09 Intensive grazing or overgrazing by livestock (H) A33 Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams) (M) A36 Agriculture activities not referred to above (M) A10 Extensive grazing or undergrazing by livestock (M)
[3260] Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	B= Good conservation status.	A26 Agricultural activities generating diffuse pollution to surface or ground waters (H) A25 Agricultural activities generating point source pollution to surface or ground waters (H)

		K04 Modification of hydrological flow (H) K05 Physical alteration of water bodies (H) F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (H) B23 Forestry activities generating pollution to surface or ground waters (M) F11 Pollution to surface or ground water due to urban run-offs (M) C05 Peat extraction (M) F13 Plants, contaminated or abandoned industrial sites generating pollution to surface or ground water (M) K01 Abstraction from groundwater, surface water or mixed water (M)
[6410] <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>)	B= Good conservation status.	A02 Conversion from one type of agricultural land use to another (H) A06 Abandonment of grassland management (e.g. cessation of grazing or of mowing) (H) A10 Extensive grazing or undergrazing by livestock (H) B01 Conversion to forest from other land uses, or afforestation (excluding drainage) (H) A14 Livestock farming (without grazing) (M) A31 Drainage for use as agricultural land (M)
[91E0] *Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	B= Good conservation status.	I02 Other invasive alien species (other than species of Union concern) (H) I04 Problematic native species (M) B09 Clear-cutting, removal of all trees (M) I05 Plant and animal diseases, pathogens and pests (M)
[1029] Freshwater Pearl Mussel <i>Margaritifera margaritifera</i>	B= Good conservation status.	A31 Drainage for use as agricultural land (H) B27 Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams) (H)

		F31 Other modification of hydrological conditions for residential or recreational development (H) A26 Agricultural activities generating diffuse pollution to surface or ground waters (H) B23 Forestry activities generating pollution to surface or ground waters (H) F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) C05 Peat extraction (M) F28 Modification of flooding regimes, flood protection for residential or recreational development (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F33 Abstraction of ground and surface waters (including marine) for public water supply and recreational use (M)
[1095] Sea Lamprey <i>Petromyzon marinus</i>	B= Good conservation status.	D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) N03 Increases or changes in precipitation due to climate change (H) A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M) Xo Threats and pressures from outside the Member State (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M)

[1096] Brook Lamprey <i>Lampetra planeri</i>	B= Good conservation status.	A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) B09 Clear-cutting, removal of all trees (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) F11 Pollution to surface or ground water due to urban run-offs (M) F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M)
[1099] River Lamprey <i>Lampetra fluviatilis</i>	B= Good conservation status.	D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) N03 Increases or changes in precipitation due to climate change (H) A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) E03 Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging) (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M)
[1106] Atlantic Salmon <i>Salmo salar</i> (only in fresh water)	A= Excellent conservation status.	A26 Agricultural activities generating diffuse pollution to surface or ground waters (H)

		G19 Other impacts from marine aquaculture, including infrastructure (H) K05 Physical alteration of water bodies (H) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change(H) A25 Agricultural activities generating point source pollution to surface or ground waters (M) B23 Forestry activities generating pollution to surface or ground waters (M) F12 Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) F28 Modification of flooding regimes, flood protection for residential or recreational development (M) G11 Illegal harvesting, collecting and taking (M) I02 Other invasive species (other than species of Union concern) (M) J01 Mixed source pollution to surface and ground waters (limnic and terrestrial) (H) J01 Mixed source pollution to surface and ground waters (limnic and terrestrial) (H) G20 Abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture (M) L06 Interspecific relations (competition, predation, parasitism, pathogens) (M)
[1349] Bottlenose Dolphin <i>Tursiops truncatus</i>	B= Good conservation status.	C09 Geotechnical surveying (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species (M)
[1355] Otter <i>Lutra lutra</i>	A= Excellent conservation status.	No pressures or threats noted

* denotes a priority habitat

4.1.1.2 Threats and Pressures to Lower River Shannon SAC

The Natura Standard Data Form for Lower River Shannon SAC identifies the most important threats and pressures (high and medium) on this site as detailed in Table 4-3.

Table 4-3: Negative Threats, Pressures and Activities with impacts to Lower River Shannon SAC

Threats and Pressures (Code) ⁵	Threat Type	Rank ⁶	Inside(i) / Outside (o) / Both (b)
F03.01	Hunting	L	i
B	Sylviculture, forestry	L	i
A08	Fertilisation	M	o
A04	Grazing	M	i
H04	Air pollution, air-borne pollutants	M	o
E01	Urbanised areas, human habitation	M	o
G01.01	Nautical sports	L	i
E03	Discharges	M	i
J02.01.02	Reclamation of land from sea, estuary or marsh	M	o
C01.03.01	Hand cutting of peat	L	i
J02.10	Management of aquatic and bank vegetation for drainage purposes	L	i
I01	Invasive non-native species	L	i
J02.12.01	Sea defence or coast protection works, tidal barrages	L	i
A08	Fertilisation	M	i
K02.03	Eutrophication (natural)	M	o
F01	Marine or freshwater aquaculture	L	i
E03	Discharges	M	o
D01.01	Paths, tracks, cycling tracks	L	i
C01.01.02	Removal of beach materials	L	i
J02.01.01	Polderisation	M	i

4.2 Conservation Objectives of European Site

Article 6.3 of the Habitats Directive and Part XAB of the Planning and Development Act (as amended) require that the impact of the project (either alone or in combination with other projects or plans) on the integrity of the European site is considered with respect to the conservation objectives of the site and to its structure and function. The European Commission guidance on Natura 2000 (MN2000) states that:

“The integrity of the site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site’s conservation objectives” (MN2000, Section 4.6.4).”

⁵ Threat code sourced from Natura 2000 data form and follows reference list provided on threats, pressures and activities for European sites

⁶ Threat, pressure and impact ranking provided on Natura 2000 data form: H – High, M – Medium, L – Low

The maintenance of favourable condition of qualifying interests at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Favourable conservation status of habitats and species is described in the Guidance as follows:

- **Favourable conservation status of a habitat** can be described as being achieved when: *“its natural range, and the area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable”*.
- **Favourable conservation status of a species** can be described as being achieved when: *“population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, sufficiently large habitat to maintain its populations on a long term basis”*.

Site-specific conservation objectives aim to define favourable conservation conditions for the qualifying interests, i.e. Annex I habitat and Annex II species, as applicable. The conservation objectives are presented as a list of attributes against which targets have been set. All of the attributes in relation to each qualifying interest (QI) of relevance to this NIS (i.e. sea lamprey, brook lamprey, river lamprey and Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation) have been considered in relation to the potential impacts associated with the proposed development. Site specific conservation objectives (SSCOs) for the QI species sea lamprey, brook lamprey and river lamprey and QI habitat Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation for Lower River Shannon SAC are detailed in Table 4-4 and Table 4-5.

Table 4-4: Site specific conservation objectives, attributes and targets for the relevant QI habitats of the Lower River Shannon SAC (NPWS, 2012)

Conservation Objectives of Lower River Shannon SAC		
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]		
Attribute	Measure	Target
Habitat area	Kilometres	Area stable or increasing, subject to natural processes.
Habitat distribution	Occurrence	No decline, subject to natural processes.
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes
Hydrological regime: tidal influence	Daily water level fluctuations - metres	Maintain natural tidal regime
Hydrological regime: freshwater seepages	Metres per second	Maintain appropriate freshwater seepage regimes
Substratum composition: particle size range	Millimetres	The substratum should be dominated by the particle size ranges, appropriate to the habitat sub-type (frequently sands, gravels and cobbles)
Water quality: nutrients	Milligrams per litre	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type should be present and in good condition

Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained
Riparian habitat	Area	The area of riparian woodland at and upstream of the bryophyte-rich sub-type should be maintained

Table 4-5: Site specific conservation objectives, attributes and targets for the relevant QI species of the Lower River Shannon SAC (NPWS, 2012)

Sea Lamprey <i>Petromyzon marinus</i> [1095]			
Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	Artificial barriers can block or cause difficulties to lampreys' upstream migration, thereby limiting the species to lower stretches and restricting access to spawning areas.
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	
Juvenile density in fine sediment	Juveniles/m ²	Juvenile density at least 1/m ²	Juveniles burrow in areas of fine sediment in still water.
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Lampreys spawn in clean gravels.
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	Despite observed spawning activity, sampling for ammocoetes consistently fails to find these in many sampling stations and never in any great numbers
Brook Lamprey <i>Lampetra planeri</i> [1096]			
Attribute	Measure	Target	Notes
Distribution	% of river accessible	Access to all water courses down to first order streams	Artificial barriers can block or cause difficulties to brook lampreys' migration, both up- and downstream, thereby possibly limiting the species to specific stretches and creating genetically isolated populations (Espanhol et al., 2007)
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	It is impossible to distinguish between brook and river lamprey juveniles in the field (Gardiner, 2003), hence they are considered together in this target
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Juveniles burrow in areas of fine sediment in still water

Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Spawning site and redd attributes established by IFI (Rooney et al., in press)
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Many sites with suitable larval attributes i.e. fine sediment in low velocity habitat, are found not to contain larval lamprey. This may be a function of chance or probability or may be a consequence of insufficient recruitment to fill all spatial niches. Occupancy in excess of 50% of sites would be 'reasonable' for the Irish catchments examined to date (King et al., unpublished data)
River Lamprey <i>Lampetra fluviatilis</i> [1099]			
Attribute	Measure	Target	Notes
Distribution	% of river accessible	Access to all water courses down to first order streams	Artificial barriers can block or cause difficulties to river lampreys' migration, both up- and downstream, thereby possibly limiting the species to specific stretches and creating genetically isolated populations (Espanhol et al., 2007)
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	It is impossible to distinguish between brook and river lamprey juveniles in the field (Gardiner, 2003), hence they are considered together in this target
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Juveniles burrow in areas of fine sediment in still water.
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Many sites with suitable larval attributes i.e. fine sediment in low velocity habitat, are found not to contain larval lamprey. This may be a function of chance or probability, or may be a consequence of insufficient recruitment to fill all spatial niches. Occupancy in excess of 50% of sites would be 'reasonable' for the Irish catchments examined to date (King et al., unpublished data)

5 Existing Environment

Ecology surveys of the proposed site were undertaken by ecologist Ms. Karen Banks between January 2024 and June 2025. The surveys assessed the potential for Qualifying Interests (QIs) of European sites within the likely ZoI [zone of influence] of the proposed development.

This chapter provides a summary of habitats and species present at the proposed site and describes the results of the desktop study and field surveys undertaken for qualifying interests of Lower River Shannon SAC. A full description of the receiving environment of the proposed development is included within the Ecological Impact Assessment (EclA) accompanying the planning application.

5.1 Habitats

The proposed site comprises improved grassland (GA1) bound by hedgerows (WL1).

No non-native invasive plant species listed in the Third Schedule⁷ or First Schedule⁸ were recorded at the proposed site.

There are no watercourses or active drainage channels present at the proposed site and its immediate environs.

5.2 Species

Fauna were surveyed through observation of field signs such as direct observation, tracks, feeding signs and droppings. Habitats were assessed for their potential for use, or confirmed use, by protected species of fauna during the ecology surveys undertaken in 2024 and 2025.

The habitats at the proposed site and its immediate environs are not suitable to support QI species for Lower River Shannon SAC.

5.3 Surface Water

5.3.1 Water Bodies

The proposed site is located within the Ballynacloough_010 WFD Sub-basin and the Shannon Estuary South WFD Catchment.

As noted previously, there are no watercourses or active drainage ditches within the proposed site and its immediate environs. The nearest waterbody is Loughmore Canal, which is located c.189m to the south of the site. Loughmore Canal is an artificial drainage channel which was constructed by the Industrial Development Authority (IDA) in the 1970's as part of the development of the Raheen Business Park (RBP). The channel serves to convey stormwater drainage from the IDA stormwater system to the Barnakyle River. The canal runs for c.1km through Loughmore Common Turlough pNHA before discharging into a culvert under Caher Road c.380m to the south-west of the proposed site. The Canal discharges via the culvert into the Barnakyle River, which in turn drains into the Maigue River downstream and then joins the Shannon Estuary.

The proposed development overlies the Limerick City Southwest (GWB).

The EPA waterbody codes for the proposed site and its environs are included in Table 5-1.

⁷ Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)

⁸ First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024)

Table 5-1: EPA Waterbody Codes

EPA Waterbody Name	Waterbody Type	EPA Code	EPA Waterbody Code
Barnakyle River	River	24BO5	IE_SH_24BO50600
Maigue Estuary	Transitional	n/a	IE_SH_060_0700
Limerick City Southwest	Groundwater	n/a	IE_SH_G_141

5.3.1.1 Surface Water Quality and Risk Characterisation

Macroinvertebrate sampling for Q-value determination was conducted within the Barnakyle River as part of EPA's Water Framework Directive monitoring. The nearest sampling point is located within the Barnakyle River at "Bridge SE of Clarina" c.2.8km to the west of the proposed site. In 2023 the Q value score at Bridge SE of Clarina was 3-4, moderate. Biological Water Quality at this location has improved steadily from a Poor Status in 2007, and similar improving trends are evident in water chemistry data over the same period.⁹ The Barnakyle River is classified as being of 'moderate' status under the WFD 2016-2021 round and is at risk of not meeting WFD objectives. The transitional water quality of Maigue Estuary Transitional Waterbody is also classified as 'moderate' and has been assigned as 'at risk' under the WFD.

The Limerick City Southwest groundwater body is classified as "good" under the 2016-2021 WFD but is 'at risk' of not meeting WFD objectives.

5.3.2 Soils, Geology and Hydrogeology

The Geological Survey of Ireland (GSI) online database ([Geological Survey Ireland Spatial Resources](#)) was consulted for available edaphic, geological and hydrological information of the proposed site and its environs. The proposed site is overlaid by BminDW, grey brown podzolics, brown earth (medium high base status soil). In terms of bedrock geology, undifferentiated limestone underlies the proposed site. The proposed site is mapped by the GSI as part of a locally important aquifer-bedrock which is generally moderately productive. Groundwater vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease at which groundwater may be contaminated. The study area is of 'high' groundwater vulnerability.

There is one karst feature located in the vicinity of the proposed site: Loughmore Common Turlough, which is located adjacent to the southern boundary of the site. As noted previously, the turlough discharges via Loughmore Canal.

As detailed in the Hydrology and Hydrogeology Assessment (IE Consulting, 2026), in the western and southern part of the proposed development site, groundwater appears to flow from the north-western high towards the Loughmore Canal in the south, with a component of flow directed eastwards. In contrast, in the north-eastern corner of the site, groundwater flow appears to be directed northwards towards the River Shannon (Figure 5-1) (River Shannon channel is c.2.7km to the north).

⁹ Environmental Protection Agency Office of Environmental Enforcement An Assessment of Stormwater Quality at EPA-licensed sites in Raheen Business Park A report to Limerick City & County Council 3 June 2025, available at: [090151b280939362.pdf](#), accessed 22/10/2025

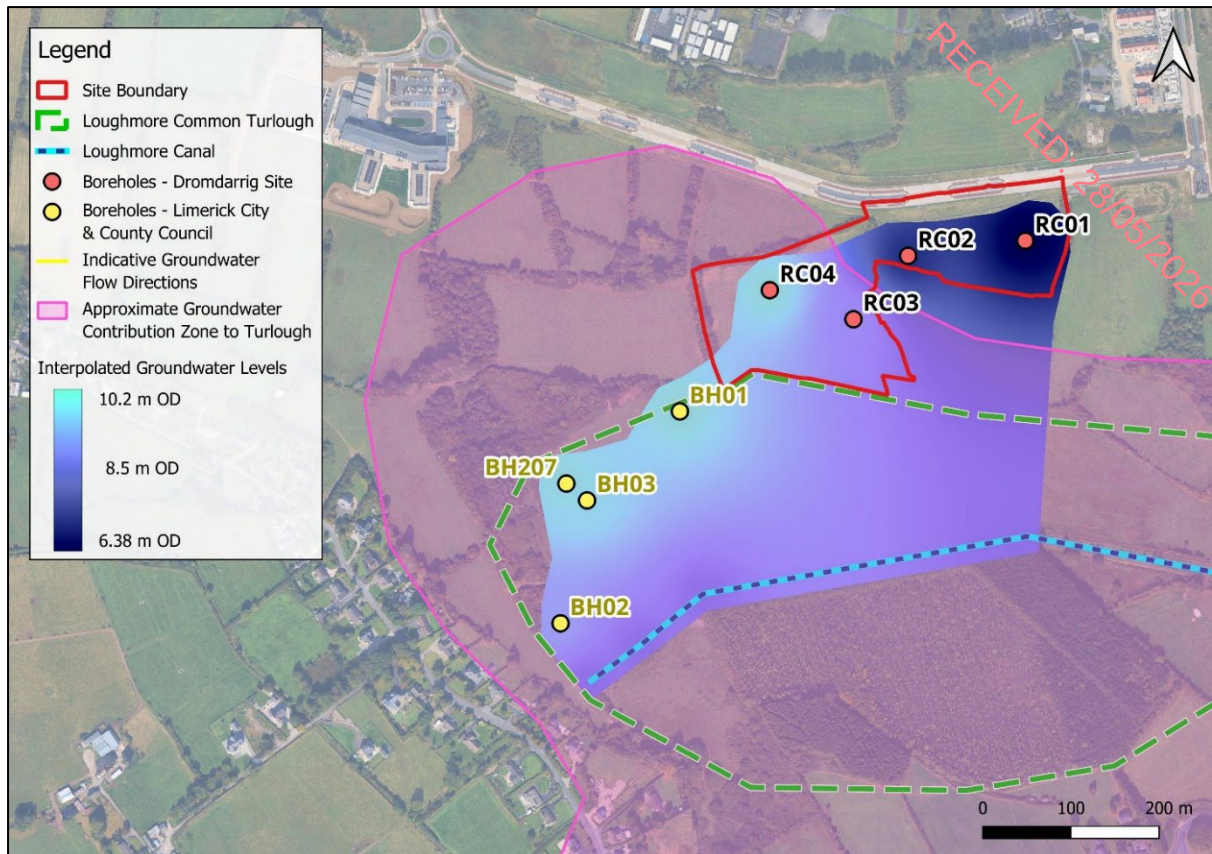
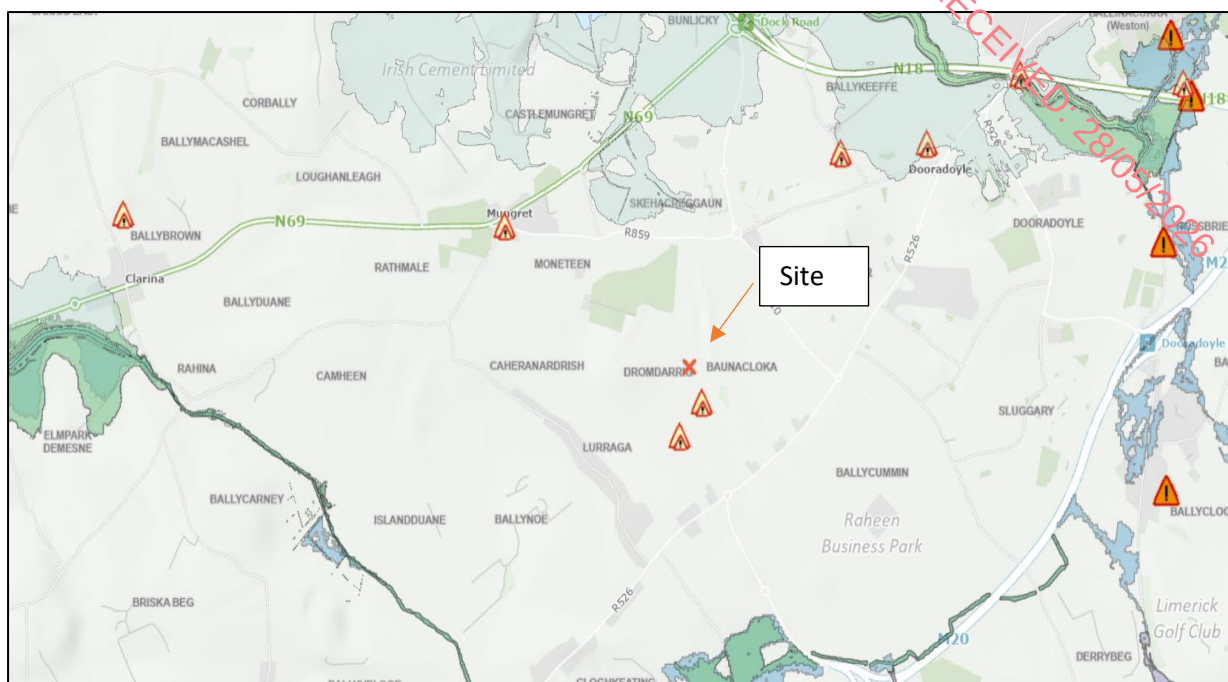


Figure 5-1: Approximate Groundwater Contribution Zone to Turlough (IE Consulting, 2026)

5.3.3 Flooding

The Office of Public Works (OPW) flood mapping (<http://www.floodinfo.ie/map/floodmaps/>) indicates the flood extents for waterbodies in the environs of the application site. As indicated in Figure 5-2, the flood extents do not reach the application site.

Figure 5-2: OPW Flood Risk Mapping of the Application Site and its Environs



A Site Specific Flood Risk Assessment undertaken by DOBA (2025) concluded that there is no risk from Tidal, Fluvial, Pluvial, Groundwater or Human/ Mechanical Error Flooding. The site is located within Flood Zone C, therefore, no further detailed assessment is deemed necessary and the development is not at risk from flooding.

6 Impact Assessment

Impacts can be direct and indirect and the impacts that could potentially occur through the construction and operation of the proposed development are as follows:

- Changes in key indicators of conservation value such as decrease in water quality within the Lower River Shannon SAC.

The assessment of impacts identifies the potential construction and operational phase impacts Lower River Shannon SAC in the absence of mitigation.

6.1 Direct Impacts

The proposed development is not located within lands designated for nature conservation, including Lower River Shannon SAC. Further, there are no resource requirements (e.g. excavation or abstraction) from European sites for the proposed development. Consequently, none of the lands designated as part of European sites will be directly impacted or removed as a result of the proposed development. Therefore, there will be no direct impacts to European sites in this regard.

6.2 Indirect Impacts

6.2.1 Overview of Potential Impact Sources and Pathways

Potential impacts resulting from construction phase civil engineering works near waterbodies are primarily related to three sources of possible water borne pollutants, i.e., suspended solids (sediment washout), concrete and hydrocarbons.

The potential pathway for these pollutants to enter nearby surface waters is via preferential overland flow paths and movement of groundwater from the west of the site towards Loughmore Canal (Figure 5-1).

- **Suspended Solids:** The principal source of potentially negative impact on aquatic receptors arises from the escape of excessive amounts of suspended solids / sediment during the construction phase. Sediment export can arise from earthworks and/or erosion of soil stockpiles and excavated areas relating to, e.g., temporary access routes, material stockpiles and excavation for foundations, utilities etc. Escaped solids can settle in watercourses, smothering plants and macroinvertebrates, causing fish to abandon the area at least in the short-term. This can result in reduced recruitment of young fish from affected reaches as a result of egg and fry mortalities and displacement of juveniles from nursery areas.
- Elevated concentrations of suspended solids and resulting turbidity within the water column can also potentially damage the gills, physiology and behaviour of fish (e.g., respiration, migration) and/or benthic macroinvertebrates (e.g., respiration, drift responses).
- Similar to salmonids, lampreys also depend on clean gravels for spawning, and although lamprey nursery areas depend on marginal sediments, excessive amounts of sediment deposition within a short time period could cause smothering of ammocoetes through loss of oxygen exchange.
- **Cement:** Owing to its highly alkaline and corrosive nature, cement is potentially toxic to instream fauna and can cause fish and invertebrate kills downstream. However, standard best practice in construction site layout and management means that the risk of wet concrete loss to surface waters at Loughmore Canal would be very low.
- **Hydrocarbons:** Hydrocarbons from construction sites can emanate from poorly maintained and leaky construction vehicles, mobile plant and cranes and stationery plant such as pumps

and generators. Leakage from poorly secured or non-bunded fuel storage areas including spills during re-fuelling of plant and equipment can also occur. Hydrocarbon spills and leakages can result in contamination of groundwater, oil slicks and tainting of fish, or (if large enough) localised fish and invertebrate kills. This could be detrimental to trout eggs and young fry in spawning and nursery areas of in downstream receiving waters. Loss of hydrocarbons during the construction phase can be prevented / avoided through best practice in construction management.

6.2.2 Construction Phase

There will be no direct impacts on the aquatic habitats of Loughmore Canal, Barnakyle River, Maigue Estuary and Lower River Shannon SAC as the works have no riparian or instream physical footprint.

Loughmore Canal is an artificial drainage channel that is dredged periodically and is not of importance for fisheries. Other than water quality, this drainage channel does not contribute to supporting conservation objectives for aquatic QI species for Lower River Shannon SAC. As noted in the AASR, the Maigue Estuary (located downstream of the canal) is not likely to act as a holding or migratory route for salmon and is unsuited to spawning and nursery for the species owing to tidal flow influence within the estuary. The QI species river lamprey was recorded downstream of the proposed site in a fish stock survey of the Maigue Estuary undertaken by the Central and Regional Fisheries Boards in 2009 as part of the programme of monitoring for the Water Framework Directive (WFD)¹⁰. At worst, slightly elevated levels of turbidity or release of deleterious substances in association with construction works at the proposed site could temporarily affect the Maigue Estuary, however any small increment in turbidity will likely be imperceptible to lamprey. Likely effects on lamprey would be slight, and not significant. Nonetheless, applying the precautionary principle, it is assumed that there is potential for impacts on sea and brook/river lamprey within Lower River Shannon SAC as a result of degradation of water quality.

Review of mapping within the Lower River Shannon SAC Conservation Objectives¹¹, indicates that the QI habitat Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260], sub-type *Schoenoplectus triqueter*, Triangular Club-rush, has been recorded within the River Maigue. Applying the precautionary principle, there is potential for impacts on this habitat as a result of a reduction in water quality.

6.2.3 Operational Phase

During the operational phase, the proposed development includes the use of Sustainable Urban Drainage System (SuDS) features, including Bioretention areas, Bioswales, Rain gardens, Tree pits, Permeable paving, Infiltration trenches, Attenuation tanks and Petrol/oil interceptors. Where the infiltration capacity is exceeded or fails, provision has been made for a pumping station to operate. The design and management of surface water for the proposed development will comply with the policies and guidelines outlined in the Limerick Development Plan (2022 – 2028) and the CIRIA SuDS Manual. Any infiltration on the site will enter the watertable and, following the groundwater gradient, move southwards towards Loughmore Common Turlough. This will preserve the current recharge characteristics of the site, so there will be no diminution of recharge quantity to the turlough from the north. Further, the inclusion of SuDS devices and a petrol interceptor, will protect the water quality integrity. Wastewater will discharge by gravity to the proposed Type 3 Wastewater Pump Station (WWPS) situated to the west of the site. A rising main shall pump effluent to a manhole to the north

¹⁰ [Maigue \(fisheriesireland.ie\)](https://fisheriesireland.ie)

¹¹ [Site specific cons obj \(npws.ie\)](https://npws.ie)

of the site adjacent to the southern edge of the LIHAF road before discharging by gravity to the existing wastewater sewer installed on the LIHAF road¹².

In view of these factors, no potential for likely significant effects on water quality within Loughmore Common Turlough and, in turn, Maigue Estuary and Lower River Shannon SAC during the operational phase of the proposed development has been identified.

6.3 Assessment of Habitats and Species of Conservation Interest

The site-specific Conservation Objectives for the relevant qualifying interests for Lower River Shannon SAC are presented in Section 4.2. This section assesses the likelihood of the proposed development impacting the site-specific conservation objectives assigned for the relevant qualifying interests of Lower River Shannon SAC, namely sea lamprey, brook lamprey, river lamprey and Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation.

Attributes and proposed targets to maintain favourable conservation condition for these species, in addition to potential impacts are presented in Table 6-1 below.

Table 6-1: Potential Impacts on the Specific Conservation Objectives for the Relevant Qualifying Species of Lower River Shannon SAC (NPWS, 2012)

Conservation Objectives of Lower River Shannon SAC			
Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation [3260]			
Attribute	Measure	Target	Potential Impacts
Habitat area	Kilometres	Area stable or increasing, subject to natural processes.	No: the proposed works will not affect the habitat area.
Habitat distribution	Occurrence	No decline, subject to natural processes.	No: the proposed works will not affect the habitat distribution.
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes	No: the proposed works will not affect the hydrological regime.
Hydrological regime: tidal influence	Daily water level fluctuations - metres	Maintain natural tidal regime	No: the proposed works will not affect the hydrological regime.
Hydrological regime: freshwater seepages	Metres per second	Maintain appropriate freshwater seepage regimes	No: the proposed works will not affect the hydrological regime.
Substratum composition: particle size range	Millimetres	The substratum should be dominated by the particle size ranges, appropriate to the habitat sub-type (frequently sands, gravels and cobbles)	No: in consideration of the location of the proposed works c.6.4km upstream of this SAC, the proposed works are not likely to result in a significant effect on the substratum composition.
Water quality: nutrients	Milligrams per litre	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species	No: in consideration of the location of the proposed works c.6.8km upstream of this SAC, the proposed works

¹² These surface water and wastewater management features have been provided in accordance with the requirement of Limerick Development Plan (2022 – 2028), which are required for residential developments regardless of the presence or otherwise of connecting pathways to European sites.

		composition or habitat condition	are not likely to result in a significant effect on levels of nutrients at the location of known areas of this habitat within the River Maigue.
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type should be present and in good condition	No: the proposed works will not affect vegetation composition.
Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained	No: the proposed works will not affect the area of available flood plain.
Riparian habitat	Area	The area of riparian woodland at and upstream of the bryophyte-rich sub-type should be maintained	No: the proposed works will not affect the area of riparian habitat.
Sea Lamprey <i>Petromyzon marinus</i> [1095]			
Attribute	Measure	Target	Potential Impacts
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	None: the proposed works will not affect the accessibility of watercourses for sea lamprey.
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	None: no alteration in the number of age/size groups of juveniles will arise from the proposals.
Juvenile density in fine sediment	Juveniles/m ²	Juvenile density at least 1/m ²	Yes, there is potential for adverse impacts on juvenile lamprey as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Yes, there is potential for adverse impacts on lamprey spawning habitat as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	Yes, there is potential for adverse impacts on lamprey juvenile habitat as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Brook Lamprey <i>Lampetra planeri</i> [1096]			
Attribute	Measure	Target	Potential Impacts
Distribution	% of river accessible	Access to all water courses down to first order streams	None: the proposed works will not affect the accessibility of watercourses for sea lamprey.

Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	None: no alteration in the number of age/size groups of juveniles will arise from the proposals.
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Yes, there is potential for adverse impacts on juvenile lamprey as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Yes, there is potential for adverse impacts on lamprey spawning habitat as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Yes, there is potential for adverse impacts on lamprey juvenile habitat as a result of excessive sedimentation or the mobilisation of contaminants during construction.
River Lamprey <i>Lampetra fluviatilis</i> [1099]			
Attribute	Measure	Target	Potential Impacts
Distribution	% of river accessible	Access to all water courses down to first order streams	None: the proposed works will not affect the accessibility of watercourses for sea lamprey.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	None: no alteration in the number of age/size groups of juveniles will arise from the proposals.
Juvenile density in fine sediment	Juveniles/m ²	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Yes, there is potential for adverse impacts on juvenile lamprey as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Yes, there is potential for adverse impacts on lamprey spawning habitat as a result of excessive sedimentation or the mobilisation of contaminants during construction.
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and	More than 50% of sample sites positive	Yes, there is potential for adverse impacts on lamprey juvenile habitat as a result of excessive sedimentation or

	greater), downstream of spawning areas		the mobilisation of contaminants during construction
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6.4 In-combination Impacts

It is a requirement of Appropriate Assessment that the in-combination effects of the proposed development together with other Plans or projects are assessed. In-combination impacts can result from the successive, incremental, and/or combined effects of a development (plan, project or activity) when added to other existing, planned, and/or reasonably anticipated developments.

A search of the Limerick County Council planning enquiry system was conducted for developments that may have in-combination effects on European sites with the proposed development. The search included developments that are proximal to the proposed site and those that may have an adverse cumulative or in-combination impact with the proposals on the water quality of Lower River Shannon SAC.

Plans relevant to the area were searched in order to identify any elements of the Plans that may act cumulatively or in-combination with the proposed development.

A list of those projects and Plans which may potentially contribute to cumulative or in-combination impacts with the proposed development was generated for as listed in Table 6-2 below.

Table 6-2: List of Potential Plans which may Contribute to Cumulative Impacts

Plan / Programme/Policy	Key Objectives/Policies/Proposals	Potential for In-combination Effects and Mitigation
Limerick County Development Plan 2022-2028	Limerick County Development Plan includes the following Objectives of relevance to this report: EH P1 Protection of Natural Heritage and Biodiversity: It is a policy of the Council to: a) Protect and conserve Limerick's natural heritage and biodiversity, in particular, areas designated as part of the European Sites Natura 2000 network, such as Special Protection Areas (SPAs) and Special Areas of Conservations (SACs), in accordance with relevant EU Directives and national legislation and guidelines. b) Maintain the conservation value of all Natural Heritage Areas and proposed Natural Heritage Areas (pNHAs) for the benefit of existing and future generations. EH O1: Designated Sites and Habitats Directive It is an objective of the Council to ensure that projects/plans likely to have significant effects on European Sites (either individually or in combination with other plans or projects) are subject to an appropriate assessment and will not be permitted under the Plan unless they comply with Article 6 of the Habitats Directive. The Council, will through the planning enforcement process where applicable, seek to restore the ecological functions of designated	Policies and objectives of the Limerick County Development Plan 2022-2028 ensure that local planning applications comply with proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in-combination effects on European Sites.

	sites, where they have been damaged through inappropriate development.	
Water Action Management Plan 2024	The Water Action Plan includes targeted measures for all water bodies, with the objective of either protecting water bodies at good or high status or restoring water bodies to at least good status. Where further specific measures are needed in addition to those set in this plan, integrated catchment planning approaches will be used to identify and decide on further specific measures for each water body. This will be reported in 46 Catchment Management Work Plans. These will be used to locate measures within each catchment. The list of water bodies and their associated status, significant pressures/issues and targeted measures, which are to be included in the Catchment Management Work Plans, will include targets for the third-cycle, along with Key Performance Indicators to monitor progress and outcomes.	The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects to European sites. The implementation of this plan will have a positive impact for the biodiversity. It will not contribute to in-combination effects with the proposed development.
WWTP discharges	Limerick	Discharges from municipal WWTPs are required to meet water quality standards. Irish Water Capital Investment Plan 2020-2024 and Strategic Plan 2050 proposes to upgrade water treatment services countrywide. The long-term in-combination impact is predicted to be negligible.
IPPC Programme	Analog Devices International (P0224), Howmedica International S de R.L Trading as Stryker Orthopaedics, Redeneron Ireland Designated Activity Company, IMAG Optical Storage Limited and Adhesives Research Ireland; all located at Raheen Industrial Estate, c.0.7km to the south-east of the site at nearest. Irish Cement Limited (Limerick), located c.1.3km north-west of the site.	Discharges from these facilities are governed by strict limits to ensure compliance with quality standards. The long-term in-combination impact is predicted to be negligible.
Residential Development (Ref: 218000)	Development on circa 7.2 hectares of land zoned for development purposes within the Southern Environs Local Area Plan 2011 – 2017 (as extended). The proposed development seeks the construction of 253 no. residential units.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core

		strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.
Post-primary School (Ref: 20735 and 20738)	Construction of a new 1000 pupil post-primary school circa 11,379sqm over 3 storey levels with rooftop plantroom and 450sqm photovoltaic panels. Incorporating Teaching spaces, Social spaces, Multi-purpose hall, Special Education Needs unit & ESB substation. A new site entrance & internal road with set-down area, car parking for 90no. spaces, covered bicycle stand, 6no. ballcourts, playing field, landscaping, new boundary treatments. Main access will be via new roadway with cycle lane and footpath which will be formed off the planned new distributor road with spur connection as granted permission 19/8011 and all associated site works on a 10acres site.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.
Residential Development (Ref: 211216)	The construction on Site A of 99no. residential units comprising 4no. 4-bed semi-detached dwellings, 4no. 3-bed terraced dwellings, 38no. 3-bed semi-detached dwellings, 2no. 3-bed detached dwellings, 12no. duplex apartments comprising 24no. 2-bed units, 9no. triplex apartments comprising 19no. 1-bed units and 8 no. 2-bed units, all with associated secure bicycle parking and bin storage.	The AASR completed for the development concluded that, through an assessment of the source-pathway-receptor model, which considered the Zol of effects from the proposed development and the potential in-combination effects with other plans or projects, the following findings were reported: The proposed development, either alone or in-combination with other plans and/or projects does not have the potential to significantly affect any European site, in light of their conservation objectives. No potential for adverse in combination effects on European Sites has been identified.

Residential Development (Ref: 211217)	The construction on Site B of 99no. residential units. Further development on adjoining lands to application 211216.	The AASR found that no habitats of value for SCI species occur within the proposed site. No long-term in-combination effects on Natura 2000 sites will occur. The proposed development, either alone or in-combination with other plans and/or projects does not have the potential to significantly affect any European site, in light of their conservation objectives. No potential for adverse in combination effects on European Sites has been identified.
Residential Development (Ref: 201195)	The construction of 66no. residential units.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.

No aspects of the projects or Plans summarised in Table 6-2 are anticipated to have a significant adverse effect upon the European Sites in combination with the proposed development.

6.5 Conclusion of Impact Assessment

In the absence of mitigation, there is potential for run-off of deleterious substances to reach Loughmore Canal via overland flow or movement of groundwater to Loughmore Common Turlough. Applying the precautionary principle, there is potential for impact on the aquatic QI species sea lamprey, brook lamprey and river lamprey and QI habitat Water courses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachion vegetation.

Mungret and its environs support a number of residential developments and an educational development that have been granted planning permission. These developments have been granted planning permission on the basis that, where relevant, targeted and site-specific mitigation is completed to minimise potential impacts to Lower River Shannon SAC. With the implementation of best practice construction methods and mitigation measures for all other developments, then no

significant negative cumulative and in-combination impacts on the water quality of Lower River Shannon SAC with the proposed development are expected.

All possible sources of effects from the proposed development, in combination with all other sources in the existing environment and any other effects likely to arise from other proposed plans or projects have been identified.

Robust and effective mitigation measures to avoid and or ameliorate these impacts are provided in Section 7.

7 Mitigation

As stated in MN2000:

“Mitigation measures may be proposed by the plan or project proponent and/or required by the competent national authorities in order to avoid the potential impacts identified in the appropriate assessment or reduce them to a level where they will no longer adversely affect the site’s integrity” (Section 4.6.6).

Potential impacts identified in the above chapters primarily relate to the deterioration in the water quality of Lower River Shannon SAC during the construction phase of the proposed development. Mitigation measures to avoid or reduce the potential impacts on Lower River Shannon SAC are provided in the following sections.

7.1 Construction Phase

7.1.1 General

Measures to be used to protect water quality during the construction works shall follow the relevant sections of the following Guidelines:

- Guidelines on protection of fisheries during construction works in and adjacent to waters (IFI, 2016).
- Control of water pollution from construction sites. Guidance for consultants and contractors (C532) (CIRIA, 2001).

A Construction and Environmental Management Plan (CEMP) has been prepared to inform the planning application for the development (OSL Butler, 2026). The CEMP describes the main activities that will be undertaken to facilitate the development and the procedures for the delivery of environmental mitigation and monitoring measures for addressing general day-to-day environmental issues that can arise during the construction phase of the development. The CEMP will be updated by the appointed contractor and will be updated prior to and during construction on an as-needed basis to manage environmental risks and mitigation.

A comprehensive Construction Method Statement (CMS) for the proposed development shall be prepared by the contractor and reviewed and approved by the relevant statutory authorities before any works take place. The CMS will incorporate all mitigation measures set out in the CEMP.

The CEMP sets out comprehensive measures for the protection of biodiversity (Section 9) surface water quality and groundwater quality (Section 10), including monitoring requirements in Section 10.9.

No further specific mitigation measures are required.

7.2 Likely Success of Mitigation

The CEMP incorporates standard best practice measures provided in current best practice pollution prevention guidelines. With the effective implementation of these measures, there is a high level of confidence in their likely success. The measures in the CEMP are established and proven.

8 Analysis and Conclusions

8.1 Integrity of the European Site

From “Managing Natura 2000 sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC” (EC, 2018), the meaning of integrity is described as follows:

‘The integrity of the site involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site’s conservation objectives.’ (MN2000, Section 4.6.4).

8.2 Integrity of the Lower River Shannon SAC

Site specific Conservation Objectives were published for Lower River Shannon SAC in 2012. This document provides specific attributes and targets by which the maintenance of favourable conservation conditions of the relevant qualifying interests within Lower River Shannon SAC are measured. The overarching conservation objective for this European Site is as follows:

Objective: *To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected (see Section 4).*

While potential exists for impacts to the qualifying interests of Lower River Shannon SAC during the construction phase of the proposed development, these can be readily mitigated through the implementation of the measures outlined in **Section 7**.

Following examination and analysis of the potential that is likely to result from the construction stage of the development and the mitigation measures proposed to avoid impacts to the SAC, the ‘Integrity of Site’ checklist is completed for Lower River Shannon SAC in **Table 8-1** below.

Table 8-1: Integrity of Site Checklist for Lower River Shannon SAC

Conservation Objectives		
Does the project have the potential to:	Yes or No	Comment
Cause delays in progress towards achieving the conservation objectives of the site?	No	The proposed development will not cause delays in achieving the conservation objectives of the site. Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Interrupt progress towards achieving the conservation objectives of the site?	No	The proposed development will not interrupt progress towards achieving the conservation objectives of the site. Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Disrupt those factors that help to maintain the favourable conditions of the site?	No	The proposed development will not disrupt factors that help to maintain the favourable conditions of the site. Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Interfere with the balance, distribution and density of key species that are the	No	The proposed development will not interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site. Potential impacts in the form of water quality deterioration to the

indicators of the favourable condition of the site?		Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Other Indicators		
Does the project or plan have the potential to:		
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	No	Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	No	Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	No	Potential impacts in the form of water quality deterioration to Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Reduce the area of key habitats?	No	There will be no direct loss of key habitats within Lower River Shannon SAC. Potential indirect impacts may occur as a result of contaminated surface water run-off during the construction phase, but this can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Reduce the population of key species?	No	There will be no direct reduction of key species within Lower River Shannon SAC. Potential indirect impacts may occur as a result of contaminated surface water run-off during the construction phase, but this can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Change the balance between key species?	No	The proposed development will not change the balance between key species associated with Lower River Shannon SAC. Mitigation measures are prescribed to safeguard Lower River Shannon SAC. Required mitigation and standard best practice measures are outlined in Section 7.
Reduce diversity of the site?	No	The proposed development will not reduce the diversity of Lower River Shannon SAC. Potential impacts through the deterioration of water quality in Lower River Shannon SAC can be readily mitigated. Required mitigation and standard best practice measures are outlined in Section 7.
Result in disturbance that could affect population size or density or the balance between key species?	No	No impacts have been identified that would result in disturbance that could affect population size or density or balance between key species associated with Lower River Shannon SAC.
Result in fragmentation?	No	No impacts have been identified that would result in fragmentation of habitats for Lower River Shannon SAC has been designated.

Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	No	No key features associated with the Lower River Shannon SAC will be lost as a result of construction or operation of the proposed development.
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8.3 Conclusions

This NIS has been prepared having regard to the Department of the Environment, Heritage and Local Government guidance *'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities'* (DoEHLG, 2010a).

The assessment for the proposed development examines and analyses the potential adverse effects on the qualifying interests of European sites arising from the proposals. The assessment considers whether the proposed development works and operation, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European site, and includes any mitigation and standard best practice measures necessary to avoid, reduce or offset negative effects.

With the mitigation and standard best practice measures in Section 7 implemented in full, it can be objectively concluded that the proposed development at Mungret will not adversely affect the integrity of Lower River Shannon SAC in view of the site's conservation objectives and that the conservation status of the qualifying interests will not be compromised by the proposed development directly, indirectly or cumulatively.

The key considerations that have contributed towards this conclusion are summarised as follows:

- The proposed development is not located within Lower River Shannon SAC. There are no resource requirements (e.g. excavation or abstraction) from European sites for the Proposed Development and no QI habitats or species have been recorded within the proposed site. Consequently, none of the lands designated as part of European sites will be directly impacted or removed as a result of the proposed development.
- No indirect impacts on the water quality of Lower River Shannon SAC are expected in relation to sediment or pollution laden surface water run-off during the construction phase of the proposed development due to the requirement for the proposed construction works to adhere to best practice construction guidelines and the specific mitigation measures provided in the OCEMP, as outlined in Section 7 of this report.
- No potential for likely significant effects on Lower River Shannon SAC during the operational phase has been identified.

The conclusion of this NIS is that there will be no potential for direct, indirect or cumulative impacts arising from the proposed Residential Development Dromdarrig, Mungret, Co. Limerick either alone or in combination with any other plans or projects. The integrity of Lower River Shannon SAC will not be adversely affected. No reasonable scientific doubt remains as to the absence of such adverse effects.

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Appendix A: Appropriate Assessment Screening Report (AASR)

RECEIVED: 28/05/2026

Appropriate Assessment Screening Report

Residential Development

Dromdarrig

Mungret

Co. Limerick

RECEIVED: 28/05/2026

Report prepared for Marshall Yards Development Company Ltd

By Karen Banks MCIEEM

12th November 2025



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RECEIVED: 28/05/2026

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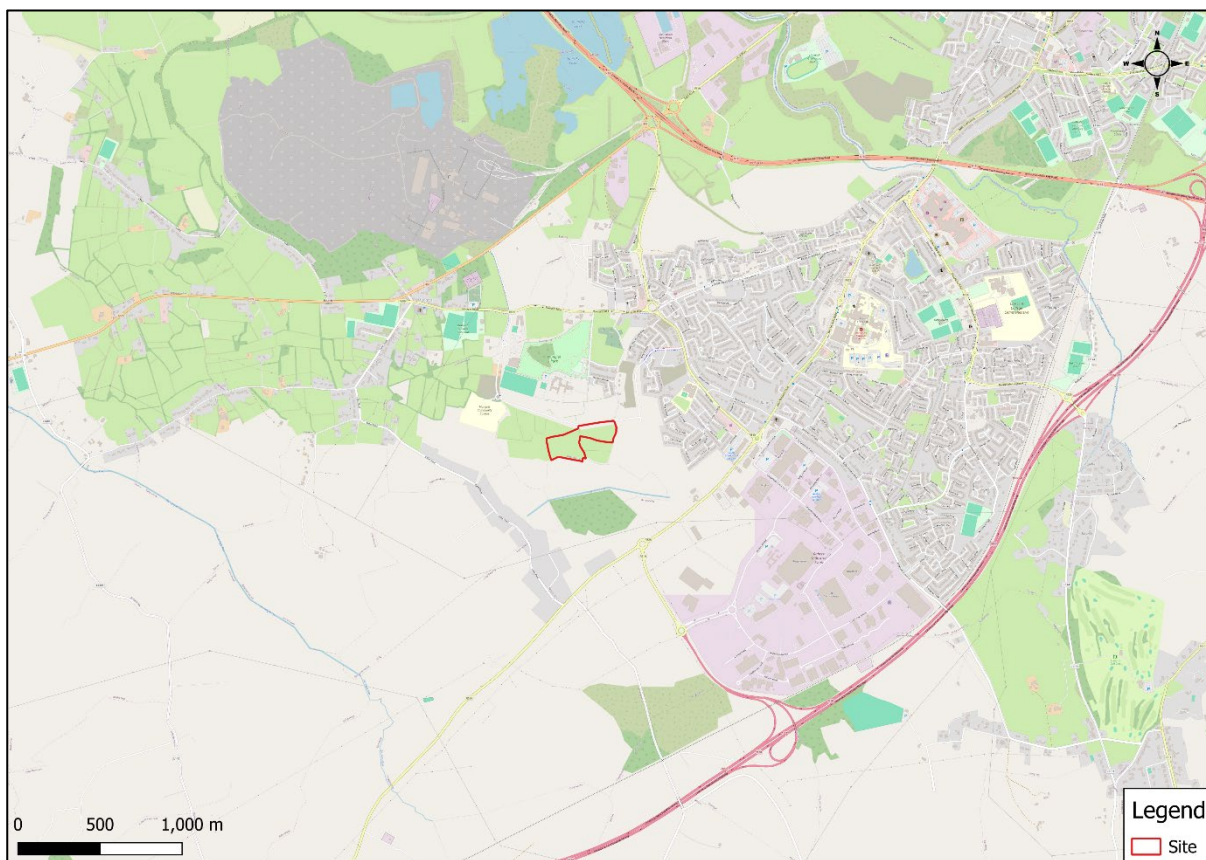
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1 Introduction

Greenleaf Ecology was commissioned by Marshall Yards Development Company Ltd to prepare an Appropriate Assessment Screening Report (AASR) for the proposed Residential Development, Dromdarrig, Mungret, Co. Limerick (hereafter referred to as the proposed development). The location of the proposed development is illustrated in Figure 1-1.

This report comprises information in support of screening for AA to be undertaken by the competent authority for the purposes of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora as transposed by the Planning and Development Act, 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) as amended.

Figure 1-1: Site Location



1.1 Legislative Context for Appropriate Assessment

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as “The Habitats Directive”, provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000.

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act, 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) as amended. In the context of the Proposed Development, the governing legislation is Part XAB of the Planning and Development Act, 2000 (as amended).

Articles 6(3) of the Habitats Directive set out the decision-making tests for plans and projects likely to adversely affect the integrity of European sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

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

Natura 2000 sites are defined under the Habitats Directive (Article 3) as a coherent European ecological network of special areas of conservation, composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range. In Ireland, these sites are designated as European sites and include Special Protection Areas (SPAs), established under the EU Birds Directive (79/409/EEC, as codified by 2009/147/EC) for birds and Special Areas of Conservation (SACs), established under the Habitats Directive 92/43/EEC for habitats and species.

The competent authority is obliged to consider, in view of best scientific knowledge, whether the proposed works are likely to have a significant effect either individually or in combination with other plans and projects. If screening determines that there is likely to be significant effects on a European site, then AA must be carried out for the proposed works at Mungret, including the compilation of a Natura Impact Statement (NIS) to inform the decision making by the Competent Authority.

1.2 Statement of Competence

This AA Screening was carried out by Karen Banks, MCIEEM. Karen is an ecologist with Greenleaf Ecology and has 19 years' experience in the field of ecological assessment. Karen has extensive experience in the production of reports to inform AA screenings and Natura Impact Statements including those for transport infrastructure, small to large scale housing and mixed-use developments, flood alleviation schemes, solar farms and wind farms.

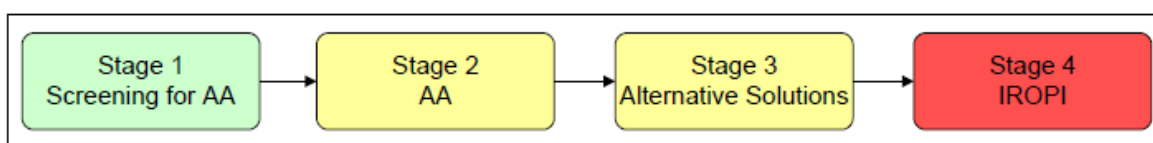
2 Methodology

2.1 Stages of Appropriate Assessment

The Department of the Environment, Heritage and Local Government guidelines (DELHG, 2009, rev. 2010) outlines the European Commission's methodological guidance (EC, 2002) promoting a four-stage process to complete the AA and outlines the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages are summarised diagrammatically in Figure 2-1. Stages 1-2 deal with the main requirements for assessment under Article 6(3) of the Habitats Directive, and Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations. Stage 3 may be part of the Article 6(3) Assessment or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Figure 2-1: Four stages of Appropriate Assessment



Stage 1 - Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- i. whether a plan or project (in this instance the proposed project) is directly connected to or necessary for the management of the European sites, and
- ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on the European sites in view of their conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). This report fulfils the information necessary to enable the competent authority to screen the proposal for the requirement to prepare an AA.

This report forms Stage 1 of the AA process and sets out the following information:

- Description of the proposed works;
- Characteristics of the proximal European sites; and
- Assessment of significance of the proposed works on the European sites in question.

The methodology followed in relation to this assessment has had regard to the following guidance and legislation:

- European Union Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 92/43/EEC;
- Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (DOEHLG 2009, rev 2010);
- The Planning and Development Act, 2000 (as amended);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2018);
- European Commission Notice Brussels C (2021) 6913 final 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (EC, 2021);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission 2013;
- The European Union (Environmental Impact Assessment and Habitats) Regulations 2011; and

- The European Communities (Birds and Natural Habitats) Regulations, S.I. No. 477 of 2011 (as amended).

2.2 Information consulted for this report

The Screening assessment had regard to the following sources of data and information:

- Information on the location, nature and design of the proposed project;
- Department of Housing, Planning, and Local Government – online land use mapping [Home - My Plan](#);
- Department of Housing, Planning, and Local Government- EIA Portal [gov.ie - EIA Portal \(www.gov.ie\)](#);
- Environmental Protection Agency (EPA) – Water Quality and Water Framework Directive data [EPA Maps](#);
- Geological Survey of Ireland – Geology, soils and Hydrogeology [www.gsi.ie](#);
- National Parks and Wildlife Service – online European site network information, including site conservation objectives [www.npws.ie](#);
- National Parks and Wildlife Service – Information on the status of EU protected habitats in Ireland (NPWS 2019a, 2019b);
- National Biodiversity Data Centre – [www.biodiversityireland.ie](#);
- Ordnance Survey of Ireland – Mapping and Aerial photography [www.osi.ie](#);
- Site survey, undertaken between January 2024 and June 2025 by Ms K. Banks (see Section 3.2).

2.3 Screening Protocol

The sequence of events when completing the AA Screening process is provided below:

- Ascertain whether the plan or project is necessary for the management of the European site;
- Description of the plan or project and its potential impact;
- Definition of the likely zone of influence for the proposed works;
- Identification of the European sites that are situated (in their entirety or partially or downstream) within the likely zone of influence of the proposed works;
- Identification of the most up-to-date QIs and SCIs for each European site within the zone of influence;
- Identification of the environmental conditions that maintain the QIs/SCIs at the desired target of Favourable Conservation Status;
- Identification of the threats/impacts of the proposed works – actual or potential that could negatively impact the environmental conditions of the QIs/SCIs within the European sites;
- Highlighting the activities of the proposed works that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which in-combination impacts would likely have significant effects.

2.3.1 Screening Determination

The proposed development is one to which Part XAB of the Planning and Development Act, 2000 as amended applies. In accordance with Part XAB of the Planning Acts as amended, and Section 177U thereof:

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

This report is to inform Screening for Appropriate Assessment.

2.3.2 Zone of Influence

In accordance with EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC*, identification of the European sites that may be affected should be done by taking into consideration all aspects of the plan or

project that could have potential effects on any European sites located within the zone of influence of the plan or project. This should take into account all of the designating features (species, habitat types) that are significantly present on the sites and their conservation objectives.

In particular, it should identify:

- Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- Any European sites within the likely zone of influence of the plan or project. Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;
- European sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);
- European sites whose connectivity or ecological continuity can be affected by the plan or project.
- The range of European sites to be assessed, i.e. the zone in which impacts from the plan or project may arise, will depend on the nature of the plan or project and the distance at which effects may occur.

2.3.3 Likely Significant Effects

The threshold for a likely significant effect is treated in the screening exercise as being above a *de minimis* level¹. The opinion of the Advocate General in CJEU case C-258/11 outlines:

“the requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.”

In this report, therefore, ‘relevant’ European sites are those within the potential zone of influence of the construction and / or operation of the proposed development, and to which likely significant effect pathways were identified through the source-pathway-receptor model.

¹ *Sweetman v. An Bord Pleanála* (Court of Justice of the EU, case C-285/11). A *de minimis* effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

3 Project and Site Description

3.1 Project Description

Permission for the following: Large-scale Residential Development (LRD) comprising of the construction of 169 no. residential units, 1 no. creche, 3 no. ESB substations and all associated development works including footpaths, cycle paths, car and bicycle parking, drainage, fencing, bicycle and bin stores, lighting and landscaping/amenity areas at Dromdarrig, Mungret, Co. Limerick.

Access to the site will be via 2 no. new vehicle access points from the existing Mungret Park Road.

3.1.1 Surface Water

The design and management of surface water for the proposed development will comply with the policies and guidelines outlined in the Limerick Development Plan (2022 – 2028) and the CIRIA SuDS Manual. A 30% climate change factor will be included for the design of the surface water network in accordance with the requirements of LCCC in addition to a 10% Urban Creep factor applied to roof areas.

The proposed disposal of surface water is to ground via an infiltration trench where soils yielded favourable infiltration rates.

Sustainable Urban Drainage System (SuDS) features to be provided include the following:

- Bioretention areas
- Bioswales
- Rain gardens
- Tree pits
- Permeable paving
- Infiltration trenches
- Attenuation tanks
- Petrol/oil interceptors

The surface water management system for the proposed development is described in full within the Infrastructure Design Report (DOBA, 2025) accompanying the planning application.

3.1.2 Foul Water Network

Wastewater will be collected via a main wastewater drainage network located around the proposed development and shall discharge by gravity to the proposed Type 3 Wastewater Pump Station (WwPS) situated to the west of the site. A rising main shall pump effluent to a standoff manhole to the north of the site adjacent to the southern edge of the LIHAF road before discharging by gravity to the existing 225mm dia. wastewater sewer installed on the LIHAF road.

Irish Water have confirmed that connection is feasible with upgrades comprising an extension of the network by approximately 390m.

3.2 Existing Environment

3.2.1 Habitats

The proposed site comprises improved grassland (GA1) bound by hedgerows (WL1).

No non-native invasive plant species listed in the Third Schedule² or First Schedule³ were recorded at the proposed site.

There are no watercourses or active drainage channels present at the proposed site and its immediate environs.

3.2.2 Species

3.2.2.1 Avifauna

3.2.2.1.1 Desk Study

The study area is located approximately 2.2km from River Shannon and River Fergus Estuaries SPA at nearest. Therefore, a number of protected bird species have been recorded within the vicinity of the proposed site. The NBDC hold records of eleven species included in Annex I of the EU Bird's Directive from the environs of the site, namely Corncrake, Golden Plover, Hen Harrier, Kingfisher, Little Egret, Mediterranean Gull, Merlin, Peregrine Falcon, Sandwich Tern, Short-eared Owl and Whooper Swan.

Twenty-two BoCCI Red List species (Gilbert, G. *et al* (2021)) have been recorded from the environs of the site: Barn Owl, Black-tailed Godwit, Corncrake, Eurasian Curlew, Dunlin, Golden Plover, Goldeneye, Grey Wagtail, Kestrel, Northern Lapwing, Meadow Pipit, Oystercatcher, Pochard, Redshank, Redwing, Scaup, Shoveler, Snipe, Stock Dove, Swift, Woodcock and Yellowhammer.

3.2.2.1.2 Field Survey

Winter bird surveys at the proposed site were undertaken on 31st January 2024 and 29th February 2024 and breeding bird surveys were undertaken on 28th March 2024, 16th May 2024, 2nd June 2024 and 10th June 2025.

Winter Bird Survey Methodology

A survey transect was walked through both fields at the proposed site allowing a view of the open fields and hedgerows. Loughmore Common was also surveyed from a viewpoint at the proposed site boundary. The approximate location of all species recorded was noted.

Breeding Bird Survey

A survey transect was walked through both fields at the proposed site allowing a view of the open fields and hedgerows. Loughmore Common was also surveyed from a viewpoint at the proposed site boundary. The approximate location of all species recorded was noted.

Approximate locations of all birds seen or heard, their numbers and behaviour were recorded by annotating field maps and taking notes. Breeding evidence such as singing males, agitated behaviour, carrying food and recently fledged young was recorded. The breeding status of all species encountered during surveys were classified into four categories: Confirmed (Br), Probable (Pr), Possible (Po) and Nonbreeder (N), based on British Trust for Ornithology (BTO) categories of breeding evidence, as detailed in Table 3-1. The surveys were conducted under dry, calm and light weather conditions.

² Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)

³ First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024)

Table 3-1: BTO categories of breeding bird evidence

Breeding status	Confirmed breeder (Br)	Probable breeder (Pr)	Possible breeder (Po)	Non-breeder (N)
Observed behaviours	Distraction display or injury feigning (DD)	Pair in suitable nesting habitat (P)	Observed in suitable nesting habitat (H)	Flying Over (F)
	Used nest or eggshells found from current season (UN)	Permanent Territory (T)	Singing Male (S)	Migrant (M)
	Recently fledged young or downy young (FL)	Courtship and Display (D)		Summering non-breeder (U)
	Adults entering or leaving nest site indicating occupied nest (ON)	Visiting probable nest site (N)		
	Adult carrying faecal sac or food for young (FF)	Agitated Behaviour (A)		
	Nest containing eggs (NE)	Brood patch of incubating bird (I)		
	Nest with young seen or heard (NY)	Nest Building or excavating nest hole (B)		

Survey Results

Sixteen species of bird were recorded across the proposed site during the winter bird surveys undertaken in 2024 (Table 3-2). Meadow Pipit and Redwing were recorded within the westernmost field and within Loughmore Common (outside of the proposed site boundary) during both surveys; these species are included on the BoCCI Red list. The remaining fourteen species recorded are common and widespread species within Ireland and are considered to be of least conservation concern (Green listed on the BoCCI). A single Snipe was observed within Loughmore Common during the survey completed in February 2024. No waders or waterbirds were recorded within the proposed site boundary and no areas of standing water suitable for use by waterbirds were present within the proposed site. No evidence of field feeding waterbirds, such as direct observation or the presence of droppings or feathers was recorded across the proposed site.

Table 3-2: Mungret LRD- results of winter bird survey 2024

Species	BoCCI	31/01/2024	29/02/2024
Blackbird	Green	✓	✓
Blue Tit	Green	✓	✓
Buzzard	Green		✓
Dunnock	Green		✓
Great Tit	Green	✓	✓
Hooded Crow	Green	✓	

Long-tailed Tit	Green		✓
Magpie	Green	✓	
Meadow Pipit	Red	✓	✓
Pheasant	Green	✓	
Raven	Green		✓
Redwing	Red	✓	✓
Robin	Green	✓	✓
Rook	Green	✓	✓
Wood Pigeon	Green	✓	
Wren	Green		✓

The findings of the breeding bird survey completed at the proposed site on 28th March, 16th May 2024, 2nd June 2024 and 10th June 2025 are presented in Table 3-3.

Avifaunal species recorded at the proposed site reflected the habitats present. The fields of agriculturally improved pasture supported relatively low levels of avifaunal diversity, with species recorded restricted to corvids, with Swallow flying over the fields in June 2024 and June 2025. Meadow Pipit was recorded foraging within the westernmost field in May 2024.

The treeline and hedgerow habitats at the field boundaries supported a higher diversity of bird species. Passerines such as Robin, Wren, Great Tit, Chaffinch, Blackcap, Linnet, Song Thrush and Mistle Thrush were recorded, in addition to several Blackbird. Of the bird species recorded at the proposed site, Meadow Pipit is on the BoCCI Red List (Highest Conservation Concern); Swallow, Linnet and Willow Warbler are on the Amber List (Moderate Conservation Concern); and the remaining species are on the Green List (Least Conservation Concern).

Of the above species, no evidence confirming breeding within the proposed site was recorded. As detailed in Table 3-3, several species were displaying behaviour that indicated that they possibly breed at the proposed site, such as singing or being present within suitable breeding habitat. With regards to Meadow Pipit, no evidence of breeding was recorded within the proposed site, however song flight was observed within Loughmore Common to the south of the proposed site, suggesting that this species breeds within the Common and forages within the proposed site.

Table 3-3: Results of breeding bird survey (March and July 2024)

Species	BoCCI	Breeding Evidence
Blackbird	Green	Po (S & H)
Blackcap	Green	Po (S)
Blue Tit	Green	Po (H)
Chaffinch	Green	Po (S & H)
Chiffchaff	Green	Po (S)
Dunnock	Green	Po (S)
Great Tit	Green	Po (H)
Linnet	Amber	Po (S)
Meadow Pipit	Red	Po (H)
Mistle Thrush	Green	Po (S)
Robin	Green	Po (S & H)
Rook	Green	Po (H)
Song Thrush	Green	Po (S)

Swallow	Amber	N (F)
Willow Warbler	Amber	Po (S)
Wood Pigeon	Green	N (F)
Wren	Green	Po (S)

No SCI species for River Shannon and River Fergus Estuaries SPA were recorded within the proposed site or adjacent lands within Loughmore Common during the surveys conducted in 2024 and 2025.

3.2.3 Surface Water

3.2.3.1 Water Bodies

The proposed site is located within the Ballynacloough_010 WFD Sub-basin and the Shannon Estuary South WFD Catchment. The Barnakyle River is located c.2.1km to the west of the proposed site. Mague Estuary Transitional Waterbody is situated c.5.7km to the west of the proposed site, this waterbody forms part of Lower River Shannon SAC as well as the River Shannon and River Fergus Estuaries SPA.

The proposed development overlies the Limerick City Southwest (GWB).

The EPA waterbody codes for the proposed site and its environs are included in Table 3-4.

Table 3-4: EPA Waterbody Codes

EPA Waterbody Name	Waterbody Type	EPA Code	EPA Waterbody Code
Barnakyle River	River	24BO5	IE_SH_24BO50600
Mague Estuary	Transitional	n/a	IE_SH_060_0700
Limerick City Southwest	Groundwater	n/a	IE_SH_G_141

3.2.3.2 Surface Water Quality and Risk Characterisation

Macroinvertebrate sampling for Q-value determination was conducted within the Barnakyle River as part of EPA's Water Framework Directive monitoring. The nearest sampling point is located within the Barnakyle River at "Bridge SE of Clarina" c.2.8km to the west of the proposed site. In 2023 the Q value score at Bridge SE of Clarina was 3-4, moderate. The Barnakyle River is classified as being of 'moderate' status under the WFD 2016-2021 round and is at risk of not meeting WFD objectives. The transitional water quality of Mague Estuary Transitional Waterbody is also classified as 'moderate' and has been assigned as 'at risk' under the WFD.

The Limerick City Southwest groundwater body is classified as "good" under the 2016-2021 WFD but is 'at risk' of not meeting WFD objectives.

3.2.4 Soils, Geology and Hydrogeology

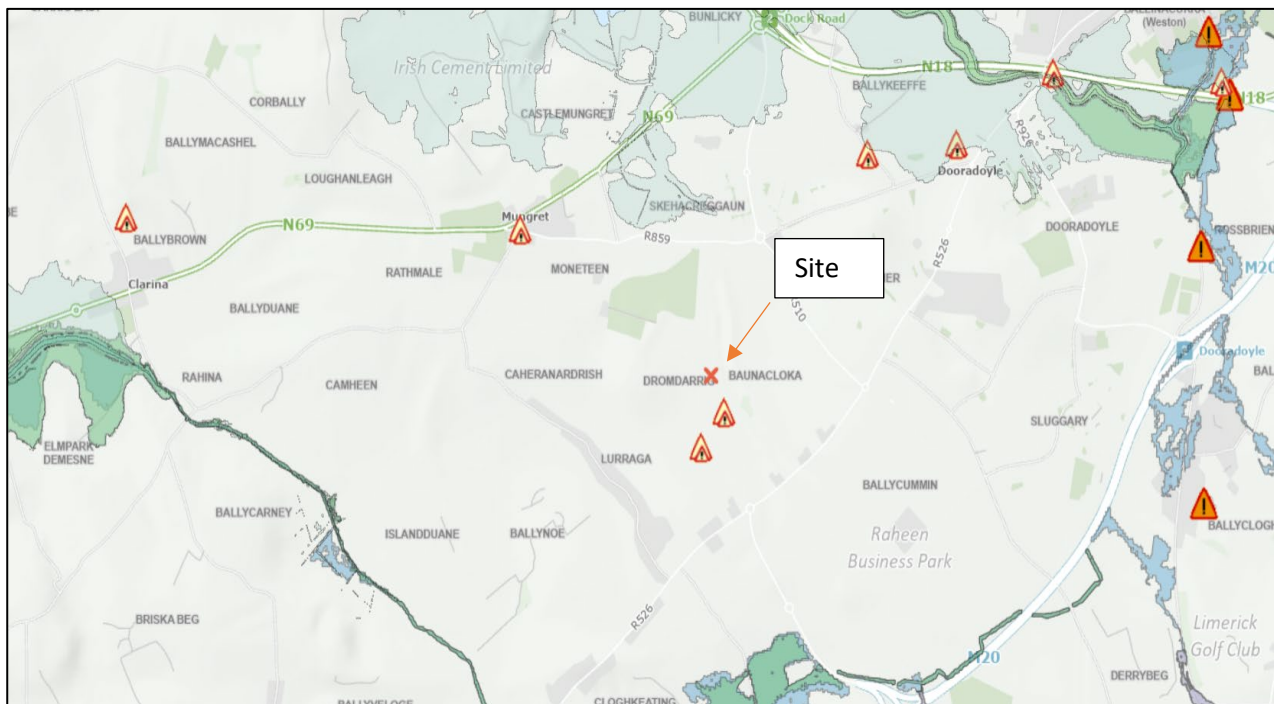
The Geological Survey of Ireland (GSI) online database ([Geological Survey Ireland Spatial Resources](#)) was consulted for available edaphic, geological and hydrological information of the proposed site and its environs. The proposed site is overlaid by BminDW, grey brown podzolics, brown earth (medium high base status soil). In terms of bedrock geology, undifferentiated limestone underlies the proposed site. The proposed site is mapped by the GSI as part of a locally important aquifer-bedrock which is generally moderately productive. Groundwater vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease at which groundwater may be contaminated. The study area is of

'high' groundwater vulnerability. There is one karst feature located in the vicinity of the proposed site: Loughmore Common Turlough, which is located adjacent to the southern boundary of the site.

3.2.5 Flooding

The Office of Public Works (OPW) flood mapping (<http://www.floodinfo.ie/map/floodmaps/>) indicates the flood extents for waterbodies in the environs of the application site. As indicated in Figure 3-1, the flood extents do not reach the application site.

Figure 3-1: OPW Flood Risk Mapping of the Application Site and its Environs



A Site Specific Flood Risk Assessment undertaken by DOBA (2025) concluded that there is no risk from Tidal, Fluvial, Pluvial, Groundwater or Human/ Mechanical Error Flooding. The site is located within Flood Zone C, therefore, no further detailed assessment is deemed necessary and the development is not at risk from flooding

3.3 Description of European Sites

This stage of the screening for AA process describes European sites within the likely zone of influence of the proposed development. The methodology for establishing the likely zone of influence is described in Section 2.3.2.

Connectivity between the proposed development and European sites has been reviewed. Connectivity is identified via the potential source-pathway-receptor model which identifies the potential impact pathways such as land, air, hydrological, hydrogeological pathways etc. which may support direct or indirect connectivity of the proposed development to European sites and/or their qualifying features.

In view of the location and characteristics of the proposed development (i.e. large-scale residential development, see Section 3.1) and the source, pathway and receptors of potential impacts, a 15km radius is considered an appropriate zone of influence to screen all likely significant effects that might impact upon the European sites. Establishment of the likely zone of influence is in line with EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC*.

The European sites located within 15km of the proposed development are outlined in Table 3-5 and Figure 3-2. There are 5 European sites located within 10km of the proposed development

1. Lower River Shannon SAC (002165)
2. Curraghchase Woods SAC (000174)
3. Tory Hill SAC (000493)
4. Askeaton Fen Complex SAC (002279)
5. River Shannon and River Fergus Estuaries SPA (004077)

Source – pathway – receptor dynamics were assessed for Lower River Shannon SAC, Curraghchase Woods SAC, Tory Hill SAC, Askeaton Fen Complex SAC and River Shannon and River Fergus Estuaries SPA.

There is no connectivity (via surface water, groundwater, air or other environmental vectors) between the proposed works and Curraghchase Woods SAC, Tory Hill SAC and Askeaton Fen Complex SAC therefore these sites will not be further considered as part of this screening for AA.

As detailed in Table 3-5, the proposed development supports potential connectivity to Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA via overland flow and groundwater movement to Loughmore Common Turlough and, in turn, Loughmore Canal, which eventually flows into the Mague Estuary. Therefore, these sites will be considered further in the below impact assessment.

Figure 3-2: European sites within 15km of the proposed development

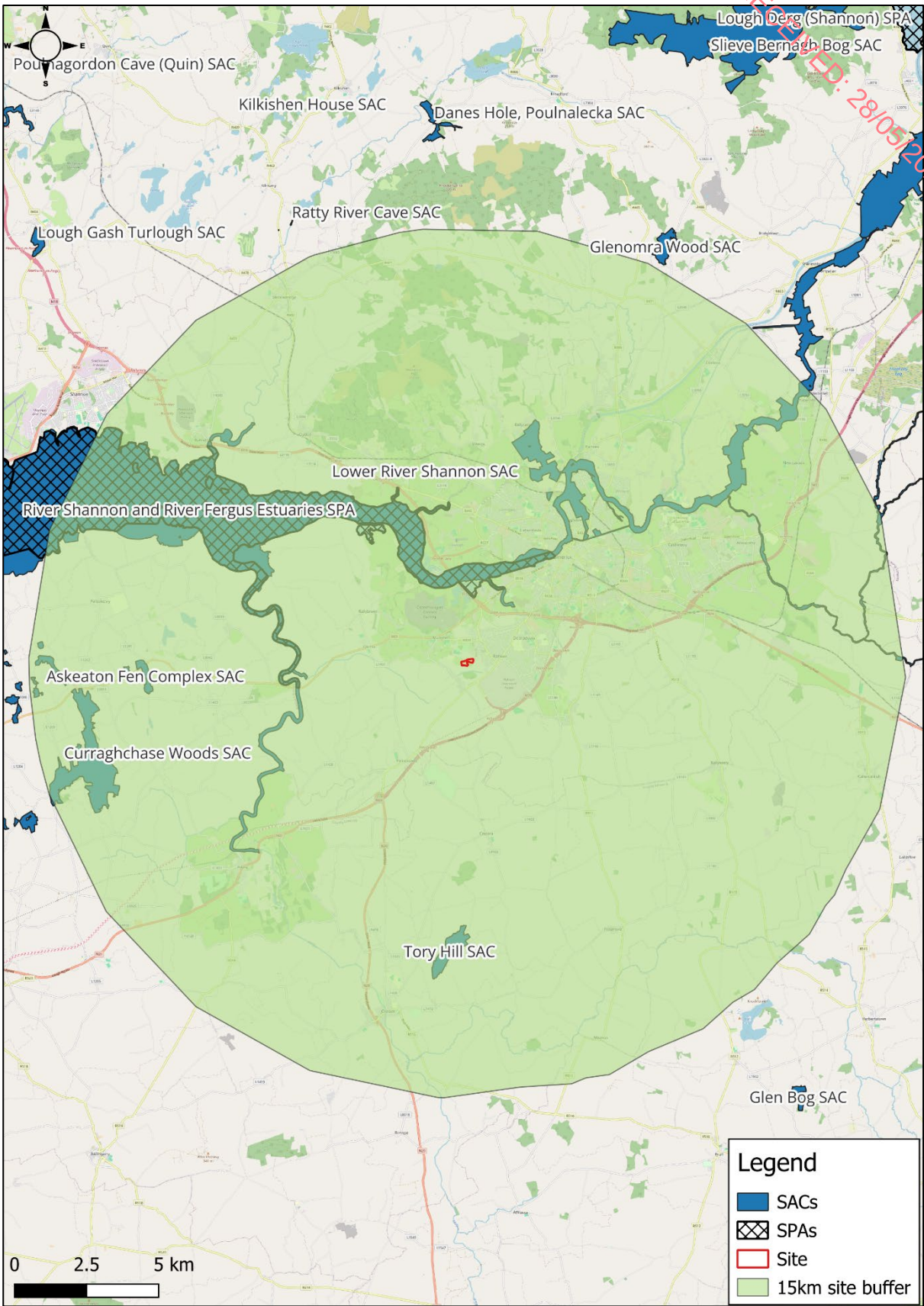


Table 3-5: European sites within 15km of the proposed development

Site Name and Code	Qualifying Features (Annex I Habitats/Annex II Species)	Distance from proposed works	Connectivity
Lower River Shannon SAC (002165)	Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra planeri</i> (Brook Lamprey) [1096] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349] <i>Lutra lutra</i> (Otter) [1355]	2.2km	There is no direct connectivity. There is potential remote indirect connectivity via overland flow or groundwater to Loughmore Common Turlough and Loughmore Canal, which drains to the Barnakyle watercourse and, in turn, Lower River Shannon SAC.
Curraghchase Woods SAC (000174)	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] <i>Taxus baccata</i> woods of the British Isles [91J0]	12.8km	There is no connectivity via surface water, groundwater or any other pathway.

	<i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016] <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat) [1303]		
Tory Hill SAC (000493)	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae [7210] Alkaline fens [7230]	9.2km	There is no connectivity via surface water, groundwater or any other pathway.
Askeaton Fen Complex SAC (002279)	Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae [7210] Alkaline fens [7230]	10.9km	There is no connectivity via surface water, groundwater or any other pathway.
River Shannon and River Fergus Estuaries SPA (004077)	Cormorant (<i>Phalacrocorax carbo</i>) [A017] Whooper Swan (<i>Cygnus cygnus</i>) [A038] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Teal (<i>Anas crecca</i>) [A052] Pintail (<i>Anas acuta</i>) [A054] Scaup (<i>Aythya marila</i>) [A062] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Grey Plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Knot (<i>Calidris canutus</i>) [A143] Dunlin (<i>Calidris alpina</i>) [A149] Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Greenshank (<i>Tringa nebularia</i>) [A164] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wigeon (<i>Mareca penelope</i>) [A855] Shoveler (<i>Spatula clypeata</i>) [A857] Wetland and Waterbirds [A999]	2.2km	There is no direct connectivity. There is potential remote connectivity via overland flow and movement of groundwater to Loughmore Common Turlough and Loughmore Canal, which drains to the Barnakyle watercourse and, in turn, River Shannon and River Fergus Estuaries SPA.

3.3.1 Conservation Objectives of European Sites

The integrity of a European site (referred to in Article 6.3 of the EU Habitats Directive) involves its constitutive characteristics and ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives (EC, 2018).

European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status areas designated as SAC and SPA. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The qualifying features for each site have been obtained through a review of the conservation objectives available from the NPWS ([Protected Sites in Ireland | National Parks & Wildlife Service \(npws.ie\)](https://www.npws.ie/Protected-Sites-in-Ireland)).

Site specific conservation objectives are available for Lower River Shannon SAC, Curraghchase Woods SAC, Tory Hill SAC, Askeaton Fen Complex SAC and River Shannon and River Fergus Estuaries SPA; these were accessed in September 2024 and October 2025. For brevity, the site-specific CO's are summarised thus:

- To maintain or restore the favourable conservation condition of Annex I habitats and Annex II species for which the SAC has been selected; and
- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for the SPA.

4 Screening Assessment Criteria

4.1 Management of European Sites

Appropriate Assessment is not required where the proposed development is connected with, or necessary to, the management of any European site. In this case, the proposed development is not directly connected with or necessary to the management of any European site(s).

4.2 Likely Direct, Indirect or Secondary Impacts of the Project on the European Sites

The proposed development is located outside the boundary of any European site; therefore, no direct impacts will occur through land take or fragmentation of habitats.

The proposed development will require groundworks including excavation for foundations, attenuation tanks, installation of drainage and utilities etc. and stockpiling of materials (soil, sand etc) during the construction phase. There is potential for run-off of deleterious substances from these works to the surrounding environment.

There are no watercourses or active drainage ditches within the proposed site and its immediate environs. The nearest waterbody is Loughmore Canal, which is located c.189m to the south of the site. Loughmore Common Turlough is located adjacent to the southern boundary of the proposed site. According to the Site Synopsis (NPWS, 2010), Loughmore Common Turlough pNHA floods shallowly in winter (30-40cm), however, no flooding was observed at Loughmore Common during the ecology site visits conducted between January 2024 and June 2025 and the Common may no longer flood on a regular basis. Applying the precautionary principle, it is assumed that there is potential for hydrological connectivity between the proposed site and Loughmore Canal via overland flow or movement of groundwater from the proposed site towards the canal. Loughmore Canal flows in a westerly direction into the Barnakyle watercourse which, in turn, flows into the Maigue Estuary and Lower River Shannon SAC and River Fergus Estuaries SPA.

The potential significant effects on European sites as a result of the proposed development are primarily related to a change in water quality within Lower River Shannon SAC and River Fergus Estuaries SPA and disturbance impacts, as discussed below.

4.2.1 Overview of Potential Impact Sources and Pathways

Pollutant washout to surface waters during the construction phase

Potential impacts resulting from construction phase civil engineering works near waterbodies are primarily related to three sources of possible water borne pollutants, i.e., suspended solids (sediment washout), concrete and hydrocarbons.

The potential pathway for these pollutants to enter nearby surface waters is via preferential overland flow paths and movement of groundwater.

- **Suspended Solids:** The principal source of potentially negative impact on aquatic receptors arises from the escape of excessive amounts of suspended solids / sediment during the construction phase. Sediment export can arise from earthworks and/or erosion of soil stockpiles and excavated areas relating to, e.g., temporary access routes, material stockpiles and excavation for foundations, utilities etc. Escaped solids can settle in watercourses, smothering plants and macroinvertebrates, causing fish to abandon the area at least in the short-term. This can result in reduced recruitment of young fish from affected reaches as a result of egg and fry mortalities and displacement of juveniles from nursery areas.
- Elevated concentrations of suspended solids and resulting turbidity within the water column can also potentially damage the gills, physiology and behaviour of fish (e.g., respiration, migration) and/or benthic macroinvertebrates (e.g., respiration, drift responses).

- Similar to salmonids, lampreys also depend on clean gravels for spawning, and although lamprey nursery areas depend on marginal sediments, excessive amounts of sediment deposition within a short time period could cause smothering of ammocoetes through loss of oxygen exchange.
- **Cement:** Owing to its highly alkaline and corrosive nature, cement is potentially toxic to instream fauna and can cause fish and invertebrate kills downstream. However, standard best practice in construction site layout and management means that the risk of wet concrete loss to surface waters at Loughmore Canal would be very low.
- **Hydrocarbons:** Hydrocarbons from construction sites can emanate from poorly maintained and leaky construction vehicles, mobile plant and cranes and stationery plant such as pumps and generators. Leakage from poorly secured or non-bunded fuel storage areas including spills during re-fuelling of plant and equipment can also occur. Hydrocarbon spills and leakages can result in contamination of groundwater, oil slicks and tainting of fish, or (if large enough) localised fish and invertebrate kills. This could be detrimental to trout eggs and young fry in spawning and nursery areas of in downstream receiving waters. Loss of hydrocarbons during the construction phase can be prevented / avoided through best practice in construction management.

As described above, run-off of water-borne pollutants, if severe, could potentially impact on water quality, which could also impact on fish stocks. In turn, a reduction in fish stocks may potentially impact on populations of Otter (*Lutra lutra*) and SCI species of wildfowl and waterbirds.

4.2.2 Lower River Shannon SAC

There will be no direct impacts on the aquatic habitats of Loughmore Canal, Barnakyle River, Maigue Estuary and Lower River Shannon SAC as the works have no riparian or instream physical footprint.

Loughmore Canal is an artificial drainage channel which was constructed by the Industrial Development Authority (IDA) in the 1970's as part of the development of the Raheen Business Park (RBP). The channel serves to convey stormwater drainage from the IDA stormwater system to the Barnakyle River. The canal runs for c.1km through Loughmore Common Turlough pNHA before discharging into a culvert under Caher Road c.380m to the south-west of the proposed site. The Canal discharges via the culvert into the Barnakyle River, which in turn drains into the Maigue River downstream and then joins the Shannon Estuary. An EPA surface water monitoring station, RS24B050600 Br SE of Clarina, located on the Barnakyle River downstream of the canal, recorded a moderate status (Q value score 3 – 4) in 2023. Biological Water Quality at this location has improved steadily from a Poor Status in 2007, and similar improving trends are evident in water chemistry data over the same period.⁴

Loughmore Canal is an artificial drainage channel that is dredged periodically and does not support suitable habitat for salmon spawning and nursery. Other than water quality, this drainage channel does not contribute to supporting conservation objectives for aquatic QI species for Lower River Shannon SAC (river, brook and sea lamprey, salmon and freshwater pearl mussel). The QI species river lamprey was recorded downstream of the proposed site in a fish stock survey of the Maigue Estuary undertaken by the Central and Regional Fisheries Boards in 2009 as part of the programme of monitoring for the Water Framework Directive (WFD)⁵. The Central and Regional Fisheries Boards report for the Maigue Estuary notes that the estuary receives waters from the River Maigue, which was a prime trout and salmon river until it was drained in the 1970's as part of an arterial drainage scheme. The Maigue catchment has very high nutrient export rates and has been

⁴ Environmental Protection Agency Office of Environmental Enforcement An Assessment of Stormwater Quality at EPA-licensed sites in Raheen Business Park A report to Limerick City & County Council 3 June 2025, available at: [090151b280939362.pdf](#), accessed 22/10/2025

⁵ [Maigue \(fisheriesireland.ie\)](https://fisheriesireland.ie)

rated as being of 'Moderate' status and 'At risk' under the WFD from 2016 to 2021. In view of these factors, the Maigue Estuary is not likely to act as a holding or migratory route for salmon and is unsuited to spawning and nursery for the species owing to tidal flow influence within the estuary. At worst, slightly elevated levels of turbidity or release of deleterious substances in association with construction works at the proposed site could temporarily affect the Maigue Estuary, however any small increment in turbidity will likely be imperceptible to lamprey. Likely effects on lamprey would be slight, and not significant. Nonetheless, applying the precautionary principle, it is assumed that there is potential for likely significant effects on sea and brook/river lamprey within Lower River Shannon SAC, in light of their conservation objectives, as a result of degradation of water quality.

The QI freshwater pearl mussel population for Lower River Shannon is located within the Cloon River in County Clare, there is no hydrological connectivity between the proposed development and the Cloon River.

A reduction in water quality may result in a reduction in prey species available for otter that forage within the Maigue Estuary. However, as noted above, any reduction in water quality is likely to be slight, temporary and localised. The high mobility and large foraging ranges of otter means that they are likely to be able to accommodate such localised changes in prey distribution and abundance. Loughmore Canal would not provide a sustained foraging resource for otter and, given the presence of an extensive culvert between Caher Road and Barnakyle River, is unlikely to provide a regular commuting route through the landscape. Therefore, no ex-situ visual and noise disturbance impacts on otter will occur during the construction or operational phase. Similarly, there is no potential for disturbance effects or a significant reduction in available prey species for Common Bottlenose Dolphin [1349] within Shannon Estuary.

The QI habitat Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation [3260], sub-type *Schoenoplectus triqueter*, Triangular Club-rush, has been recorded within the River Maigue. Applying the precautionary principle, there is potential for likely significant effects on this habitat as a result of a reduction in water quality.

Review of mapping within the Lower River Shannon SAC Conservation Objectives⁶, indicates that other QI habitats present within the SAC at its location within the Maigue Estuary downstream of the proposed site are limited to Estuaries [1130] and Mudflats and sandflats [1440], with an area of potential Atlantic salt meadow [1330] at the mouth of the estuary. Due to the dilution provided in the estuarine environment of the Maigue Estuary downstream of the site and naturally fluctuating levels of silt, impacts on estuarine habitats are only likely to arise from extremely severe levels of siltation. In view of the nature, size, scale and location of the proposed works, extreme levels of siltation within the Maigue Estuary and Lower River Shannon SAC are not expected to arise; no impacts on these Annex I habitats due to elevated silt levels during construction will occur. Likewise, given the nature, scale and location of the works, the robust nature of coastal qualifying habitats and the dilution provided in the estuarine/marine environment, no potential for likely significant effects on QI coastal habitats located further along the coast within Shannon Estuary (as listed in Table 3-5) has been identified.

There are no connecting pathways between the proposed development and the terrestrial QI habitats *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] and Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], therefore there will be no likely significant effects on these Annex I habitats as a result of the proposed development.

During the operational phase, the proposed development includes the use of Sustainable Urban Drainage System (SuDS) features, including, Bioretention areas, Bioswales, Rain gardens, Tree pits, Permeable paving,

⁶ [Site_specific_cons_obj \(npws.ie\)](http://npws.ie)

Infiltration trenches, Attenuation tanks and Petrol/oil interceptors. The design and management of surface water for the proposed development will comply with the policies and guidelines outlined in the Limerick Development Plan (2022 – 2028) and the CIRIA SuDS Manual. Wastewater will discharge by gravity to the proposed Type 3 Wastewater Pump Station (WwPS) situated to the west of the site. A rising main shall pump effluent to a manhole to the north of the site adjacent to the southern edge of the LIHAF road before discharging by gravity to the existing wastewater sewer installed on the LIHAF road⁷.

In view of these factors, no potential for likely significant effects on water quality within Mague Estuary and Lower River Shannon SAC during the operational phase of the proposed development has been identified.

4.2.3 River Shannon and River Fergus Estuaries SPA

In view of the nature, size, scale and location of the proposed works, a potential slight, short-term localised reduction in water quality (as described in Section 4.2.2) is not likely to result in significant impacts on the foraging resources of the SCI for River Shannon and River Fergus Estuaries SPA.

Disturbance/ displacement impacts on the SCI of River Shannon and River Fergus Estuaries SPA would require the development site and SPA site to be in close proximity to allow for visual or noise disturbance impacts. The proposed works are located c.2.2km south of River Shannon and River Fergus Estuaries SPA. The proposed site is not visible from River Shannon and River Fergus Estuaries SPA. In view of the separation distance between the SPA and the proposed site, there is no potential for disturbance to SCI species within River Shannon and River Fergus Estuaries SPA as a result of the proposed works.

While there is potential for ex-situ disturbance/ displacement impacts on highly mobile species that are designated as SCI of River Shannon and River Fergus Estuaries SPA (i.e. impacts outside of the boundary of the SPA), the proposed development footprint provides little ecological value for ground nesting wading birds and no SCI or Annex I species of bird were recorded within the site during the ecological surveys undertaken between January 2024 and June 2025. The site does not provide the open area with vantage sightlines favoured by passage and wintering waterbird species feeding opportunistically outside of a wetland area (such as River Shannon and River Fergus Estuaries SPA). Conversely, the wetland habitats of River Shannon and River Fergus Estuaries SPA provide high value habitats for waterbirds. No SCI species for River Shannon and River Fergus Estuaries SPA were recorded within Loughmore Common Turlough pNHA during the ecological surveys undertaken between January 2024 and June 2025.

The construction works will be localised to the proposed site, which is located c.2.2km outside of the SPA boundary. As such, there will be no disturbance of SCI species within River Shannon and River Fergus Estuaries SPA. Further, in view of the above detailed factors, no ex-situ disturbance/ displacement impacts of SCI species of River Shannon and River Fergus Estuaries SPA are anticipated during the construction or operational phase of the proposed development.

No likely significant effects on River Shannon and River Fergus Estuaries SPA have been identified during the operational phase.

4.2.4 Cumulative Impacts with Other Plans and Projects in the Area

As part of the screening for an AA, in addition to the proposed works, other relevant projects and plans in the region must also be considered at this stage and assessed in the context of potential for in-combination effects. These plans and projects are outlined and assessed in Table 4-1 below.

⁷ These surface water and wastewater management features have been provided in accordance with the requirement of Limerick Development Plan (2022 – 2028), which are required for residential developments regardless of the presence or otherwise of connecting pathways to European sites.

It is concluded that there will be no negative in-combination effects between the proposed development and plans or projects in the area.

Table 4-1: Other Projects and Plans that could result in potential cumulative impacts

Plan / Programme/Policy	Key Objectives/Policies/Proposals	Potential for In-combination Effects and Mitigation
Limerick County Development Plan 2022-2028	Limerick County Development Plan includes the following Objectives of relevance to this report: EH P1 Protection of Natural Heritage and Biodiversity: It is a policy of the Council to: a) Protect and conserve Limerick's natural heritage and biodiversity, in particular, areas designated as part of the European Sites Natura 2000 network, such as Special Protection Areas (SPAs) and Special Areas of Conservations (SACs), in accordance with relevant EU Directives and national legislation and guidelines. b) Maintain the conservation value of all Natural Heritage Areas and proposed Natural Heritage Areas (pNHAs) for the benefit of existing and future generations. EH O1: Designated Sites and Habitats Directive It is an objective of the Council to ensure that projects/plans likely to have significant effects on European Sites (either individually or in combination with other plans or projects) are subject to an appropriate assessment and will not be permitted under the Plan unless they comply with Article 6 of the Habitats Directive. The Council, will through the planning enforcement process where applicable, seek to restore the ecological functions of designated sites, where they have been damaged through inappropriate development.	Policies and objectives of the Limerick County Development Plan 2022-2028 ensure that local planning applications comply with proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in-combination effects on European Sites.
Water Action Management Plan 2024	The Water Action Plan includes targeted measures for all water bodies, with the objective of either protecting water bodies at good or high status or restoring water bodies to at least good status. Where further specific measures are needed in addition to those set in this plan, integrated catchment planning approaches will be used to identify and decide on further specific measures for each water body. This will be reported in 46 Catchment Management Work Plans. These will be used to locate measures within each catchment. The list of water bodies and their associated status, significant pressures/issues and targeted measures, which are to be included in the Catchment Management Work Plans, will include targets for the third-cycle, along with Key Performance Indicators to monitor progress and outcomes.	The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects to European sites. The implementation of this plan will have a positive impact for the biodiversity. It will not contribute to in-combination effects with the proposed development.
WWTP discharges	Limerick	Discharges from municipal WWTPs are required to meet water quality standards. Irish Water Capital Investment Plan 2020-2024 and

		Strategic Plan 2050 proposes to upgrade water treatment services countrywide. The long-term in-combination impact is predicted to be negligible.
IPPC Programme	Analog Devices International (P0224), Howmedica International S de R.L Trading as Stryker Orthopaedics, Redeneron Ireland Designated Activity Company, IMAG Optical Storage Limited and Adhesives Research Ireland; all located at Raheen Industrial Estate, c.0.7km to the south-east of the site at nearest. Irish Cement Limited (Limerick), located c.1.3km north-west of the site.	Discharges from these facilities are governed by strict limits to ensure compliance with quality standards. The long-term in-combination impact is predicted to be negligible.
Residential Development (Ref: 218000)	Development on circa 7.2 hectares of land zoned for development purposes within the Southern Environs Local Area Plan 2011 – 2017 (as extended). The proposed development seeks the construction of 253 no. residential units.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.
Post-primary School (Ref: 20735 and 20738)	Construction of a new 1000 pupil post-primary school circa 11,379sqm over 3 storey levels with rooftop plantroom and 450sqm photovoltaic panels. Incorporating Teaching spaces, Social spaces, Multi-purpose hall, Special Education Needs unit & ESB substation. A new site entrance & internal road with set-down area, car parking for 90no. spaces, covered bicycle stand, 6no. ballcourts, playing field, landscaping, new boundary treatments. Main access will be via new roadway with cycle lane and footpath which will be formed off the planned new distributor road with spur connection as granted permission 19/8011 and all associated site works on a 10acres site.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.

Residential Development (Ref: 211216)	The construction on Site A of 99no. residential units comprising 4no. 4-bed semi-detached dwellings, 4no. 3-bed terraced dwellings, 38no. 3-bed semi-detached dwellings, 2no. 3-bed detached dwellings, 12no. duplex apartments comprising 24no. 2-bed units, 9no. triplex apartments comprising 19no. 1-bed units and 8 no. 2-bed units, all with associated secure bicycle parking and bin storage.	The AASR completed for the development concluded that, through an assessment of the source-pathway-receptor model, which considered the ZOI of effects from the proposed development and the potential in-combination effects with other plans or projects, the following findings were reported: The proposed development, either alone or in-combination with other plans and/or projects does not have the potential to significantly affect any European site, in light of their conservation objectives. No potential for adverse in combination effects on European Sites has been identified.
Residential Development (Ref: 211217)	The construction on Site B of 99no. residential units. Further development on adjoining lands to application 211216.	The AASR found that no habitats of value for SCI species occur within the proposed site. No long-term in-combination effects on Natura 2000 sites will occur. The proposed development, either alone or in-combination with other plans and/or projects does not have the potential to significantly affect any European site, in light of their conservation objectives. No potential for adverse in combination effects on European Sites has been identified.
Residential Development (Ref: 201195)	The construction of 66no. residential units.	The main potential impacts would arise as a result of noise disturbance impacts on SCI bird species during construction. Given the distance from the SPA, no potential for significant effects has been identified. Further, adherence to the overarching policies and objectives of the Limerick County Development Plan 2022 - 2028 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations, there is no potential for adverse in combination effects on European Sites.

4.3 Screening Assessment

Table 4-2 identifies the potential direct, indirect and secondary impacts of the proposed development on European Sites within a 15 km radius.

Table 4-2: Potential Significant Effects on European Sites from the Proposed Development

Site Name and Code	Direct Impacts	Indirect / Secondary Impacts	Resource Requirements	Emissions (Disposal to land, Water or Air)	Excavation Requirements
Lower River Shannon SAC (002165)	No impact on QI	Potential impacts as a result of degradation of water quality	No impact on QI	Potential impacts as a result of degradation of water quality	No impact on QI
Curraghchase Woods SAC (000174)	No impact on QI	No impact on QI	No impact on QI	No impact on QI	No impact on QI
Tory Hill SAC (000493)	No impact on QI	No impact on QI	No impact on QI	No impact on QI	No impact on QI
Askeaton Fen Complex SAC (002279)	No impact on QI	No impact on QI	No impact on QI	No impact on QI	No impact on QI
River Shannon and River Fergus Estuaries SPA (004077)	No impact on QI	No impact on QI	No impact on QI	No impact on QI	No impact on QI

4.4 Likely Changes to the European Site(s)

The likely changes that could arise from the proposed development, have been examined in the context of a number of factors that could have a significant effect on the relevant European Sites (Table 4-3).

Table 4-3: Likely Changes to European Sites

Site Name and Code	Reduction of Habitat Area	Disturbance to Key Species	Habitat or Species fragmentation	Reduction in Species Density	Changes in Key Indicators of Conservation Value (Water Quality, etc.)	Climate Change
Lower River Shannon SAC (002165)	None	None	None	None	Potential impacts as a result of degradation of water quality	None
Curraghchase Woods SAC (000174)	None	None	None	None	None	None
Tory Hill SAC (000493)	None	None	None	None	None	None
Askeaton Fen Complex SAC (002279)	None	None	None	None	None	None
River Shannon and River Fergus Estuaries SPA (004077)	None	None	None	None	None	None

4.4.1 Elements of the Project where the Impacts are Likely to be Significant

Applying the precautionary principle, there is potential for likely significant effects on sea and brook/river lamprey and Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation within Lower River Shannon SAC, in light of their conservation objectives, as a result of degradation of water quality.

5 Conclusion

This AA screening report was completed with due regard to relevant European Commission guidance, national guidance and case law.

The potential impacts of the proposed development have been considered in the context of the European sites potentially affected, their qualifying interests or special conservation interests, and their conservation objectives.

Through an assessment of the source-pathway-receptor model, which considered the zone of influence of effects from the proposed development and the potential in-combination effects with other plans or projects, the following are the main conclusions:

- The proposed development is not located within any European site and therefore will not result in direct impacts.
- The habitats at the application site are not suitable to provide ex-situ support for any QI species or habitats or SCI species.
- Potential conduits to Lower River Shannon SAC are present via overland flow and groundwater movement to Loughmore Canal, which eventually flows into this European site. Applying the precautionary principle, there is potential for likely significant effects on QI species and habitats for Lower River Shannon SAC as a result of degradation of water quality.

In the absence of mitigation, and applying the precautionary principle, the potential for likely significant effects on the aquatic QI species Sea Lamprey [1095], Brook Lamprey [1096] and River Lamprey [1099] and QI habitat Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260] for Lower River Shannon SAC as a result of degradation of water quality cannot be excluded. Therefore, a Stage 2 Appropriate Assessment is considered necessary for Lower River Shannon SAC.

6 References

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