

RECEIVED: 05/09/2025

Natura Impact Statement

PROPOSED DEMOLITION AND CONSTRUCTION WORKS FOR RESIDENTIAL DWELLING AT
CARROWPHADEEN, LECARROW, CO. ROSCOMMON.

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1 Introduction

Beo Ecology has been commissioned by Gerard and Martina Conway to carry out a Screening for Appropriate Assessment (AA) and Natura Impact Statement (NIS) report for the following works at an existing residential dwelling; the proposed demolition of a front porch and rear extension that services an existing bungalow dwelling house, together with the construction of a single storey extension and replacement of the existing septic tank system with a suitable on-site sewerage system, at Carrowphadeen, Lecarrow, Co. Roscommon. The location of the site is presented in **Figure 1-1**.

This Screening for Appropriate Assessment and Natura Impact Statement has been prepared to provide the competent authority, Roscommon County Council, the relevant scientific information to conduct the Appropriate Assessment (AA). This information will allow Roscommon County Council to determine, in view of best scientific knowledge, if the proposed project, individually or in combination with other plans and projects is likely to have a significant effect on a European site and, where necessary, to ascertain whether or not the proposed project would adversely affect the integrity of a European site.

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.

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 Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act, 2000 - 2015 and the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011) as amended.

Articles 6(3) and 6(4) 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 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.

Article 6(3) of the Habitats Directive, transposed into Irish Law relevant to this project includes Part XAB of the Planning and Development Act, 2000-2019 and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Natura 2000 sites in Ireland (herein referred to as European sites) that form part of the Natura 2000 network of protected sites include Special Areas of Conservation (SACs) designated due to their significant ecological importance for species and habitats protected under Annexes I and II respectively of the Habitats Directive, and Special Protected Areas (SPAs), designated for the protection of populations and habitats of bird species protected under the EU Birds Directive (Council Directive 2009/409/EEC). Features for which SACs and SPAs are designated are termed Qualifying Interests and Special Conservation Interests respectively. Collectively, Qualifying Interests and Special Conservation Interests are herein referred to as Qualifying Features. As the proposed project is not directly connected with or necessary to the management of any European Site, Roscommon County Council as the competent authority, is obliged to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with other plans or projects, is likely to have a significant effect on European Sites.

The staged assessment process undertaken to meet Article 6(3) obligations is described in **Section 2** below.



Figure 1-1: Site Location of Proposed Works

2 Methodology

2.1 Stage 1: Screening for Appropriate Assessment

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

Whether a plan or project is directly connected to or necessary for the management of the site, and whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

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). Screening should be undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification will be needed in circumstances when the process ends at screening stage on grounds of no impact.

2.2 Stage 2: Appropriate Assessment (Natura Impact Statement)

The aim of Stage 2 of the 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 should then be amended accordingly, thereby avoiding the need to progress to Step 3.

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a Natura Impact Statement, i.e. the report of a targeted professional scientific examination of the plan or project and the relevant European sites, to identify and characterise any possible implications for the site in view of the site's conservation objectives, taking account of in-combination effects. This should provide information to enable the public authority to carry out the AA.

The information required in a Natura Impact Statement, is outlined in Regulation 42(5) (a) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011) as amended, as follows: A Natura Impact Statement shall, in addition to addressing the issues referred to in the interpretation contained in Regulation 2(1), include such information or data as the public authority considers necessary, and specifies in a notice given under paragraph (3), to enable it to ascertain if the plan or project will affect the integrity of the site.

Where appropriate, a Natura Impact Statement shall include, in addition—

- i. the alternative solutions that have been considered and the reasons why they have not been adopted,
- ii. the imperative reasons of overriding public interest that are being relied upon to indicate that the plan or project should proceed notwithstanding that it may adversely affect the integrity of a European site,
- iii. the compensatory measures that are being proposed.

If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 3, or the plan or project should be abandoned. The competent authority must make a determination to that effect before proceeding to the next stage.

2.3 Guidance

This Screening for AA report has been prepared with regard to the relevant provisions of the EU Council Directive 92/43/EEC and Ireland's EU (Birds and Natural Habitats) Regulations 2011 (as amended).

The methodology followed for this assessment has had regard to the following guidance and legislation;

- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland. Chartered Institute of Ecology and Environmental Management;
- CIEEM Version 1.1 (September 2019), Guidelines for Ecological Impact Assessment in the UK and Ireland;
- DoEHLG (2009, rev. 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government;
- EC (2000). Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg;
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- EC (2007a) 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. European Commission;
- EC, (2007b), Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. European Commission;
- EC (2013) Interpretation manual of European Union Habitats – EUR28. European Commission, DG Environment, Nature ENV B.3. EC (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;
- EC (2014) Article 6 of the Habitats Directive: Rulings of the European Court of Justice.
- EC (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;
- EC (2019) Commission notice "*Managing Natura 2000 sites, The provision of Article 6 of the Habitats Directive 92/43/EEC*". Brussels, 21.11.2019, C (2018) 7621 final. European Communities, Luxembourg.
- EC (2021) (Amended) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, European Communities, Luxembourg.
- EC (2021) (Amended). Commission notice "*Guidance document on the strict protection of animal species of Community interest under the Habitats Directive*". Brussels, 21.10.2021, C (2021) 7301. European Commission.
- The European Communities (Birds and Natural Habitats) Regulations 2011 as amended;
- European Union (Environmental Impact Assessment and Habitats) Regulations 2011 S.I No 473/2011 as amended,
- NPWS (2013). Ireland's Summary Report for the period 2008 – 2012 under Article 12 of the Birds Directive. National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;

- NPWS (2019), The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments Volume 2. Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- NPWS (2019), The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3, Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- Office of the Planning Regulator (March 2021), Appropriate Assessment Screening for Development Management. OPR Practice Note PN01;
- The Planning and Development Act 2000 (as amended);
- The Planning and Development Regulations 2001-2023; and
- Recent Irish and European case law on the Habitats Directive.

2.4 Information Consulted for this Report

A desk study was undertaken as part of this assessment. This has been informed by the following sources of data;

- Information on the location, nature and design of the proposed project as provided by the client;
- Department of Housing, Local Government and Heritage online land-use mapping (<https://www.myplan.ie/zoning-map-viewer/>);
- Department of Housing, Local Government and Heritage EIA Portal (<https://housinggov.ie/maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1>);
- Office of Public Works (OPW) National Flood Hazard Mapping website (www.floodmaps.ie);
- Environmental Protection Agency (EPA) geoportal mapping tool (<https://gis.epa.ie/EPAMaps/>);
- EPA Catchments interactive online mapping and data (<https://www.catchments.ie/>);
- All-Island Research Observatory (AIRO) Environmental Sensitivity Mapping (<https://airomaps.geohive.ie/ESM/>);
- National Parks and Wildlife Service protected site and species information and data (<https://www.npws.ie/protected-sites>);
- National Biodiversity Data Centre (www.biodiversityireland.ie);
- Geohive online environmental sensitivity mapping tool (<https://airomaps.geohive.ie/ESM/>);
- Geological Survey Ireland online mapping and data (<https://www.gsi.ie/en-ie/Pages/default.aspx>); and,
- Roscommon County Development Plan 2022-2028.

3 Stage 1: Screening for Appropriate Assessment

This section provides the information required for the competent authority (Roscommon County Council) to undertake a Screening for AA and determine in view of best scientific knowledge, whether the proposed works, individually or in combination with other plans and projects, is likely to have a significant effect on the European site. Specifically, it aims to:

- Provide information on, and assess the potential for the proposed works to significantly impact on European sites; and
- Determine whether the activities proposed, alone or in combination with other projects, are likely to have significant effects on European sites in view of their Conservation Objectives.

This screening assessment provides information to address the following elements:

1. Description of the plan or project, and local site or plan area characteristics. The description covers the full scope of the proposed plan or project (i.e. construction phase and operational phase).
2. Description of the receiving environment setting of the proposed plan or project and its surrounds.
3. Identification of relevant European sites within the projects the potential zone of influence. A preliminary assessment to determine connectivity between the proposed works and receptors (i.e. European sites and/or features for which the sites are designated). Where connectivity exists, the receptors in question are brought forward in the screening assessment process.
4. For receptors that exhibit potential connectivity to the proposed work a screening assessment is undertaken to establish whether the plan or project is likely to have a direct, indirect or cumulative effect on receptors based on a consideration of likely impacts (i.e. an assessment of significance of effect).
5. Screening statement with conclusions on whether or not an AA is necessary for the relevant a Qualifying Feature.

3.1 Project Description

The following are the proposed works at an existing residential dwelling; demolition of a front porch and rear extension that services an existing bungalow dwelling house, together with the construction of a single storey extension and replacement of the existing septic tank system with a suitable on-site sewerage system, at Carrowphadeen, Lecarrow, Co. Roscommon. The proposed works will include the installation of a TER 3 packaged tertiary percolation unit, which consists of a precast concrete package tertiary treatment system which further treats effluent from a secondary treatment system. This is recommended as per the Site Characterisation Report (Colye Environmental, 2022) which confirms the site is suitable to provide treatment for domestic sewerage via discharge to groundwater. It operates via the following:

- Secondary treated water from the tank is pumped and distributed via a pipe network with orificing shielding.
- Water is distributed evenly over the fibre safe bags which remove any residual solids and in particular greases which ensure long life use of the natural and synthetic mix fibre media.
- The waters then trickle through the fibre to receive final treatment and polishing before entering the percolation pipework over a bed of stone for distribution and final discharge to underlying soils.

The follow design measures will form part of the project as per Flood Risk Assessment, Langan Consulting Engineers, 2024:

- The estimated safe design flood level for the proposed dwelling is +38.30mOD. This is the 1 in1000-year flood level, including climate change, a freeboard factor and a model uncertainty factor to

provide a margin of safety in design. LCE recommend the damp proof membranes for all structures is constructed 0.1 meters above the safe design flood level.

- There is a residual flood risk at the subject site lands inherent in the design and maintenance of the adjacent drainage network.
- All site surface water management design should consider the impact of any discharge on flooding elsewhere. The final stormwater system should be designed by appropriately qualified and experienced personnel.
- The proposed layout of the development is optimised to result in a negligible overall impact on the existing flood storage on-site.

The location of the site is presented in **Figure 1-1**. The site layout and proposed works are presented in **Appendix A**.

3.2 European Sites within the Project Zone of Influence

This stage of the screening for AA process describes European Sites within the Zone of Influence (Zol) of the proposed project. A 15km buffer zone is recommended as per *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (DoEHLG, 2009, rev. 2010), however given the nature and scale of the proposed development it does not necessitate the adoption of this 15km buffer zone.

3.2.1 Zone of Influence

A Zone of Influence for a project is established on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors within vicinity of the proposed development. The Zol takes into account the potential for connectivity to ecological receptors through the Source- Pathway-Receptor (S-P-R) model.

The model identifies the source of likely significant impacts, if any, the pathway (land, air, hydrological, hydrogeological pathways, etc) along which those impacts may be transferred from the source to the receiving environmental receptors (i.e. European Sites and/ or features for which the sites are designated). Functional pathways can also include the use of an application site for foraging by a QI/SCI species of an SAC or SPA i.e. otter or migratory birds.

Given the size, scale and nature of this project and the proposed construction methodology it is considered for the purpose of this screening exercise that the Zone of Influence is the zone immediately surrounding the proposed development works and any hydrologically or hydrogeologically connected European Sites downstream of the works, where distances would be dependent on the qualifying interests of the site. For the purposes of this Screening for Appropriate Assessment, due to the small, localised nature of the works, the Zone of Influence includes European Sites supporting downstream hydrological connectivity and those located within close proximity to the proposed works.

Following the above rationale, there are two European sites located within Zol of the proposed works (See **Figure 3-1**) and these are listed below:

1. Lough Ree SAC (site code: 000440)
2. Lough Ree SPA (site code: 004064)

Where it is evident that there is no connectivity between the proposed work and receptors (i.e. European Sites and/ or features for which the sites are designated), the receptors are excluded from the AA process. Similarly, where connectivity exists between the proposed work and receptors but is deemed not to result in likely significant effects to the receptor, the receptor can be screened out (i.e. likely significant effects to receptors excluded; receptor not considered further in AA process).

In contrast to the above, where it is not possible to exclude likely significant effects on the basis of best scientific knowledge, a more detailed scientific assessment of the proposed works is required which focuses on the European sites likely to be affected and the relevant designated feature in question.

Figure 3-1 shows the European sites within the Zol of the proposed site. **Table 3-1** provides details on the distance and connectivity of European sites located within the Zol of the proposed works, in this case those located within close proximity of the proposed works and support downstream connectivity.

Table 3-1: European Sites within the Zol of the Proposed Development

Site Code	Site Name	Qualifying Interests (Habitats/Species)/ Special Conservation Interest Species	Distance from Study Area	Connectivity
000440	Lough Ree SAC	<u>Qualifying Habitats</u> Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Alkaline fens [7230] Limestone pavements [8240] Bog woodland [91D0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) [91E0] <u>Qualifying Species</u> <i>Lutra lutra</i> (Otter) [1355]	Located approximately 130m north-east of the SAC.	Potential Indirect Connectivity There is tenuous potential indirect connectivity to the SAC in the event of extreme flooding (1-in-1000-year event). Therefore, potential to impact upon the identified European site.
004064	Lough Ree SPA	<u>Qualifying Species</u> Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] Whooper Swan (<i>Cygnus cygnus</i>) [A038] Wigeon (<i>Anas penelope</i>) [A050] Teal (<i>Anas crecca</i>) [A052] Mallard (<i>Anas platyrhynchos</i>) [A053] Shoveler (<i>Anas clypeata</i>) [A056] Tufted Duck (<i>Aythya fuligula</i>) [A061] Common Scoter (<i>Melanitta nigra</i>) [A065] Goldeneye (<i>Bucephala clangula</i>) [A067] Coot (<i>Fulica atra</i>) [A125] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Lapwing (<i>Vanellus vanellus</i>) [A142] Common Tern (<i>Sterna hirundo</i>) [A193] Wetland and Waterbirds [A999]	Located approximately 175m north-east of the SAC.	Potential Indirect Connectivity There is tenuous potential indirect connectivity to the SPA in the event of extreme flooding (1-in-1000-year event). Therefore, potential to impact the identified European site.

3.3 Summary of Connectivity

There are two European sites located within the proposed works Zol; Lough Ree SPA and Lough Ree SAC. These sites support tenuous potential indirect connectivity to the proposed works. There is potential for indirect connectivity to occur at an extreme flood event (1-in-1000 year) from fluvial flood via Lough Ree. Therefore, potential for likely significant effects to occur upon the identified European sites and the surrounding environment.

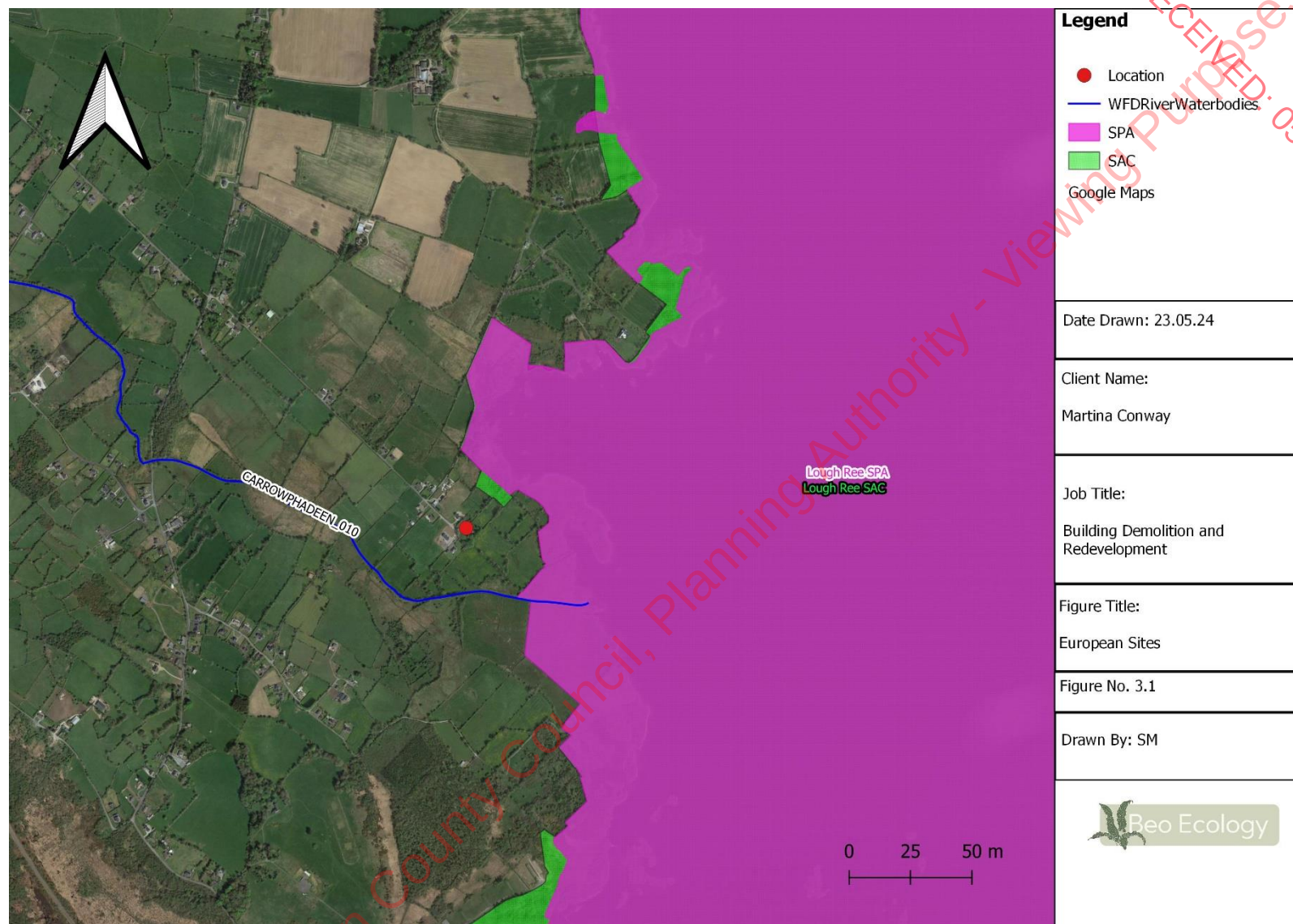


Figure 3-1: European Sites within the ZOI of the Proposed Works

3.4 European Site Descriptions

An overview site description for the European sites within the project ZOI are presented below. For greater detailed site descriptions for each site, see links to NPWS Site Synopses in the footnotes.

3.4.1 Lough Ree SAC (site code: 000440)¹

Lough Ree is the third largest lake in Ireland and is situated in an ice-deepened depression in Carboniferous limestone on the River Shannon system between Lanesborough and Athlone. The site spans Counties Longford, Roscommon and Westmeath. Some of its features (including the islands) are based on glacial drift. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi-aquatic habitats also occur. There is a population of Otter around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the E.U. Habitats Directive (NPWS, 2019).

3.4.2 Lough Ree SPA (site code: 004064)²

Lough Ree SPA is of high ornithological importance for both wintering and breeding birds. It supports nationally important populations of eleven wintering waterfowl species. The site has a range of breeding waterfowl species, notably nationally important populations of Common Scoter and Common Tern. Of particular note is the regular presence of three species, Whooper Swan, Golden Plover and Common Tern, which are listed on Annex I of the E.U. Birds Directive. Parts of Lough Ree SPA are Wildfowl Sanctuaries (NPWS, 2015).

3.5 Conservation Objectives of European Sites

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.

Favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

The integrity of a European site (referred to in Article 6.3 of the EU Habitats Directive) is determined based on the conservation objectives and of the site. The Qualifying Interests (QI) and Special Conservation Interests (SCI) are obtained through a review of the most recently published (web published or otherwise) Conservation Objective supporting documents and Site-Specific Conservation Objectives documents (where available) for the European site.

¹ [Lough Ree SAC Site Synopsis](#)

² [Lough Ree SPA Site Synopsis](#)

3.6 Conservation Objectives of Proximal European Sites

Lough Ree SAC: The detailed conservation objectives for Lough Ree SAC are provided in the Conservation Objectives document available on the NPWS website, as follows;

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000440.pdf

Lough Ree SPA: The generic conservation objectives for Lough Ree SPA are provided in the Conservation Objectives document available on the NPWS website, as follows;

https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004064.pdf

4 Existing Environment

4.1 Site Description

A site walkover was undertaken on the 4th July 2024 by Ecologist, Sheila Murphy BSc. MSc. MCIEEM. The habitats identified on site were classified in accordance with “A Guide to Habitats in Ireland” (Fossitt, 2000).³

Built and Artificial Surfaces (BL3)

The site consists of an existing dwelling house and associated outhouses and stone barns in the site yard. There are some large-scale remnant stonewalls from past buildings within the site footprint. These support dense ivy and appear to be used as storage for agricultural purposes. These old stonewall features have potential to support bats, in addition the existing dwelling supports a soprano pipistrelle roost, both are within the development footprint

Recolonising Bare Ground (ED3)

The main area of the site surrounding the existing house consists of recolonising bare ground and gravel. Species present scattered throughout include willow herb (*Epilobium sp.*) dandelion (*Taraxacum agg.*), nipplewort (*Lapsana communis*), daisy (*Bellis perennis*), groundsel (*Senecio vulgaris*), pineapple weed (*Matricaria discoidea*), red dead nettle (*Lamium purpureum*) and common poppy (*Papaver rhoeas*).

Hedgerows (WL1) and Scrub (WS1)

The eastern and southern section of the site support hedgerows with scrub understories. Species include blackthorn (*Prunus spinosa*), elder (*Sambuca nigra*), crap apple (*Malus sylvestris*), brambles (*Rubus fruticosus agg.*), nettles (*Urtica dioica*), cleavers (*Galium aparine*), herb Robert (*Geranium robertianum*), false oat grass (*Arrhenatherum elatius*) and willow (*Salix sp.*).

Treelines (WL2)

There is a treeline/ small-wooded stand of trees at the one of the older building ruins to the southwest of the site. This primarily consists of mature ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), and an understory of blackthorn, hogweed (*Heracleum sphondylium*), elder and sycamore seedlings. There are other additional trees scattered throughout the site, one such tree, a mature sycamore tree supports an owl box, to the southeast. There is also some older apple trees located to the east of the site.

Overall, the site supports high bat potential due to the existing infrastructure on site supporting a bat roost and the surrounding networks of hedgerows and treelines. Bats are not qualifying features of Lough Ree SAC or Lough Ree SPA, or surrounding European sites but they are a protected species under the EU Habitats Directive. No invasive alien plant species were identified within the project footprint during the site walkover.

³ [A Guide to Habitats in Ireland \(Fossitt, 2000\)](#). Alphanumeric codes for habitat classification are provided in accordance with ‘A Guide to Habitats in Ireland’ (Fossitt, 2000)



Image 4-1: Existing dwelling building on site (Bat Roost)



Image 4-2: Yard with old stone building infrastructure



Image 4-3: Old stone structure and old orchard to the east of the site



Image 4-4: Additional old stone building infrastructure and tree stand/treeline to the south-west

4.2 Surface Water

The EPA online mapping data (<https://gis.epa.ie/EPAMaps/>)⁴ was consulted for the water quality status of waterbodies identified within the study area. Lough Ree (IE_SH_26_750a) is located approximately 0.21km northeast of the proposed works site location. The WFD Lake Waterbodies Risk Score is classified as “not at risk”. The Lake Waterbody WFD Status 2016-2021 for Lough Ree is “Good”.

The Carrophadeen_010 IE_SH_26C230700 river is located approximately 190m south of the proposed works. This river is classified as under review as per the WFD River Waterbody River score. River Waterbody WFD Status 2016-2021 for the waterbody is “Moderate”. There are no River Q values for this waterbody.

4.2.1 Flooding

A detailed Flood Risk Assessment report was completed by Langan Consulting Engineers on the proposed site. This can be found in **Appendix B**. The report concluded the following:

Historic Flooding

- There is no historical reference to areas “liable to flooding” in the vicinity of the proposed development on available OS maps.
- No lands in the vicinity of the proposed development are identified as benefitting from OPW arterial drainage schemes.
- There is no evidence of alluvium soils within the vicinity of the proposed development lands.
- OPW PFRA, NIFM and CFRAM mapping does not identify any flood risk to the subject site.
- There is some statutory evidence of fluvial flood history in or, in the vicinity of the proposed development lands.
- The significant elevation difference from the highest recorded flood level (+37.10mOD) to the subject site (existing site ground levels between +40.125mOD to +45.850mOD) suggests that there was no impact of historic flooding to the subject site.

Proposed Development

- The proposed development comprises of an extension to an existing dwelling therefore, the development does not increase flood risk.

⁴ Accessed: June 2024

- The recommended minimum design flood level is +38.30mOD. The existing and proposed FFL is +45.30mOD. The elevations of the site access road range from +45.78 to 45.85mOD. Therefore, the site is assumed to be entirely located within Flood Zone C.
- The development does not impact or impede access to any watercourse, floodplain, or flood protection facility.

Note regards Flood Zone C in which the site is located:

The “Planning System and Flood Risk Management Guidelines” as published in November 2009 by the Department of the Environment, Heritage and Local Government use three different flood zones to define areas of flood risk. Flood zones are geographical areas within which the likelihood of flooding is in a particular range, and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning.

Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast).

4.3 Geology, Hydrology and Hydrogeology

The Geological Survey of Ireland (GSI) online⁵ database was consulted for available edaphic, geological and hydrological information of the site and its environs.

- The underlying bedrock of the proposed works location is Visean Limestones (undifferentiated), this is comprised of Undifferentiated limestone.
- The groundwater vulnerability of the site is primarily classified as an area of “High” vulnerability.
- There are no karst features within the vicinity of the proposed works.
- The EPA online database (<https://gis.epa.ie/EPAMaps/Water>) was searched for available information of the groundwater bodies and vulnerability.⁶
- The study site is located within the Funshinagh Groundwater Body (IE_SH_G_091). The WFD Ground Waterbody 2016-2021 data classifies this ground waterbody as having a “Good” status. The Water Framework Directive (WFD) ground waterbody risk classifies this groundwater body as “not at risk”.
- The site overlays a Regionally Important Aquifer (Rkc) -Karstified (conduit).

Groundwater and surface water interactions⁷ of Funshinagh Groundwater Body (IE_SH_G_091) is described as follows;

There is a high degree of interconnection between groundwater and surface water in this GWB. Numerous karst features such as turloughs, swallow holes and enclosed depressions are evident. Turloughs are seasonal lakes which are fed by groundwater as the water table rises in winter. These turloughs support sensitive ecosystems which are highly dependant on groundwater. Lough Funshinagh in the centre of the body is a large turlough which on occasion dries out completely. Because of the close interaction between surface water and groundwater in karstified aquifers, surface water and groundwater quality are also closely linked. Any contamination of surface water is rapidly transported into the groundwater system, and vice versa.

“Flow path lengths can be up to a several kilometres in length. Overall groundwater flow will be towards Lough Ree, but the highly karstified nature of the bedrock means that locally groundwater flow directions can be highly variable.”

⁵ <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>

⁶ <https://gis.epa.ie/EPAMaps/> Accessed: June 2024

⁷ [Funshinagh Groundwater Body](#)

5 Screening for Appropriate Assessment

5.1 Identification and Assessment of Potential Impacts

This section assesses the likely significant effects upon the Qualifying Interests (QI) of Lough Ree SAC and Lough Ree SPA as a result of the proposed works located at Carrowphadeen, Lecarrow, Co. Roscommon.

As outlined in the Flood Risk Assessment (see **Appendix B**) the proposed site is assumed to be entirely located within Flood Zone C. Flood Zone C is characterised as where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast).

However, the report also states with regards public available historical flood records for the River Shannon in winter 1999/2000 and River Shannon flooding events in December 1954, that due to the coarse in nature flood extents mapping, it is difficult to verify if this flood event has impacted the subject site. Therefore, although data indicates toward no risk of flooding within the proposed site, there is tenuous potential for impacts to the SAC/SPA in the event of an extreme flood event in the absence of mitigation measures being implemented.

Construction Phase:

The proposed works are not located in the SAC/SPA and the habitats within the study area are not Annex I habitats. The layout of the development site does not afford suitable sightlines for ground feeding overwintering birds for which Lough Ree SPA has been designated. The habitats within the project footprint are not suitable to support SCI species for which Lough Ree SPA is designated. The existing habitats will not be significantly altered as a result of the proposed works. There is tenuous indirect connectivity to the European sites from the proposed works in the event of an extreme flood occurrence during the construction phase which may lead to overland flow and surface water run-off of material i.e. silt, in the absence of mitigation.

Operational Phase:

The project design (**Section 3.1**) limits potential likely significant effects to the identified European sites during the operational phase, potential to a de-minimis threshold and therefore consequent effects to the European Sites, during an extreme flooding occurrence (1-in-1000-year event). It should be noted that there is no potential hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways.

Table 5-1 assesses the potential impact of the works on the QIs of Lough Ree SAC and **Table 5-2** assess the potential impact of the works on the SCIs of Lough Ree SPA.

Table 5-1: Impact Assessment of the Qualify Interests of Lough Ree SAC⁸

Habitat Code	Qualifying Interests (Annex I Habitat/ Annex II Species)	Conservation Objective ⁹	Impact Assessment
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation.	Restore	As the potential impacts are indirect hydrological in nature as a result of extreme flood events (Flood Area C: 1-in-1000-year event), there is tenuous indirect connectivity to this aquatic Annex I habitat during the construction phase, due to overland flow and surface water run-off.

⁸ It should be noted there are conflicting QIs listed on the NPWS website for Lough Ree SAC vs the NPWS Conservation Objective Document. Assessment based on the CO supporting document.

⁹ Restore – Restore Favourable Conservation Condition of QI. Maintain – Maintain Favourable Conservation Condition of QI

Habitat Code	Qualifying Interests (Annex I Habitat/ Annex II Species)	Conservation Objective ⁹	Impact Assessment
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	Restore	CO mapping indicates this Annex I habitat is located approximately 3km south of the proposed works. This a terrestrial habitat and as the potential tenuous connectivity is hydrological in nature and due to the distance of the Annex habitat from the proposed works it is not anticipated for impacts to occur to this Annex I habitat as a result of the proposed works.
7110	Active raised bogs	No COs set	CO mapping indicates this Annex I habitat is located to the northwest of Lough Ree. This is approximately 13km upstream of the proposed works. The site location does not support this Annex I habitat, in addition due to the nature of the connectivity and location upstream of the proposed works it is not anticipated for impacts to occur to this Annex I habitat as a result of the proposed works.
7120	Degraded raised bogs still capable of natural regeneration	Restore	CO mapping indicates this Annex I habitat is located to the northwest of Lough Ree. This is approximately 13km upstream of the proposed works. The site location does not support this Annex I habitat, in addition due to the nature of the connectivity and location upstream of the proposed works it is not anticipated for impacts to occur to this Annex I habitat as a result of the proposed works.
7230	Alkaline fens	Maintain	The COs state that the full extent of this Alkaline fens in the SAC is currently unknown. The main area is considered to occur in the vicinity of St. John's Wood, on the western side of the lake but there are likely to be additional areas around the lake. St. John's Wood is located approximately 5km north of the proposed works. It is not anticipated that the proposed works will impact on St. John's Wood due to the distance and the location of the habitat upstream of the proposed works.
8240	Limestone pavements	Maintain	This Annex I habitat is Located approximately 9km north-east of the proposed works and site, on the eastern boundary of the lake. It is not anticipated that the proposed works will impact on this habitat due to the location of the works, distance and the location of the habitat upstream of the proposed works.
91D0	Bog woodland	Restore	CO mapping indicates this Annex I habitat is located to the northwest of Lough Ree. This is approximately 13km upstream of the proposed works. The site location does not support this Annex I habitat, therefore it is not anticipated for impacts to occur to this Annex I habitat as a result of the proposed works.
91A0	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	The status of Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles as a qualifying Annex I habitat for the Lough Ree SAC is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this habitat	
1355	<i>Lutra lutra</i> (Otter)	Restore	The COs for this species indicates its presence all along the shoreline of Lough Ree. Due to the source-pathway connectivity to the SAC being hydrological, there is potential for indirect ex-situ negative impacts to occur to water quality via surface water run-off and overland flow during the construction phase, during an extreme flood event

Habitat Code	Qualifying Interests (Annex I Habitat/ Annex II Species)	Conservation Objective ⁹	Impact Assessment
			occurrence (1-in-1000 year) Therefore, potential to impact upon these water dependent species i.e. food source.

Table 5-2: Impact Assessment of the Qualify Interests of Lough Ree SPA

Habitat Code	Qualifying Interests (Annex I Habitat/ Annex II Species)	Conservation Objective ¹⁰	Impact Assessment
A004	Little Grebe (<i>Tachybaptus ruficollis</i>)	To maintain or restore the favourable conservation condition of the wetland habitat at Lough Ree SPA as a resource for the regularly occurring migratory waterbirds that utilise it.	The generic COs for this SPA requires the maintenance or restoration of wetland habitat for the site's SCIs. Due to the source-pathway connectivity to the SPA being hydrological in nature, there is potential for negative impacts to occur to water quality of this SPA and its supporting habitats via surface water run-off and overland flow during the construction phase, in the event of an extreme flood occurrence (1-in-1000 year). Therefore, potential to impact upon these water dependent species i.e. food source.
A038	Whooper Swan (<i>Cygnus cygnus</i>)		
A050	Wigeon (<i>Anas penelope</i>)		
A052	Teal (<i>Anas crecca</i>)		
A053	Mallard (<i>Anas platyrhynchos</i>)		
A056	Shoveler (<i>Anas clypeata</i>)		
A061	Tufted Duck (<i>Aythya fuligula</i>)		
A065	Common Scoter (<i>Melanitta nigra</i>)		
A067	Goldeneye (<i>Bucephala clangula</i>)		
A125	Coot (<i>Fulica atra</i>)		
A140	Golden Plover (<i>Pluvialis apricaria</i>)		
A142	Lapwing (<i>Vanellus vanellus</i>)		
A193	Common Tern (<i>Sterna hirundo</i>)		
A999	Wetland and Waterbirds		

Table 5-3: Screening Assessment Criteria

Screening Assessment Criteria Screening Questions	Impacts
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Sites.	The proposed works support tenuous indirect connectivity to the identified European sites, Lough Ree SAC and Lough Ree SPA. Construction Phase No QIs of the SAC occur within the footprint of the proposed works. In the occurrence of an extreme flood event, there is potential for tenuous indirect connectivity and negative impacts to occur to the SCIs of the Lough Ree SPA or QIs of Lough Ree SAC in the absence of mitigation measures. The proposed development comprises an existing dwelling with associated hard standing areas and boundaries. The layout of the

¹⁰ Restore – Restore Favourable Conservation Condition of QI. Maintain – Maintain Favourable Conservation Condition of QI

Screening Assessment Criteria Screening Questions	Impacts
	development site does not afford suitable sightlines for ground feeding over-wintering birds for which Lough Ree SPA has been designated. All of these existing features and the site's location within an existing residential area renders the site highly unsuitable for over-wintering birds. Furthermore, the proposed development site does not support watercourses or waterbodies and is unsuitable to support mobile species of qualifying interest for Lough Ree SAC. However, if no flood event occurs, the proposed dwelling site does not support any features, such as drainage channels or watercourses that could transfer potential pollutant sources from the project footprint and zone of influence to the wider environment and its associated European Sites. Operational Phase: Wastewater generated during the project operational phase will be treated via a tertiary treated system, eventually percolated to ground within the site and its immediate surrounds, as outlined in Section 3.1. Surface water run-off from the building's hard surfaces will be directed to a storm water soakaway area within the proposed residential site. Run-off from hard surfaces during the project operational phase will be retained to the project footprint. There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in the event of an extreme flood event (1-in-1000-year event), via hydrological pathways. However, the project design (Section 3.1) limits potential likely significant effects to the identified European sites during the operational phase, potential to a de-minimis threshold and therefore consequent effects to the European Sites, during an extreme flooding occurrence (1-in-1000-year event). It should be noted that there is no potential hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological vectors.
Likely direct, indirect or secondary impacts of the project on the European Sites:	
Size and Scale	The size and scale of the proposed works are small when compared with the surrounding environment and the size of the identified European Sites within the Zol.
Land Take	The proposed development does not take place within Lough Ree SAC or Lough Ree SPA. It will not result in land take of Annex I habitats or wetland habitats within the European sites.
Distance from European Sites or Key Features of the Site	The most proximal European Sites are Lough Ree SAC and Lough Ree SPA which are located approximately 130m and 175m northeast of the works, respectively. It should be noted that there is no potential hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological vectors.
Resource Requirements	The proposed dwelling site will require use of standard construction methods and materials. The use of these materials will not contribute to significant negative effects to European sites within the project Zol.

Screening Assessment Criteria Screening Questions	Impacts
Emissions	Construction Phase: Depending on the time of construction, there may be dust and waterborne emissions as a result of the proposed construction works. Operational Phase: Run-off from hard surfaces during the project operational phase will be retained to the project footprint. Surface water run-off from the building's hard surfaces will be directed to a storm water soakaway area within the proposed residential site. Wastewater will be treated in a suitability designed wastewater treatment system, as outlined in Section 3.1. Surface water run-off from the building's hard surfaces will be directed to a storm water soakaway area within the proposed residential site. There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in the event of an extreme flood event (smaller than 0.1% flood probability 1-in-1000-year event), via hydrological pathways. However, the project design (Section 3.1) limits potential likely significant effects to the identified European sites during the operational phase, potentially to a de-minimis threshold and therefore consequent effects to the European Sites, during an extreme flooding occurrence (1-in-1000-year event).
Excavation Requirements	Localised excavations within the proposed dwelling footprint will be required during the project's construction phase. These will be required to secure the dwelling's foundation and ancillary services. Excavations and excavation materials will be readily retained to the project footprint. There will be no significant effects to European Sites as a result of the proposed dwelling site.
Transport Requirements	Transport requirements as part of the proposed development construction will utilise the existing road network. Transport of construction materials will be ad-hoc, intermittent and restricted to working hours during the project's construction phase. Such requirements will be small scale and localised and will not impact European sites within the project ZOI.
Duration of construction, operation and decommissioning	Duration of construction will be short term; i.e. 12-18 months. The project's operational phase will be medium to long term; i.e. > 50 years.
Cumulative impact with other plans and projects in the area	As part of the Appropriate Assessment, in addition to the proposed development, other relevant projects and plans in the area must also be considered at this stage. These plans and projects are considered further in this respect in Table 5-2 below.

Table 5-4: In-combination Effects associated with the Proposed Development

Programmes, Plans and Projects	Potential for In-combination Effects
Roscommon County Development Plan 2022-2028	A number of strategies, policies and objectives are set out in the Roscommon County Development Plan 2022-2028 with the aim of protection of the county's natural heritage and biodiversity.

Programmes, Plans and Projects	Potential for In-combination Effects
	A number of policies and objectives provide for the protection of the integrity of sites designated under European and National legislation and ecological works. Such policies highlight the council's policy to support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites. The adherence and implementation of this plan within the Development Plan area will ensure that European sites are protected, and that Appropriate Assessment is undertaken for all plans, projects or programmes that have the potential for significant effects to European sites.
River Basin Management Plan for Ireland 2022-2027	The implementation of the RBMP seeks compliance with the environmental objectives set under the plan, which will be documented for each water body. This includes compliance with the European Communities (Surface Waters) Regulations S.I. No. 272 of 2009 (as amended). The implementation of the RBMP and achievement or maintenance of environmental objectives which will be set for the receiving water bodies will have a positive impact on water dependent habitats and species within European sites.
Inland Fisheries Ireland Corporate Plan 2021-2025 The Inland Fisheries Act 2010	The implementation and compliance with key environmental issues and objectives of this corporate plan will result in positive in-combination effects to European sites. The implementation of this corporate plan will have a positive impact for biodiversity of inland fisheries and ecosystems. It will not contribute to in-combination or cumulative impacts with the proposed development.
Local Planning Applications	Adherence to the policies and objectives of the Roscommon 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.

5.2 Conclusion of Cumulative Impact Assessment

Provided adherence to the overarching policies and objectives of the plans and programmes and best practice and mitigation measures* are implemented for individual projects, there is no potential for the mentioned plans and projects to have a cumulative impact to European sites, in combination with the proposed development (*this refers to projects which were permitted via full Stage 2 Appropriate Assessment). Screening Assessment Criteria is further assessed in **Table 5-5** below.

Table 5-5: Screening Assessment Criteria

Screening Assessment Criteria Screening Questions	
Describe any likely changes to the site arising as a result of the following;	
Reduction of Habitat	The proposed works will take place approximately 130m and 175m west of Lough Ree SAC and SPA, respectively. These works take place within an area which currently supports existing built infrastructure i.e. residential building and associated sheds. It will not result in a reduction of habitat associated with European Sites within the project Zone of Influence i.e. Annex I habitats designated as qualifying interests or impact upon SCIs.

Screening Assessment Criteria Screening Questions	
	It should be noted that there is no hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways.
Disturbance to Key Species	The proposed development will not result in the disturbance of key species associated with European Sites within the project Zone of Influence.
Habitat or Species Fragmentation	The proposed development works will not result in habitat or species fragmentation to European Sites within the project Zone of Influence. The proposed works will take place approximately 130m and 175m west of Lough Ree SAC and SPA, respectively. These works take place within an area which currently supports existing built infrastructure i.e. residential building and associated sheds. The works will not result in habitat fragmentation associated with European Sites within the project Zone of Influence i.e. Annex I habitats designated as qualifying interests. The site does not support habitats or species of the European Sites within the potential project Zone of Influence.
Reduction in Species Diversity	There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in the event of an extreme flood event (1-in-1000-year event), via hydrological pathways, in the absence of mitigation. The proposed works may have potential to result in the reduction in species diversity to European Sites within the project Zone of Influence i.e. reduction in water quality. However, there is no hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways.
Changes in Key Indicators of Conservation Value	There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in the event of an extreme flood event (1-in-1000-year event), via hydrological pathways, in the absence of mitigation i.e. during construction phase. The proposed development works may potentially result in likely significant negative effects that could in turn affect the conservation objectives of those European sites within the project Zol i.e. reduction in water quality via site flooding during an extreme flood event.
Climate Change	The proposed development site will not result in significant negative effects contributing to climate change that could in turn affect the conservation objectives of those European Sites within the project Zol.
Describe any likely impacts on the European sites as a whole in terms of Interference with key relationships that define the structure and function of the site.	The proposed development works will not result in significant negative effects contributing to climate change that could in turn affect the conservation objectives of those European sites within the project Zol.
Provide Indicators of Significance as a result of the identification effects set out above in terms of;	
Loss	There will be no direct or indirect loss of habitats or species of European Sites within the project footprint of its Zol.

Screening Assessment Criteria Screening Questions	
Fragmentation	There will be no direct or indirect loss of habitats or species of European Sites within the project Zol, it does not support habitats or species of European Sites within the potential project Zone of Influence. Therefore, the proposed development works will not result in fragmentation to European sites or their associated species and habitats of Qualifying Interest.
Disruption	There will be no direct or indirect disruption of habitats or species of European Sites within the project Zol. The site supports built and artificial surfaces (BL3), recolonising bare ground (ED3), hedgerows (WL1), treelines (WL2) and scrub (WS1). It does not support habitats or species of European Sites within the potential project Zone of Influence. Therefore, the proposed dwelling site will not result in disturbance of disruption to European sites or their associated species and habitats of Qualifying Interest.
Disturbance	There will be no direct or indirect disturbance of habitats or species of European Sites within the project Zol. The site supports built and artificial surfaces (BL3), recolonising bare ground (ED3), hedgerows (WL1), treelines (WL2) and scrub (WS1). It does not support habitats or species of European Sites within the potential project Zone of Influence. Therefore, the proposed dwelling site will not result in disturbance of disruption to European sites or their associated species and habitats of Qualifying Interest.
Changes to Key elements of the site	There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in the event of an extreme flood event (1-in-1000-year event), via hydrological pathways, in the absence of mitigation. There is no potential hydrological connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways. The proposed dwelling site during the construction phase may contribute to Changes to Key Elements of European sites within the project Zone of Influence i.e. reduction in water quality via site flooding during an extreme flood event (smaller than 0.1% flood probability (1 in 1000-year)).
Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts are not known.	The proposed dwelling site support supports tenuous indirect connectivity with the European sites in the event of an extreme flood event. Therefore, there may be potential changes to key elements of European Sites during an extreme flood event ((smaller than 0.1% flood probability (1 in 1000-year)) i.e. the reduction in water quality via site flooding during an extreme flood event during construction phase. However, it should be noted that there is no connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways.

5.3 Screening for AA Conclusion

This screening for Appropriate Assessment identifies and assesses potential significant effects which are likely to occur as a result of a proposed dwelling site and associated works at Carrowphadeen, Lecarrow, Co. Roscommon. The screening identified two European sites which are located within the zone of influence of the proposed works.

Tenuous indirect connectivity between the development site and Lough Ree SAC and Lough Ree SPA have been identified. It is considered that construction phase elements of the project, in particular potential overland flow during an extreme flood event (1-in-1000-year event), may have the potential to provide contributory effects to European sites within the project Zone of Influence without the implementation of best practice measures during the project construction phase. *Such pollution events would need to be large scale and sustained to contribute towards negative effects to European sites during the project's construction phase.*

Therefore, it cannot be concluded, that the proposed project, individually or in combination with other plans or projects, will not have a significant effect on the European sites, without the implementation of best practice construction measures to contain potential overland flow during the construction phase. Therefore Stage 2 Appropriate Assessment is required.

A Natura Impact Statement (NIS) has been prepared in **Section 6**, to provide scientific examination of the project to enable completion of an AA by the competent authority. The NIS will examine potential effects to European Sites screened in, as part of this Screening for Appropriate Assessment; Lough Ree SAC and Lough Ree SPA.

6 Stage 2: Natura Impact Statement

This section of the report provides the necessary information to inform AA to be completed by the competent authority, Roscommon County Council. This NIS provides the relevant scientific information to enable the competent authority in carrying out its AA to determine whether or not the proposed residential development would adversely affect the integrity of European sites.

The NIS assesses whether or not the proposed development would adversely affect the integrity of European sites within the project ZOI, for which effects could not be excluded during the Screening for AA (see **Section 5** for details). The European Sites are as follows:

- Lough Ree SAC (site code: 000440)
- Lough Ree SPA (site code: 004064)

6.1 Impact Assessment

6.1.1 Characterising Impacts

The methodology for the assessment of impacts has been prepared in accordance with the European Commission's *Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC* (EC, 2021). When describing changes/activities and impacts on ecosystem structure and function, the types of impacts that are commonly presented include the following:

- direct and indirect effects,
- short- and long-term effects,
- construction, operational and deconstruction / demolition effects, and
- isolated, interactive and cumulative effects.

Impacts that could potentially occur through the implementation of the project can be categorised under a number of impact categories as outlined in the EC 2002 document as follows:

- Loss/Reduction of habitat area,
- Disturbance to key species,
- Habitat or species fragmentation,
- Reduction in species density, and
- Changes in key indicators of conservation value such as decrease in water quality and quantity.

6.1.2 Meaning of 'Adversely Affect the Integrity of the Site'

The concept of the 'integrity of the site' is explained in the EU publication *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*, as follows;

'It is clear from the context and from the purpose of the directive that the 'integrity of the site' relates to the site's conservation objectives. For example, it is possible that a plan or project will adversely affect the integrity of a site only in a visual sense or only habitat types or species other than those listed in Annex I or Annex II. In such cases, the effects do not amount to an adverse effect for purposes of Article 6(3), provided that the coherence of the network is not affected. On the other hand, the expression 'integrity of the site' shows that focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will anyway remain favourable within the European territory of the Member State.'

As regards the connotation or meaning of 'integrity', this can be considered as a quality or condition of being whole or complete. In a dynamic ecological context, it can also be considered as having the sense of resilience

and ability to evolve in ways that are favourable to conservation. The 'integrity of the site' has been usefully defined as 'the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified'

A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required. When looking at the 'integrity of the site', it is therefore important to take into account a range of factors, including the possibility of effects manifesting themselves in the short, medium and long-term.

The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives.

6.2 Potential Effects from the Proposed Development to Qualifying Habitats and Species of European Sites within the Project Zone of Influence

Potential effects associated with the proposed development to the Qualifying Habitats and Species of European Sites within the project Zone of Influence are as follows:

- The Flood Risk Assessment (see **Appendix B**) confirms that the proposed works site is located in Flood Zone C where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast).
- However, the report also states with regards public available historical flood records for the River Shannon in winter 1999/2000 and River Shannon flooding events in December 1954, that due to the coarse in nature flood extents mapping, it is difficult to verify if this flood event has impacted the subject site. Therefore, although data indicates toward no risk of flooding within the proposed site, there is tenuous potential for impacts to the SAC/SPA in the event of an extreme flood event in the absence of mitigation measures being implemented.
- There is tenuous indirect connectivity to Lough Ree SAC and Lough Ree SPA in an extreme flood event i.e. less than 1 in 1000-year.
- Impacts such as siltation, nutrient release and/or contamination can result in or contribute to direct habitat loss or deterioration to features of Qualifying Interest for European sites, such as Lough Ree SAC and Lough Ree SPA in the case there is an extreme flooding event during the construction phase.
- Outputs and emissions (such as surface water run-off, construction phase run off, release of deleterious materials such as wet cement, hydrocarbons, silt laden water from stockpiled soils and aggregates etc.) from the proposed construction phase, in the case there is an extreme flood event during the construction phase. There is a tenuous risk of run-off from the proposed works via overland flow into Lough Ree SAC and Lough Ree SPA, in the case there is an extreme flood event during the construction phase.
- It should be noted that these pollution events would need to be large scale and sustained to contribute towards negative effects to downstream European sites during the project's construction phase.
- It should also be noted that there is no connectivity to the identified European sites, under normal non-flood conditions, this is due to distance between the proposed works and the SAC/SPA and the lack of viable ecological pathways.

6.3 Best Practice Design and Mitigation Measures

There is no hydrological connectivity between the identified European sites (Lough Ree SAC and Lough Ree SPAC) and the proposed project footprint due to the separation distance and lack of hydrological pathway, during normal non-flood conditions. There is no risk of run-off from the construction site to the receiving environment via overland flow or any other environmental vectors during non-flood conditions.

However, there is tenuous indirect connectivity to the European sites in the event of a 1 in 1000-year flood event occurs (flood probability is smaller than 0.1% (1 in 1000-year), during the construction phase. The follow best practice design and mitigation measures will be adhered too on site during the project's construction phase.

The measures outlined below will be implemented to ensure that any impacts on the receiving environment, Lough Ree SAC, Lough Ree SPA and the downstream European sites will be avoided during the project's construction phase, in the event of extreme flood occurrence (flood probability is smaller than 0.1% (1 in 1000-year). They will also ensure that all potential pollutant sources will be retained to the proposed development and will not enter the surrounding environment and QI habitats associated with European Sites within the project Zone of Influence.

The following guidelines and documents will be consulted during the planning of the works phase and the preparation of the development site prior to commencement of works:

- Good practice guidelines on the control of water pollution from construction sites developed by the Construction Industry Research and Information Association (CIRIA) in particular;
 - C532 Control of water pollution from construction sites: guidance for consultants and contractors (Masters-Williams *et al*, 2001);
 - SP156 Control of water pollution from construction sites – guide to good practice (Murnane *et al*, 2002); and
 - C648 "Control of Water from Linear Construction Project" (CIRIA, 2006)
- NRA (2008) *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes*. National Roads Authority, Dublin;
- NRA (2010) *Guidelines for the Management of Noxious Weeds and Non- Native Invasive Plant Species on National Roads*. National Roads Authority, Dublin;
- Murphy, D. (2004) *Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites*. Eastern Regional Fisheries Board, Dublin; 5.
- Irish Water (2016) *Information and Guidance Document on Japanese knotweed Asset Strategy and Sustainability*;
- Inland Fisheries Ireland (IFI) (2016) *Guidelines on protection of fisheries during construction works in and adjacent to waters*;
- DOMNR (1998) *Fishery guidelines for Local Authority works*. Department of the Marine and Natural Resources, Dublin.

Adherence and consultation with the above guidelines during the planning stage of the proposed development will ensure the retention of all potential pollutant sources emitted from the site within the site footprint.

6.3.1 Construction Phase

6.3.1.1 Storage/Use of Materials Plant & Equipment

- Prior to commencement of site work, a site compound location will be identified and created. This is to be located on flat, level terrain within the boundary of the proposed development site.
- Materials, plant and equipment shall be stored on flat / level terrain within the site compound. Plant and equipment will be parked in areas remote from any sensitive locations at the end of the working day.

- Hazardous liquid materials or materials with potential to generate runoff shall be stored in the site compound or off-site if possible.
- All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater.
- Plant and equipment to be used during works, will be in good working order, fit for purpose, regularly serviced/maintained and have no evidence of leaks or drips.
- No plant used shall cause a public nuisance due to fumes, noise, and leakage or by causing an obstruction.
- Re-fuelling of machinery, plant or equipment will be carried out within the proposed development site compound.
- All persons working will receive work specific induction in relation to material storage arrangements and actions to be taken in the event of an accidental spillage.

6.3.1.2 Surface Water Mitigation during Construction

The proposed works are located 130m and 175m from Lough Ree SAC and Lough Ree SPA, respectively, with indirect connectivity present via overland flow and surface water run-off in the case of an extreme flood event. The following mitigation measures will be carried out by the Contractor during the construction phase to prevent overland flow and surface water run-off from the proposed site footprint into Lough Ree SAC/SPA.

The proposed works during the construction phase support tenuous indirect connectivity to the identified European sites. The following mitigation measures will be put in place in the event the site begins to flood via rising waters from Lough Ree i.e. extreme flooding event:

- Silt fencing¹¹ will be installed along the boundary of the site from the direction of potential on-coming floodwater. Where it is not possible to dig down the silt fence, the base will be lined with double-bagged sandbags.
- The silt fencing will retain and regulate any surface water run-off from the proposed development site footprint to the surrounding environment.
- The following outlines the procedure for the installation of silt fencing on site. See footnote for additional images and installation guide¹².
 - Silt fences are constructed using woven geotextile material which is secured into the ground and kept upright (vertical) by wooden posts.
 - Geotextile is a permeable fabric that will allow water to pass through it, but will capture and retain fine particles or suspended solids. In this way it acts as a filtration system should a construction site experience lateral flow of surface water during or following rainfall events.
 - The geotextile is secured into the ground by first preparing a shallow excavation (<300mm depth). Where excavations cannot be undertaken due to outcropping rock or existing built surfaces, the silt fence may be secured using handheld sandbags or kelly blocks (precast concrete blocks).
 - The bottom of the geotextile is secured into the excavation, lapped inward towards the construction site and is subsequently backfilled with the excavated material. This way the geotextile is secured into the ground and not susceptible to becoming unsecured or torn during high winds, ongoing construction works etc.

¹¹ <http://www.geosyn.co.uk/product/silt-stop-premium-and-high-flow-silt-fences>

¹² <https://www.geosyn.co.uk/wp-content/uploads/2017/07/Silt-Stop-Installation-Guide-1.pdf>

- The middle and upper sections of the silt fence are pulled vertical and secured by a series of wooden posts. The silt fence is secured to the wooden posts by staples or a rope which can be fed through the geotextile and tied to the wooden post.
 - The structural integrity of this silt fence will be checked routinely by the appointed contractor and repairs made as necessary. The silt fence will only be removed once the site has been sufficiently secured and all construction works have ceased, stockpiles used or removed and exposed soils have been allowed to recolonise sufficiently.
- Due to the nature of the works, site location and excavation depths, groundwater pumping is not anticipated. However, if flood waters begin to encroach on the site, pumping maybe required to dewater the site.
 - Standard construction phase filtering of surface water for suspended solids will be carried out. Where required, over-pumped water will be directed to a settlement (attenuation) tank and allowed to settle. Once settled the water will be released at controlled (greenfield) rates to pastoral lands away from the proposed development footprint/flooding for percolation to ground.

6.3.1.3 Use of Concrete

The NRA (now TII) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes, provides useful best practice and guidance on construction of bridges: <https://www.tii.ie/tii-library/environment/construction-guidelines/Guidelines-for-the-Crossing-of-Watercourses-during-the-Construction-of-National-Road-Schemes.pdf>

In addition, the following will be adhered to regards the use and working with of concrete and cementitious materials on-site:

- When working in or near the surface water / water body and the application of in-situ materials cannot be avoided, the use of alternative materials such as biodegradable shutter oils shall be used;
- Any plant operating close to the water will require special consideration of the transport of concrete from the point of discharge from the mixer to final discharge into the delivery pipe (tremie). Care will be exercised when slewing concrete skips or mobile concrete pumps over or near surface waters;
- There will be no hosing of concrete, cement, grout or similar material spills into surface water drains. Such spills shall be contained immediately and runoff prevented from entering the watercourse;
- Concrete waste and wash-down water will be contained and managed on site to prevent pollution of all surface watercourses;
- Equipment where possible will be washed down offsite;
- Wash down locations will comprise of a container that will capture the washout material / water for reused or disposal offsite;
- Washout from concrete lorries, with the exception of the chute, will not be permitted on site and will only take place at the batching plant (or other appropriate facility designated by the manufacturer);
- Chute washout will be carried out at designated locations only;
- Any spillage of cementitious materials will be cleaned up and mitigated for immediately; and,
- Any pouring of concrete will only be carried out in dry weather.
- Pouring of concrete for aprons, sills, and other works i.e. foundations, should be carried out in the dry and allowed cure for 48 hours before re-flooding.
- Pumped or ready mixed concrete should be monitored carefully to ensure no accidental discharge into the watercourse.
- Mixer washings and excess concrete should not be discharged to surface water.

6.3.1.4 Waste Management

- Any hazardous material or other hazardous wastes are to be removed and kept separate from other C & D waste materials and then disposed of at a licensed remote facility.
- Other C & D waste materials will be collected into receptacles for subsequent separation, and transported from site by a registered waste contractor for disposal at a licensed remote facility.

6.3.1.5 Environmental Incidents and Accidents

An emergency-operating plan shall be established to deal with incidents or accidents during construction that may give rise to pollution within any watercourse/ water body. This shall include means of containment in the event of accidental spillage of hydrocarbons or other pollutants (including oil booms, soakage pads, etc.)

- Throughout all stages of the construction phase of the proposed Project the Contractor shall ensure that good housekeeping is maintained at all times and that all site personnel are made aware of the importance of the freshwater environments and the requirement to avoid pollution of all types;
- Fuel and hydraulic fluids will be stored within a designated section of the site compound. Drip trays will be placed underneath all stationary vehicles to prevent leaks impacting groundwater or the environment.
- Temporary bunds for oil/diesel storage tanks will be used on the site during the construction phase of the Project as appropriate;
- No washings or waste materials of any kind will be directed into the sites discharge channels.
- Machinery on site will have pollution control kits.
- Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the Project and an emergency response plan shall be in place, in case of accidental spillage;
- Raw or uncured waste concrete will be disposed of by removal from the site; and
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of.

6.3.1.6 Invasive Species Best Practice Measures

Biosecurity Measures

There is potential that invasive species may be accidentally introduced to a location via contaminated vehicles and equipment, in particular tracked vehicles, which were previously used in locations that contained invasive species. Adapted from the *Irish Water Guidance* (2016), the following best practice avoidance measures will help to contain and/or prevent the introduction of invasive species on a site as follows:

1. All plant and equipment employed on the proposed works (e.g. diggers, tracked machines, footwear etc.) must be thoroughly cleaned down using a power washer unit, and washed into a dedicated and contained area prior to arrival on site and on leaving site to prevent the spread of invasive aquatic / riparian species such as (but not limited to) Japanese knotweed (*Reynoutria japonica*) and Himalayan Balsam (*Impatiens glandulifera*). A sign off sheet must be maintained by the contractor to confirm cleaning.
2. Material gathered in the dedicated and contained clean down area will be appropriately treated as contaminated material on site.
3. For any material entering the site, the supplier must provide an assurance that it is free of invasive species.

6.3.1.7 Vegetation Clearance

No scrub clearance, tree-felling or other removal of vegetation should occur during the bird breeding season from 1st March to 31st August. Restrictions on cutting hedgerows are set out in Section 40 of the Wildlife Act

1976 as amended by the Wildlife (Amendment) Act 2000 and the Heritage Act 2018. These Acts stipulate that it is an offence to destroy vegetation on uncultivated land between the **1st of March** and the **31st of August** each year (NPWS).

6.3.2 Operational Phase

The Flood Risk Assessment (see **Appendix B**) confirms that the proposed works site is located in Flood Zone C where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast). The operational phase will be developed as per outlined design in Section 3.1.

6.4 NIS Conclusion

The AA Screening (see **Section 5**) found that it could not be excluded, on the basis of objective scientific information that the proposed works, individually or in combination with other plans or projects, would not have a potential contributory effect on a European site without the implementation of best practice measures being implemented during the project construction phase. Therefore, a NIS (presented in **Section 6**) was undertaken to ascertain whether the proposed works would have an adverse effect on the integrity of European sites within the project Zol.

Construction best practice and mitigation measures (as outlined within **Section 6.3**) have been identified to ensure that potential pollutant sources are not released from the proposed development to the receiving environment such that there will be no risk of adverse effects on these Qualifying Features of European sites within this project's Zol. **It has been concluded that the development of the proposed dwelling site construction works will not adversely affect the integrity of a European site, and there is no reasonable scientific doubt in relation to this conclusion**

Findings of No Significant Effects Matrix			
Name of Plan or Project		The proposed works at an existing residential dwelling; demolition of a front porch and rear extension that services an existing bungalow dwelling house, together with the construction of a single storey extension and replacement of the existing septic tank system with a suitable on-site sewerage system, at Carrowphadeen, Lecarrow, Co. Roscommon.	
Names and locations of relevant Natura 2000 sites		There are two European sites located within the project's Zol; Lough Ree SAC and Lough Ree SPA. There is tenuous indirect connectivity to the identified European sites in the event of an extreme flood event i.e. 1-in-a-1000-year event.	
Description of Plan or Project		The proposed works at an existing residential dwelling; demolition of a front porch and rear extension that services an existing bungalow dwelling house, together with the construction of a single storey extension and replacement of the existing septic tank system with a suitable on-site sewerage system, at Carrowphadeen, Lecarrow, Co. Roscommon.	
Is the project or plan directly connected with or necessary to the management of the site (provide details)?		No	
Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)		No	
The Assessment of Significance of Effects:			
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.		There are two European sites located within the project's Zol. There is tenuous indirect connectivity via hydrological pathways to the identified European sites in the event of an extreme flood event i.e. 1-in-a-1000-year event, during the construction phase.	
Explain why these effects are not considered significant.		There are two European sites located within the project's Zol; Lough Ree SAC and Lough Ree SPA. There is tenuous indirect connectivity to the identified European sites in the event of an extreme flood event i.e. 1-in-a-1000-year event. However, the site is located in Flood Zone C, where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast). The classification of the site in Flood Zone C and the adherence of best practice construction measure, it is not anticipated that any negative impacts will occur to the European sites as a result of the proposed works.	
List of agencies consulted: provide contact name and telephone or e-mail address.		N/A	
Response to consultation.		N/A	
Data Collected to Carry Out the Assessment:			
Who carried out the assessment?	Sources of Data	Level of Assessment	Where can the full results of the completed assessment be accessed and viewed?

Findings of No Significant Effects Matrix			
Sheila Murphy B.Sc. M.Sc. MCIEEM	1. Site visit conducted on the 4th July 2024. 2. NPWS Site Synopses, Conservation Objectives and backing documents and NATURA 2000 Forms for the relevant Natura 2000 sites 3. Remote sensing images and aerial photographs. 4. Drawings and information of the proposed works as supplied by the client.	Stage 1 Screening for Appropriate Assessment	The full results of the completed assessment should be available to be viewed through Roscommon County Council.

Appendix A: Proposed Works Layout

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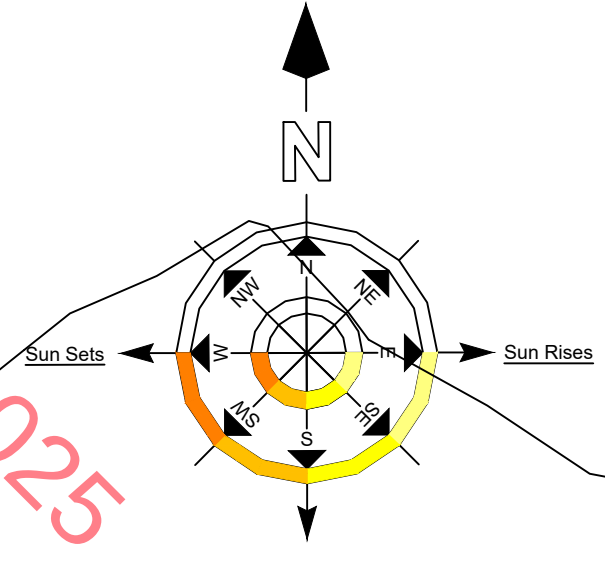
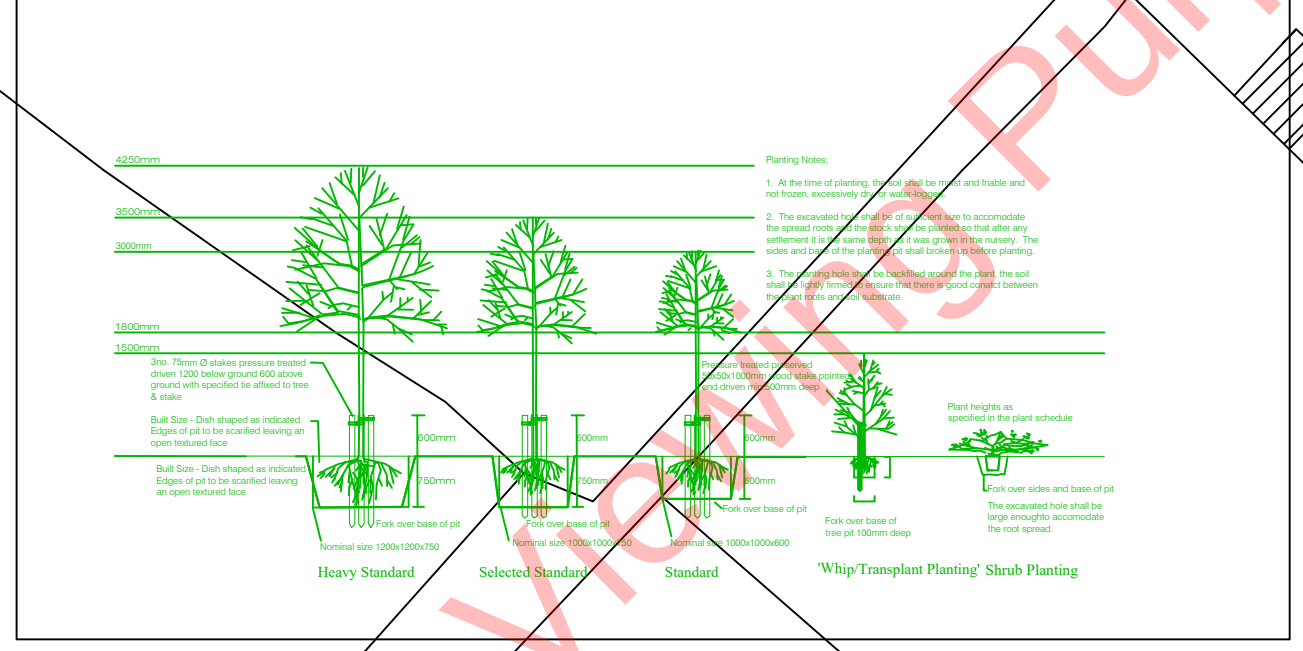
Ordinance Survey Ref: 2827

Area Of Site = 2.50 Acres/ 1.01 Hectares

Second Site Notice Located At Junction Of Public Road

Table 4.2: Minimum separation distance from the entire DWWTs		
Features	DWWTs periphery of tank/plant and infiltration/ treatment area (m)	
Public/group water supply abstraction points/wells	60	
Down-gradient domestic well	3 <= PV <= 10 usually SAND- or GRAVEL- dominated material	60
	Depth of soil/subsoil > 2.0 m between invert level and bedrock, and water table 1.2-2.0 m	40
	Depth of soil/subsoil > 8.0 m between invert level and bedrock, and water table > 2.0 m	30
10 <= PV <= 30 usually SILT- or SAND- or silty GRAVEL- dominated material	Depth of soil/subsoil 1.2-8.0 m between invert level and bedrock	45
	Depth of soil/subsoil > 8.0 m between invert level and bedrock	30
30 <= PV <= 100 usually SILT- or CLAY- dominated material	Depth of soil/subsoil 1.2-3.0 m between invert level and bedrock	40
	Depth of soil/subsoil > 3.0 m between invert level and bedrock	30
Alongside domestic well		25
Up-gradient domestic well		15

Features	DWWTs - periphery of tank/plant and infiltration/ treatment area (m)
Karst features	15
Lake or forshore	50
Watercourse/stream	10
Open drain or drainage ditch	10
Adjacent tank/plant and percolation area, polishing filter or infiltration area	10
On-site dwelling house	7 (tank/plant) 10 (free water surface constructed wetland) 10 (infiltration/ treatment area)
Neighbouring dwelling house	7 (tank/plant) 25 (free water surface constructed wetland) 10 (infiltration/ treatment area)
Surface water soakaway*	5
Road	4
Slope break/banks	4
Trees†	3
Site boundary	3
Heritage features: NAWS/CAC/PPW	See note
PN percolation valve	
*The soakaway for surface water drainage should be located down-gradient of the infiltration/treatment area; it should also be ensured that this distance is maintained from neighbouring storm water disposal area or soakaway.	
†Tree roots may lead to PPHs developing. The canopy spread indicates potential root coverage	
*The distances required depend on the importance of the feature. Therefore, advice should be sought from the local authority and/or from the Department of Housing, Local Government and Heritage, specifically the National Monuments Service and the National Parks and Wildlife Service	



New Hedges shall be comprised of native species including at least 5 of the following: blackthorn (*Prunus spinosa*), whitethorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), crab apple (*Malus sylvestris*), downy birch (*Betula pubescens*), guelder rose (*Viburnum opulus*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*), pendunculate oak (*Quercus robur*), rowan (*Sorbus aucuparia*), spindle (*Euonymus europaeus*), whitebeam (*Sorbus aria*), wild cherry (*Prunus avium*), elm (*Ulmus glabra*).

PROPOSED SOAK PIT INTO WHICH THE SURFACE WATER FROM THE PROPOSED GRAVEL ROAD SHALL BE PIPED INTO

PROPOSED SOAK PIT INTO WHICH THE ROOF RAINWATER RUNOFF WILL BE PIPED INTO AFTER BEING COLLECTED BY THE DWELLING'S GUTTERS & DOWNPIPES

Proposed Boundary Wall To Be Backplanted With Semi Mature Native Deciduous Trees

Proposed New Treatment System & Percolation Area (See Attached Report)

- EXISTING STONE WALL
- EXISTING DWELLING
- PROPOSED DEMOLITION
- PROPOSED EXTENSION

Approximate Ground Spot Levels Only
F.F.L. +0.5m Above Existing Ground Level At Front Building Line

Extent Of Site Outlined In Red
Extent Of Landholding Outlined In Blue

LOCATION OF SITE NOTICE N.1

Existing Stone Wall & Hedges To Be Maintained

Existing Septic Tank

Existing Hedges To Be Maintained

Existing Stone Wall To Be Maintained

Existing Hedges To Be Maintained

Existing Shed To Be Maintained

Existing Stone Wall To Be Maintained

Existing Entrance To Be Maintained

Existing Dwelling

Existing Storage Shed

Existing Stone Wall To Be Maintained

Proposed Timber Post & Rail Fence To Be Backplanted With Semi Mature Native Deciduous Trees



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WORKING WITH YOU FROM THE GROUND UP

Drawing Title: **Site Layout**

Dwg. No.	Drawn By:	Scale	Status	Date
01	David Silva	1:500	F.I.	July '24

Project:
Proposed Demolition Of A Front Porch And Rear Extension That Services An Existing Bungalow Type Dwelling House Together With The Construction Of A Single Storey Extension To The Rear And Side Of The Existing Bungalow Type Dwelling House Together With Replacing The Existing Septic Tank System With A Suitable Onsite Sewerage System With Polishing Filter And All Ancillary Site Works At Carrowphadeen, Lecarrow Co Roscommon For Gerard and Martina Conway.

Appendix B: Flood Risk Assessment

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FLOOD RISK ASSESSMENT

CARROWPHADEEN, LECARROW, CO. ROSCOMMON

MS. MARTINA CONWAY

24147-RP-2301-FL01 | SEPTEMBER 2024

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QUALITY CHECK SHEET

DOCUMENT TITLE: FLOOD RISK ASSESSMENT

PROJECT TITLE: CARROWPHADEEN, LECARROW, CO. ROSCOMMON

CLIENT: MS. MARTINA CONWAY

DOCUMENT REF: 24147-RP-2301-FL01

REVISION	DESCRIPTION	ISSUE DATE	PREPARED BY	CHECKED BY	APPROVED BY
DR01	Draft Issue	12 th of September 2024	PC	TMcH	Mr. James Langan
FL01	Final Issue	23 rd of September 2024	PC	TMcH	Mr. James Langan

AUTHOR, CHECKER AND APPROVER DETAILS		
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Mr. James Langan	Director, Langan Consulting Engineers	B.E. CEng MIEI FConcEI

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1 PROJECT DETAILS

1.1 INTRODUCTION

Planning is sought for the proposed construction of a two-storey extension to an existing bungalow type dwelling house with associated ancillary site works at Carrowphadeen, Lecarrow, Co. Roscommon. A Flood Risk Assessment (FRA) is required to support the planning application. Mr. Mark Cunningham (Cunningham Planning & Design Ltd.) is appointed by the client to act as planning agent. Langan Consulting Engineers (LCE) are appointed by Mr. Mark Cunningham to carry out a FRA for the project.

This FRA comprises of:

- Desk study
- Detailed assessment based on the Office of Public Works (OPW) "Planning System and Flood Risk Management Guidelines" as published in November 2009 by the Department of the Environment, Heritage and Local Government¹

The location of the subject site at ITM coordinates 599487, 751305 is shown in Figure 1-1 and Figure 1-2 below.

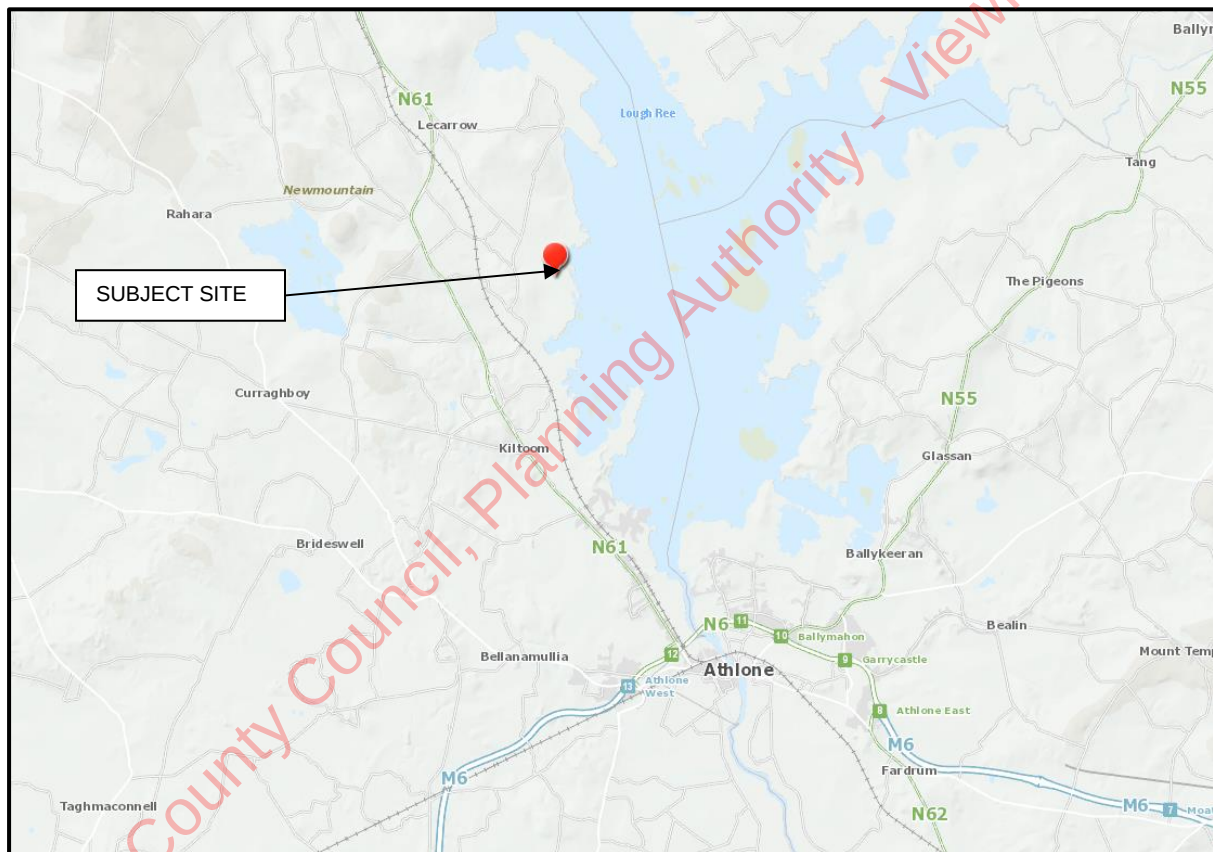


Figure 1-1 Location of the proposed subject property

¹ "Planning System and Flood Risk Management Guidelines" published in November 2009 by the Department of the Environment, Heritage and Local Government, including the Technical Appendices.



Figure 1-2 Aerial image of the proposed subject property

1.2 STUDY AREA

The study area considered for this report focus on:

- The subject property, within the red line boundary
- The primary access to the subject property

1.3 ASSUMPTIONS

This report is based on the following assumptions:

- All development information is based on a data provided by the Client
- It is assumed all 3rd party information is current and accurate
- Prediction of future flood levels is based on available historical records
- The impact climate change will have on future trends is accounted for, however there remains a residual uncertainty in the prediction of the impact of climate change on flooding
- The findings are subject to adequate design and maintenance of drainage networks and flood defences
- It is assumed that CFRAM Ordnance Datum levels are provided based on the OSGM02 Geoid
- It is assumed that survey data levels received are provided based on the OSGM15 Geoid.
- OSGM15 is assumed 0.02m below OSGM02.
- It is assumed that Poolbeg datum is 2.7m below Malin Head datum, even though transformations are subject to localised anomalies.

1.4 ABBREVIATIONS AND DEFINITIONS

1.4.1 ABBREVIATIONS

AEP	Annual Exceedance Probability
AFA	Area for Further Assessment
CFRAM	Catchment Flood Risk Assessment and Management
CIRIA	Construction Industry Research and Information Association
EPA	Environmental Protection Agency
FFL	Finished floor level
FRA	Flood Risk Assessment
GL	Ground level
GSI	Geological Survey of Ireland
ha	hectares
ITM	Irish Transverse Mercator
LCE	Langan Consulting Engineers Ltd
mOD	Meters Ordnance Datum (Malin, unless otherwise noted)
MRFS	Mid-range Future Scenario
OPW	Office of Public Works
PFRA	Preliminary Flood Risk Assessment
RBMP	River Basin Management Plans
SAAR	Standard Annual Average Rainfall
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage Systems

1.4.2 KEY DEFINITIONS

<i>Fluvial flooding</i>	<i>Riverine flooding, where excessive flooding over an extended period of time causes a river to exceed its capacity</i>
<i>Pluvial flooding</i>	<i>Surface water flooding caused directly from heavy rainfall events (rather than over-flowing rivers)</i>
<i>Coastal/tidal flooding</i>	<i>Risk of flooding from tidal surge events from the sea and/or estuarine levels. Low atmospheric pressure, wind, tide, and storm surges can result in higher or lower tides and can cause wave over-topping in exposed areas.</i>
<i>Groundwater flooding</i>	<i>Where groundwater levels rise above ground level, it can pond at local points/depressions and cause periods of groundwater flooding</i>

2 SITE CHARACTERISTICS

2.1 SITE TOPOGRAPHY

2.1.1 EXISTING TOPOGRAPHY

The subject site is a brown-field site in a rural location. The subject site is bounded by agricultural lands to the north, east and south. Access to the site is via the existing access road to the west. The FFL of the existing dwelling and proposed extension is 45.30mOD. The elevations of the site access road range from +45.78 to 45.85mOD. Elevations within the site range from +40.125mOD to +45.850mOD².

2.2 SITE DRAINAGE CHARACTERISTICS

The closest hydraulic feature to the subject site is the Carrowphadeen stream. This is located approximately 200m south of the subject dwelling. The next closest hydraulic feature to the subject site is Lough Ree. This is located approximately 300m east of the subject dwelling.

An overview of the regional drainage network is outlined in Figure 2-1. An overview of the local drainage network is outlined in Figure 2-2.

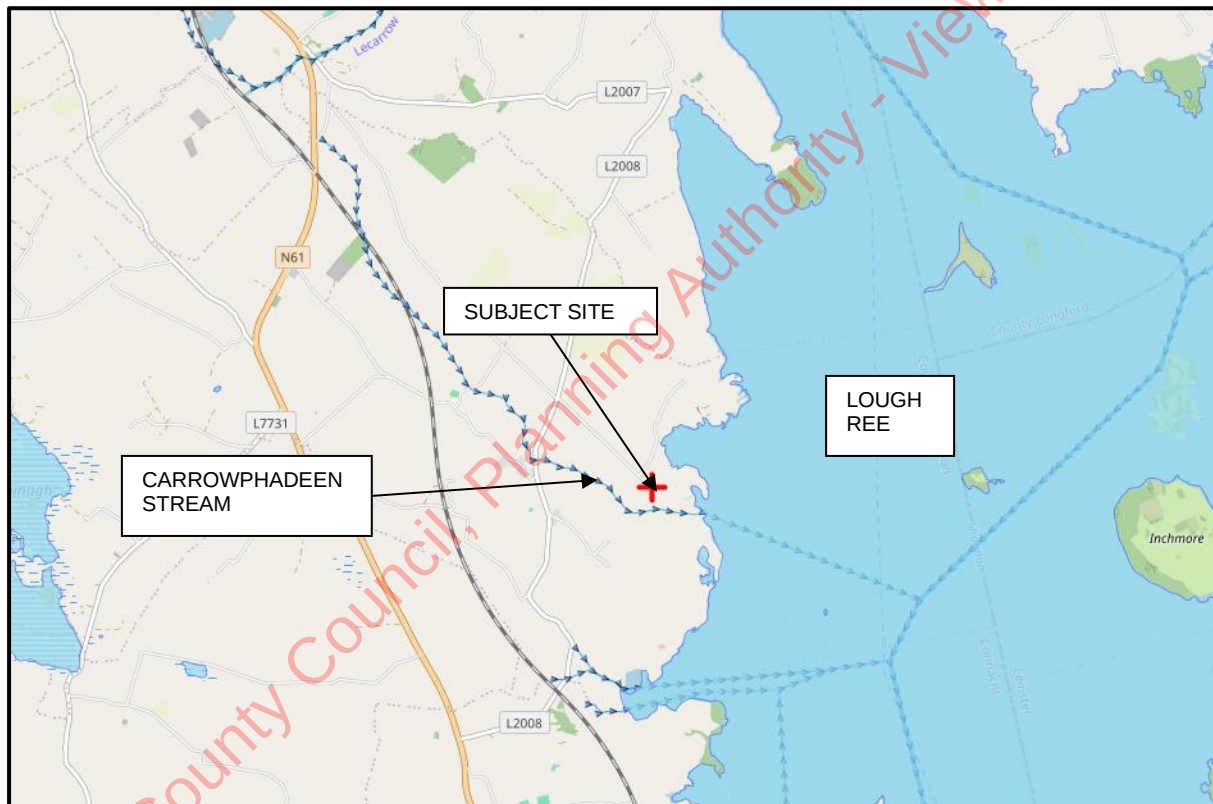


Figure 2-1 Regional drainage network overview³

² Levels based on site layout plan received on 7th of August 2024.

³ gis.epa.ie/EPAMaps/

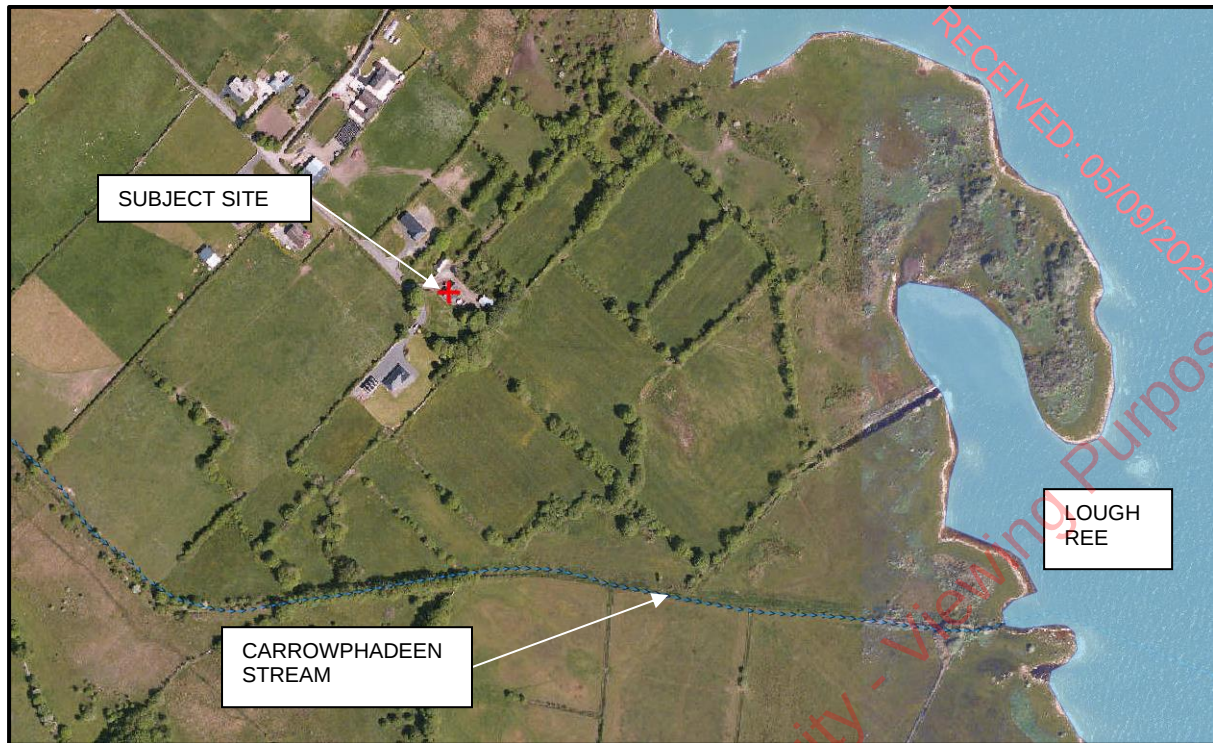


Figure 2-2 Local drainage network overview²

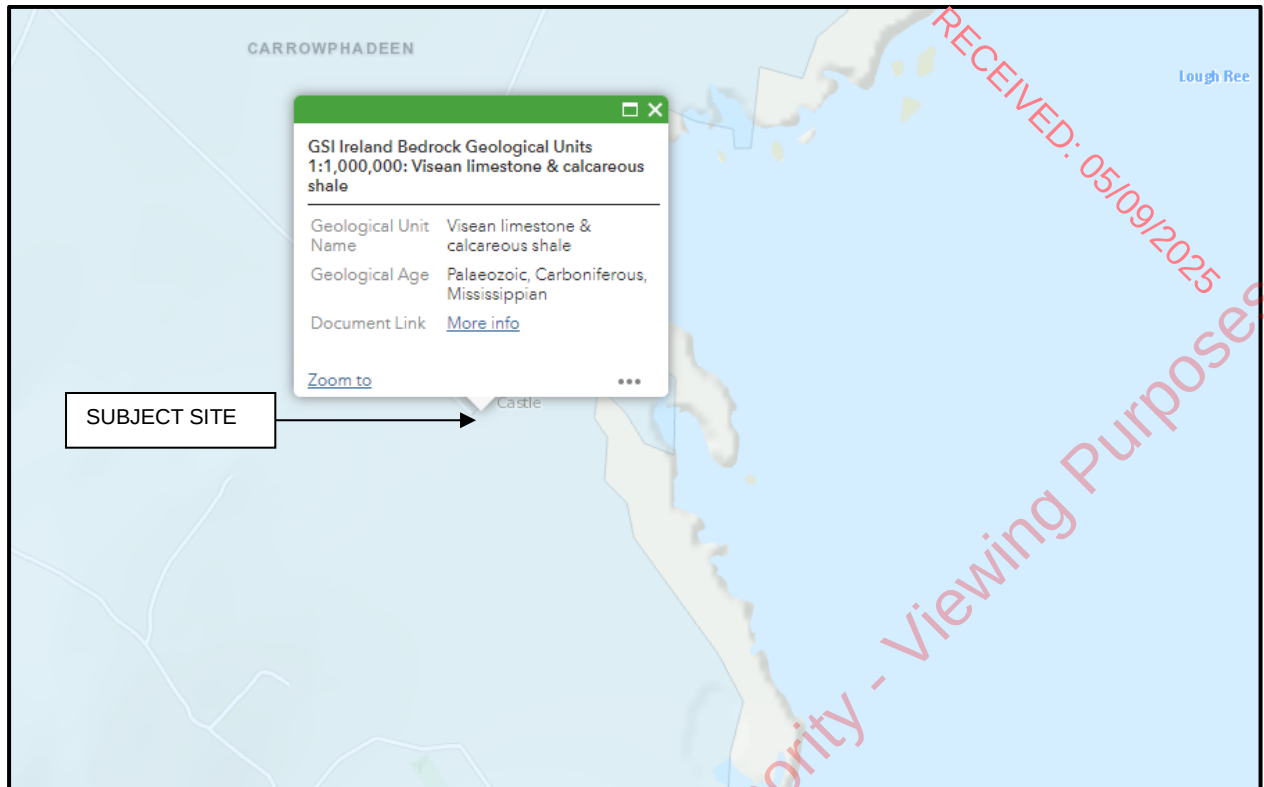
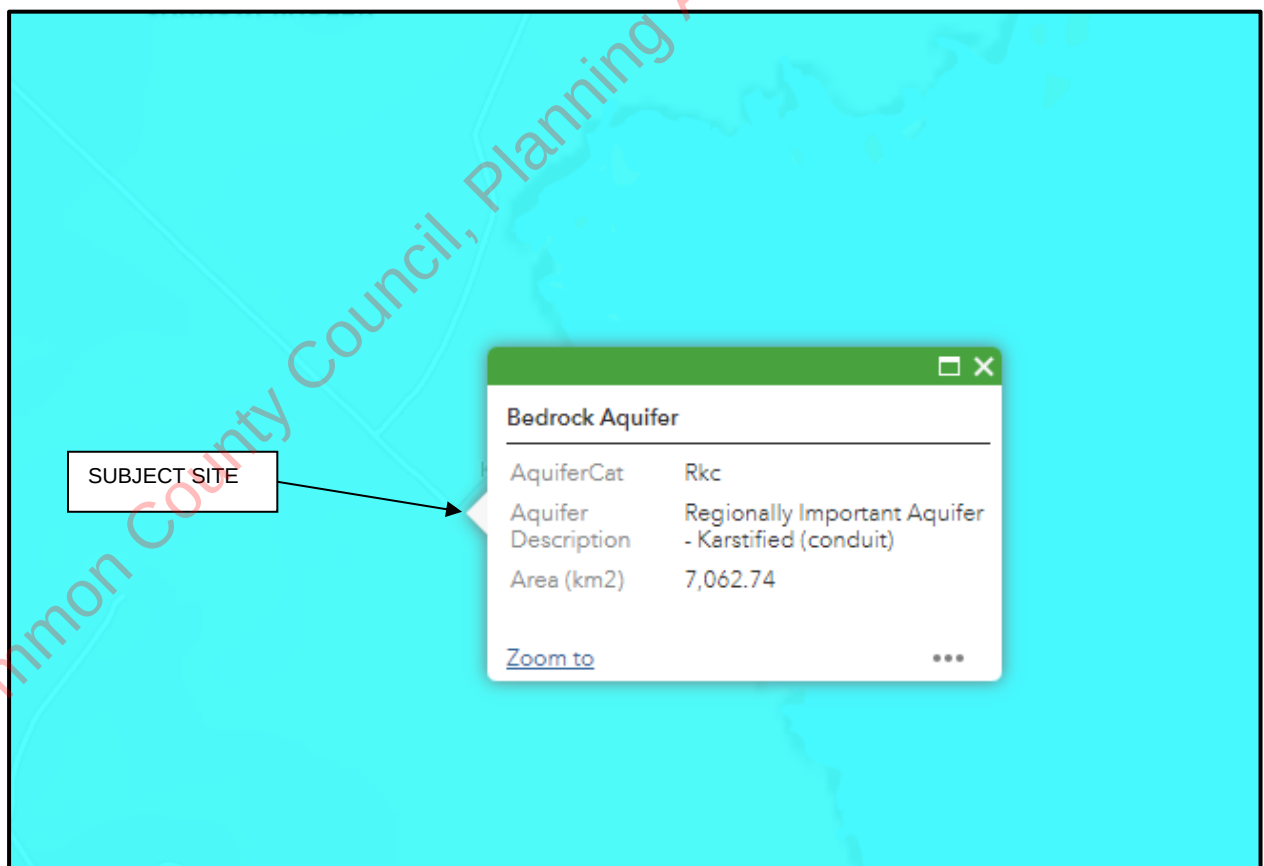
2.3 GEOLOGY AND HYDROGEOLOGY⁴

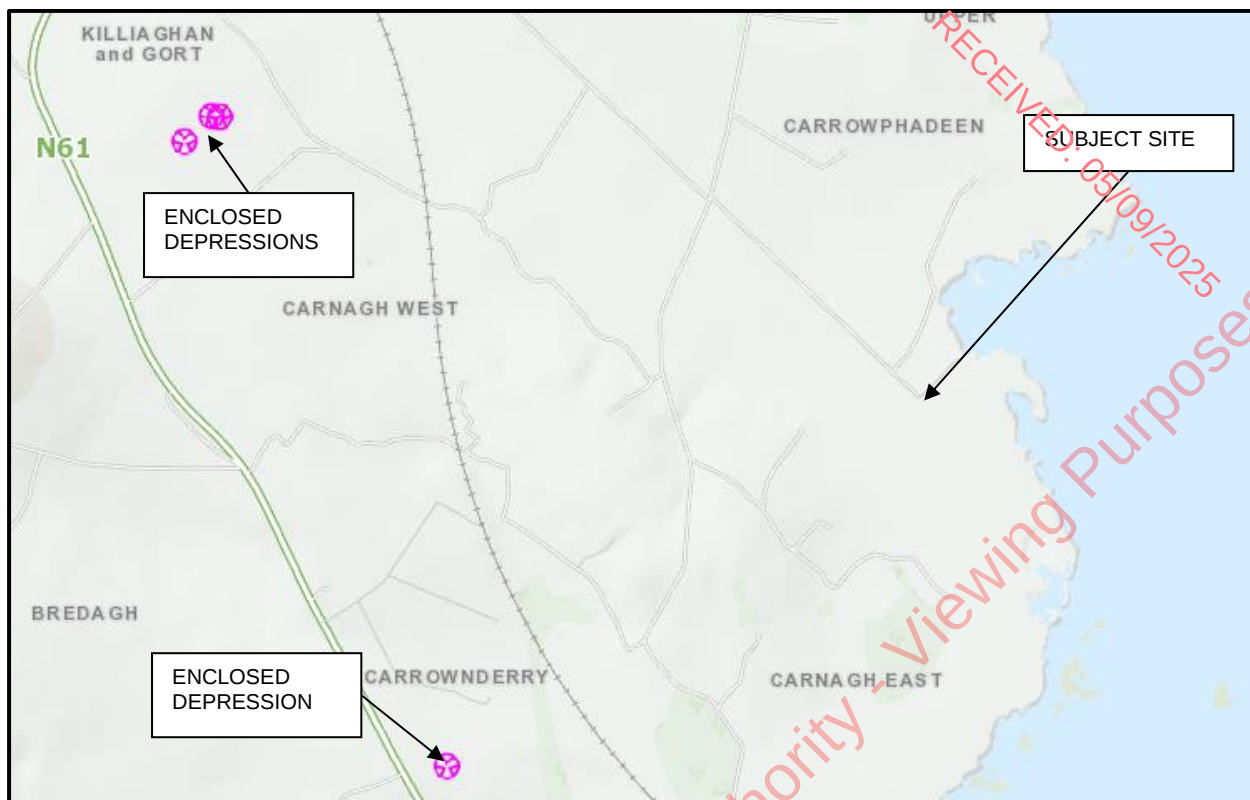
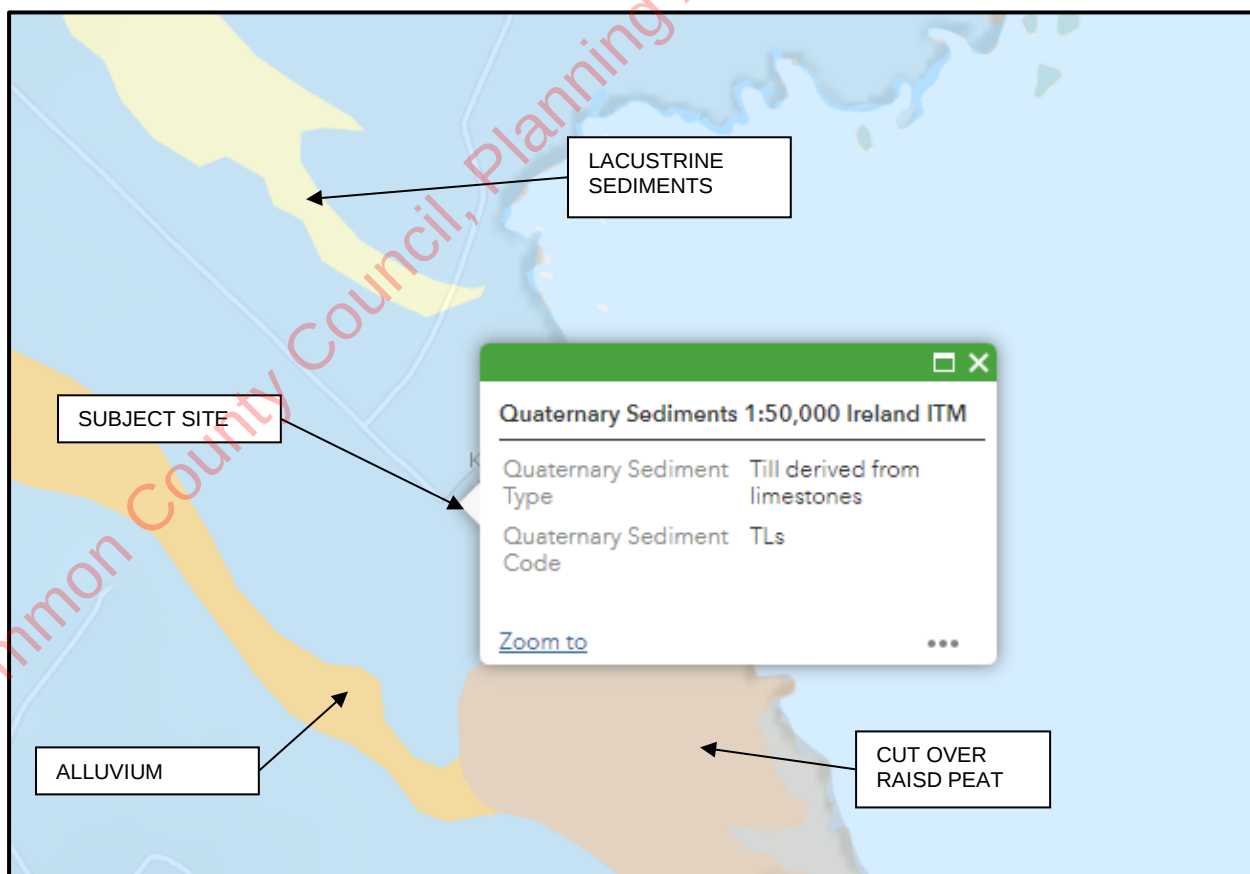
The Geological Survey of Ireland (GSI) national bedrock map (1:1,000,000) shows the bedrock geology at the subject site lands to be “Visean limestone & calcareous shale”. The area is classified as a “Regionally Important Aquifer - Karstified (conduit)”. See Figure 2-3 and Figure 2-4 below.

There are no karst features noted in the vicinity of the subject site lands. The nearest Karst features are enclosed depressions located approximately 2.3km southwest and 4.3km west. See Figure 2-5 below.

GSI soil maps show soils in the vicinity of the subject site lands are classed as “Till derived from limestones”, “Cut over raised peat” and “Lacustrine sediments”. See Figure 2-6.

⁴ gsi.ie

Figure 2-3 GSI bedrock mapping⁴Figure 2-4 GSI Groundwater aquifer mapping⁴

Figure 2-5 GSI karst features⁴Figure 2-6 GSI soils mapping⁴

2.4 HYDROLOGY

2.4.1 RAIN HYDOLOGY

The Standard Annual Average Rainfall (SAAR)⁵ for the area is estimated as 946mm.

2.4.2 SURFACE HYDROLOGY

Regionally the subject site lands are located within the Upper Shannon River Basin District. A description of the drainage features and surface hydrology is included in section 2.2 above.

2.4.3 GROUNDWATER HYDROLOGY³

The subject site lands are located within the Funshinagh groundwater body. The flow regime is noted as “*Karstic*”. The groundwater vulnerability on site is noted as “*Moderate*” to “*High*”. The recharge coefficient for the underlying aquifer is between 22% to 60%.

⁵ www.met.ie

3 FLOOD RISK ASSESSMENT – BACKGROUND INFORMATION

In order to inform the assessment of flood risk at the site, the following information sources were explored.

3.1 HISTORICAL FLOODING

3.1.1 HISTORIC ORDNANCE SURVEY MAPPING⁶

Available historic maps were researched. The historical mapping for the subject site lands area is shown in Figure 3-1 and Figure 3-2.

The presence of a historic well in the vicinity of the site suggests the water table is close to the surface here.

The available historic maps do not indicate that the subject site is liable to flooding.

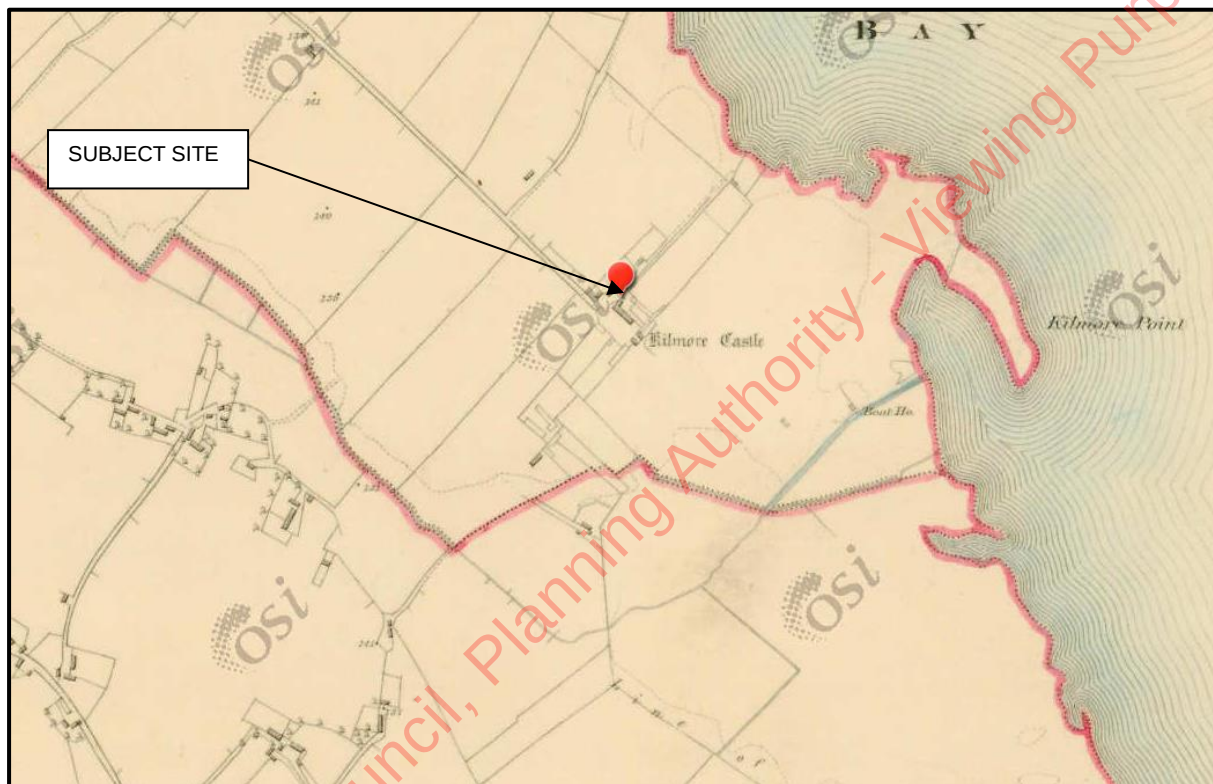


Figure 3-1 OSI historic 6-Inch colour (1829-41)

⁶ www.geohive.ie

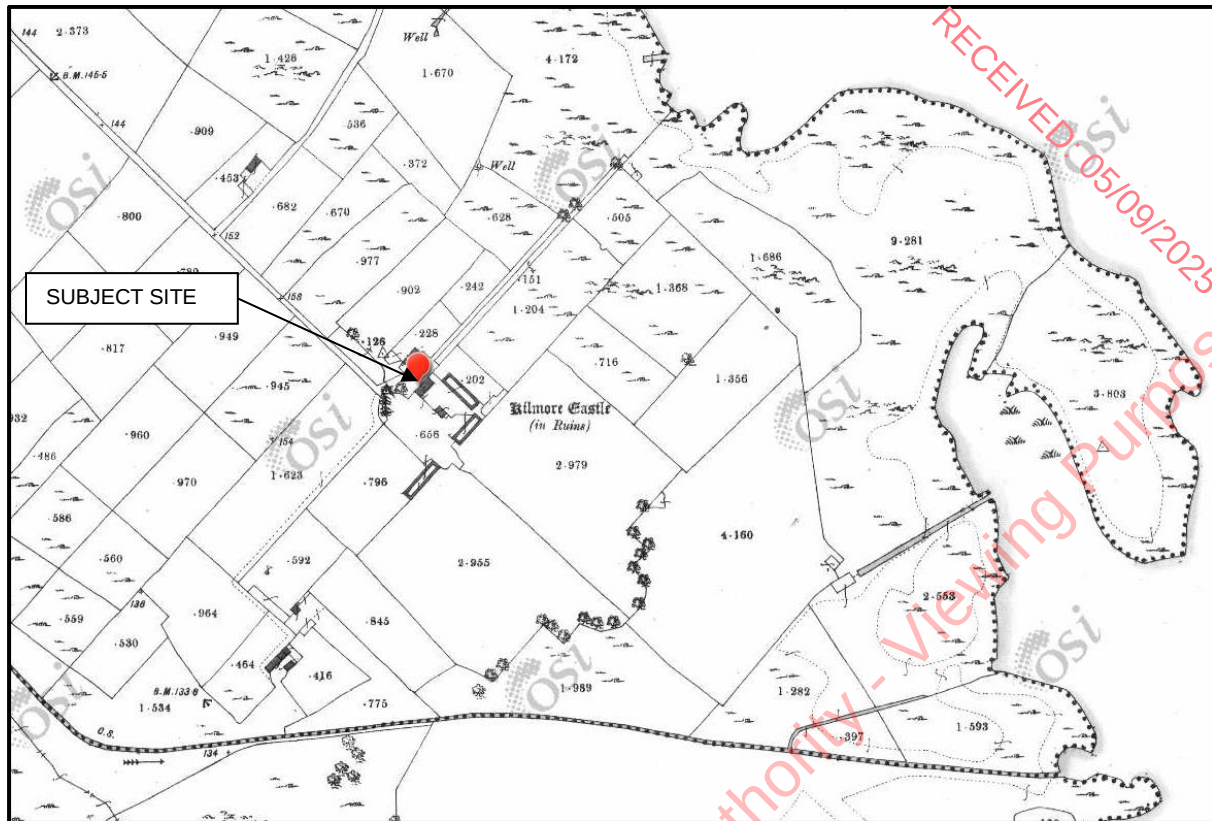


Figure 3-2 OSI historic 25-Inch B&W (1897-1913)

3.1.2 PUBLIC FLOODING RECORDS

Available historical flood maps and reports on floodinfo.ie⁷ were consulted. The floodinfo.ie mapping for the study area is shown in Figure 3-3 below. Historical flood events are noted within 2.5km of the study area:

- A flood event along the River Shannon in Winter 1999/2000⁸. The flood extents of this flood event is shown in Figure 3-3 below. The maximum water level at Lough Ree was +36.47mOD. This was the highest recorded level since records began at the time of this report. The latest highest level was recorded on 7th of January 2016 is noted as +37.074mOD⁹. Due to the coarse in nature flood extents mapping, it is difficult to verify if the extents of this flood event has impacted the subject site.
- A flood event along the River Shannon in December 1954¹⁰. The flood extents of this flood event is shown in Figure 3 3 below. The maximum level reached at the Athlone upper gauge was +36.11mOD. The latest highest level was recorded on 4th of January 2015 at Athlone weir upstream is +36.506mOD¹¹. Due to the coarse in nature flood extents mapping, it is difficult to verify if this flood event has impacted the subject site.

⁷ www.floodinfo.ie [Accessed 9th of September 2024]

⁸ River Shannon Flood of Winter 1999/2000 by ESB International - Section 5.2 Middle Catchment to Athlone dated 14th of December 2000, Flood Id = 2. Maximum water level recorded on 31st of December 1999 – highest level 39.17mOD (OD at Poolbeg). Highest level on 7th of January 2016 was 39.774mOD (OD at Poolbeg).

⁹ www.waterlevel.ie/hydro-data for Hodsons bay at Lough Ree [Accessed 4th of September 2024]

¹⁰ River Shannon Flood of Winter 1999/2000 by ESB International - Section 6.2 Middle Catchment to Athlone dated 14th of December 2000, Flood Id = 3. Maximum water level recorded on 31st of December 1999. Highest water level recorded in December 1954 was 38.81mOD (OD at Poolbeg).

¹¹ www.waterlevel.ie/hydro-data for Athlone Weir U/S [Accessed 10th of September 2024].

- A recurring flood event at Carnagh West/Ballyduff¹², located approximately 2km west. The flooding is caused mainly by groundwater and runoff. The road under the railway is liable to flooding. This is not hydraulically connected to the subject site.

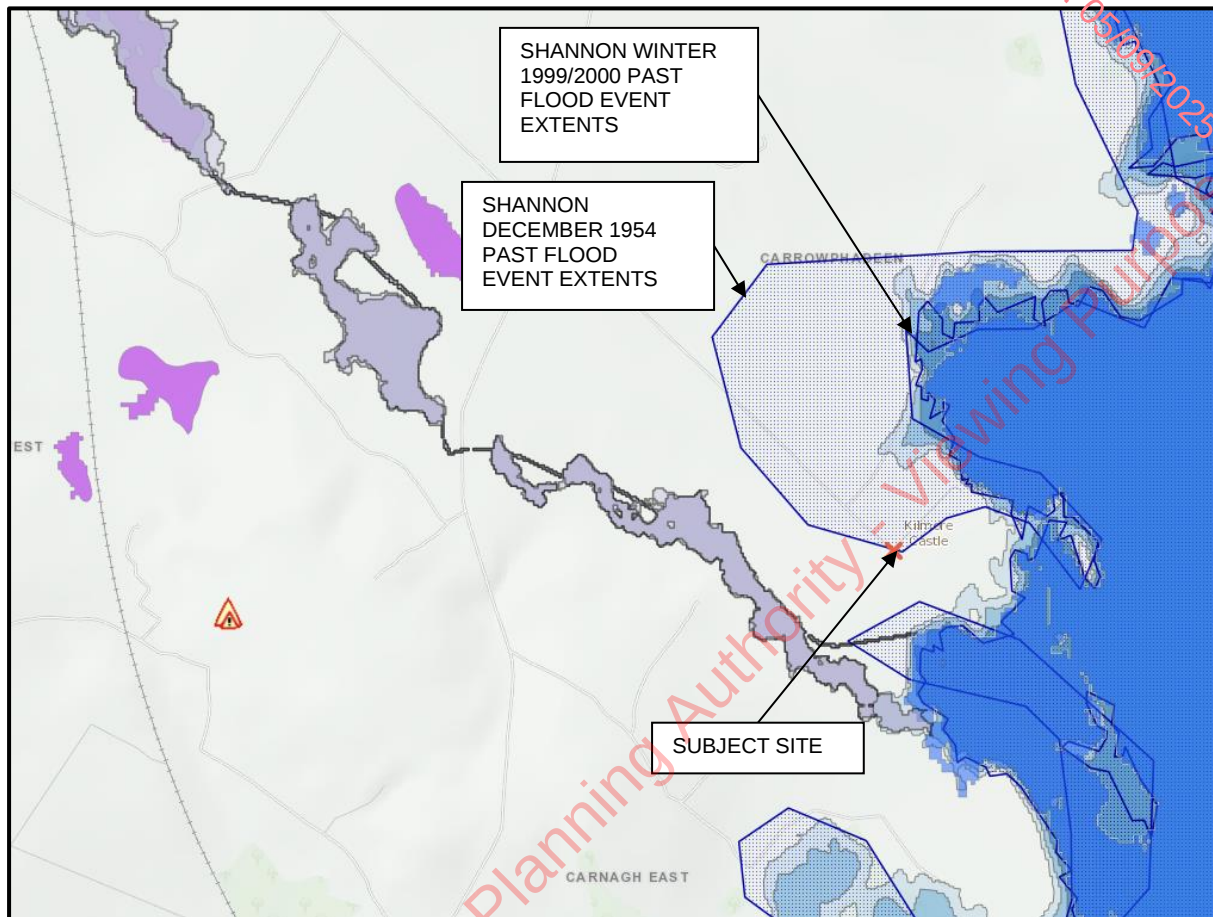


Figure 3-3 Floodinfo.ie – flood report⁷

3.1.3 ANECDOTAL EVIDENCE

The applicant has knowledge of this site for over 40 years. In this time she has not witnessed flood water encroach the adjacent dwelling or proposed development lands.

3.1.4 CONSULTATION WITH LOCAL AUTHORITIES

LCE contacted Ms. Susan Loughnane, Municipal District Coordinator for Roscommon County Council, on the 9th of September 2024. LCE notified Ms. Loughnane that a flood risk assessment is currently being prepared for the subject site lands and requested any relevant flood data she may have. LCE have not received feedback on issue of this report.

3.1.5 HISTORICAL FLOODING CONCLUSION

From the historic ordnance survey mapping, there are no lands labelled as “liable to flooding”. The subject site is located within the vicinity of previous flood extents boundary labelled as “Shannon December 1954” and “River Shannon in Winter 1999/2000”. These flood extents are coarse in nature and therefore difficult

¹² OPW Flood Hazard Mapping – Phase 1, Meeting with Roscommon County Council – Oral Report – Area Engineer – Athlone dated 3/12/2024 and 7/12/2024, Flood Id = 179.

to verify if the extents of these flood events have impacted the subject site. The highest historic level recorded is 8.3m below the proposed dwelling extension and existing dwelling FFL.

There are no other hydraulically connected record of historic flooding in the vicinity of the subject site lands.

3.2 OPW FLOOD RISK MAPPING

3.2.1 OPW PFRA INDICATIVE FLOOD MAPS

The OPW Preliminary Flood Risk Assessment (PFRA) maps are the preliminary flood risk maps as part of the Catchment Flood Risk Assessment and Management (CFRAM) programme. These maps highlight areas of potential flood risk.

Available CFRAM PFRA flood maps were consulted¹³. The PFRA mapping for the subject site lands are shown in Figure 3-4. The PFRA mapping does not estimate the subject site has a flood risk.

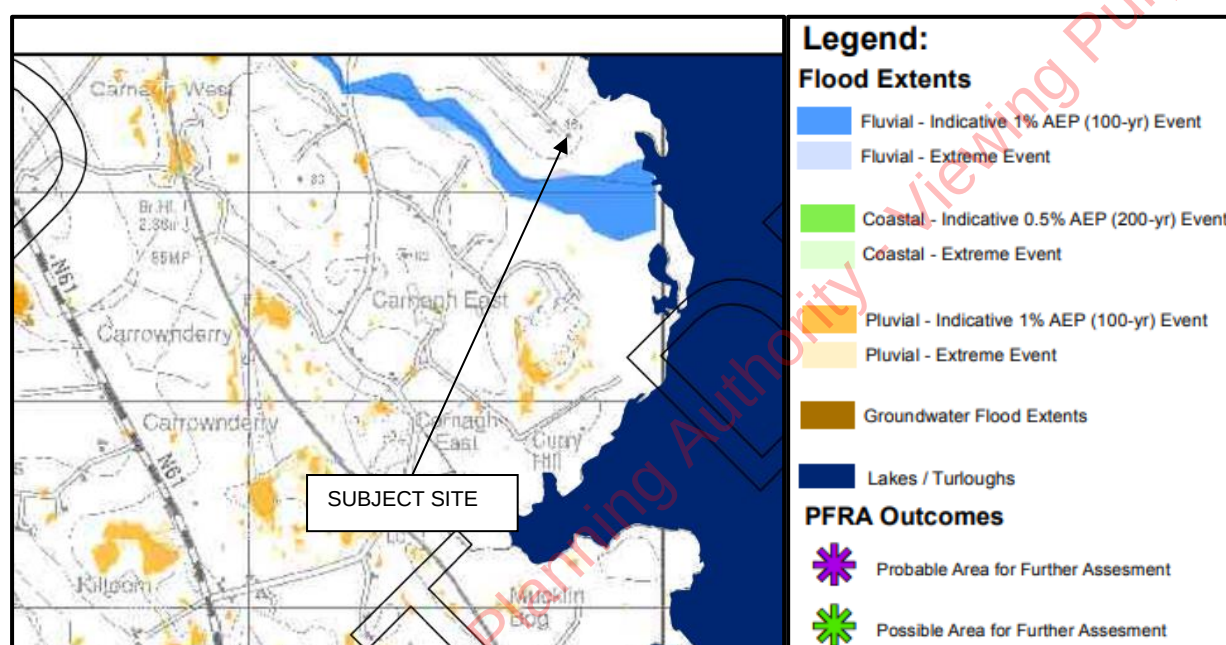


Figure 3-4 PFRA mapping

3.2.2 PREDICTIVE FLOOD MAPS PRODUCED UNDER THE CFRAM STUDIES

Predictive flood extent maps have been produced by the OPW as part of the CFRAM¹⁴ programme. These maps highlight areas of potential flood risk, excluding and including an allowance for climate change. No CFRAM map is available for the surrounding area containing the subject site. The OPW database¹⁵ contains CFRAM flooding extents mapping for the subject site lands are shown in Figure 3-5 below. No parts of the subject site is located within areas estimated to be at risk of flooding.

¹³ OPW PFRA data 2011

¹⁴ OPW CFRAM data 2016

¹⁵ www.floodinfo.ie [Accessed 9th of September 2024]



Figure 3-5 CFRAM mapping

3.2.2.1 CLIMATE CHANGE AND FREEBOARD

Climate change including 300mm freeboard is accounted for by the addition of 750mm to present day flood level estimates.

3.2.2.2 FLOOD LEVEL ESTIMATION

The estimated flood levels for the present-day scenario for the proposed development are shown in Table 3.1¹⁶.

Table 3.1 Flood level estimates (excl. climate change)

Return Period	(mOD)
1 in 100-year	+37.1
1 in 1000-year	+37.6

¹⁶ Estimated flood levels interpolated between CFRAM nodes 08MSH00355 of map no. S2526LAH_EXFCD_F1_01 sheet 1 of 7 and 07MSH03613 of map no. S2526ATN_EXFCD_F1_03 sheet 3 of 25.

3.2.3 OPW NIFM INDICATIVE FLUVIAL FLOOD MAPS

National Indicative Fluvial Maps (NIFM) have been produced for all watercourses that are on the EPA database that have a catchment area greater than 5km², and for which flood maps were not produced under the National CFRAM Programme. NIFM have only been produced for catchments greater than 5km² as the chosen hydrological assessment methodology is not suitable for very small catchments.

The NIFM database⁹ does include the risk of flooding from the Carrowphadeen stream. This is not within the vicinity of the subject site. The NIFM mapping for the subject site lands are shown in Figure 3-6.



Figure 3-6 NIFM mapping

3.2.4 PREVIOUS STRATEGIC FLOOD RISK ASSESSMENTS

Where necessary, Strategic Flood Risk Assessments (SFRA) have been carried out by Local Authorities to address flood risk in planning of future development.

There is no SFRA map available for the area.

3.2.5 OPW FLOOD RISK MAPPING CONCLUSION

The PFRA, NIFM and CFRAM mapping does not indicate fluvial flooding risk to the subject site.

3.3 OTHER BACKGROUND DATA

3.3.1 RIVER BASIN MANAGEMENT PLANS AND REPORTS

The Water Framework Directive was adopted by the EU in order to halt and reverse the decline in water quality. The Directive sets very strict deadlines for meeting water quality objectives, especially in protected

areas. The River Basin Management Plans (RBMP) outline what is required in order to achieve the objectives of the Directive in the various River Basin Districts.

The RBMP for Ireland (2022-2027) was published in December 2021¹⁷. The RBMP does not contain any information or requirements which impact directly on this site-specific FRA. In line with the objectives of the RBMP all flood mitigation measures should be designed to consider the potential impact of possible measures on water bodies.

Where necessary, surface water run-off from the subject site should be attenuated on-site, prior to discharge to the adjacent watercourse. This will reduce the quantity of water to be disposed of to the existing watercourses in the vicinity.

All site drainage should be designed in accordance with Sustainable Drainage systems (SuDS) principles¹⁸.

3.4 BENEFITTING LANDS MAPS

The subject site lands are not identified on the Arterial Drainage mapping as having benefitted from drainage works carried out historically by the OPW. The closest drainage district benefitted lands is located approximately 4.5km south of the subject site. See Figure 3-7 below.

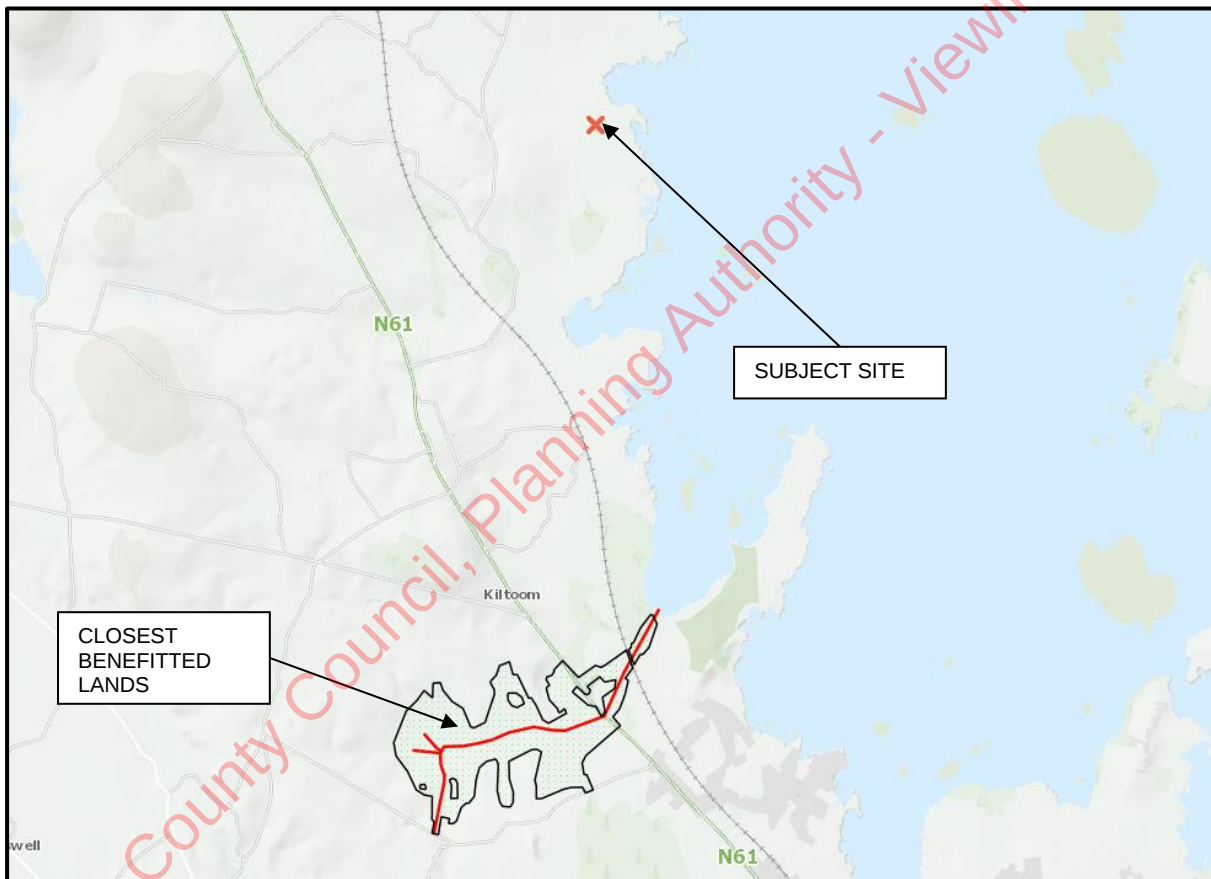


Figure 3-7 OPW Benefitting lands

¹⁷ River Basin Management Plan for Ireland 2022-2027, as prepared by the Department of Housing, Planning and Local Government, December 2021

¹⁸ CIRIA C609 Sustainable drainage systems

3.5 TOPOGRAPHICAL MAPS

Topographical maps, in particular digital elevation models produced by aerial survey or ground survey techniques. These maps provide greater accuracy for site-specific flood extent based on river and coastal modelling. No publicly available open-source topographic maps¹⁹ are available for the subject site and surrounding area.

¹⁹ GSI Open Topographic Data Viewer (dcenr.maps.arcgis.com)

4 FLOOD RISK ASSESSMENT

4.1 FLOOD SOURCES AT THE SITE

The flood source at the subject site is fluvial only.

4.2 FLOOD ZONES

4.2.1 ZONE DEFINITIONS

The “Planning System and Flood Risk Management Guidelines” as published in November 2009 by the Department of the Environment, Heritage and Local Government use three different flood zones to define areas of flood risk¹. Flood zones are geographical areas within which the likelihood of flooding is in a particular range, and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning.

There are three types or levels of flood zones defined for the purposes of these guidelines:

Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1 in 100-year for river flooding and 1 in 200-year for coastal flooding). Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports, and recreation, would be considered appropriate in this zone.

Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 1 in 1000-year and 1 in 100-year for river flooding and between 1 in 1000-year and 200-year for coastal flooding). Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water-compatible development might be considered appropriate in this zone.

Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 1 in 1000-year for both river and coastal flooding). Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast).

4.2.2 FLOOD ZONE LEVELS

Flood zones are defined on the basis of the 1 in 100-year and 1 in 1000-year extreme water levels from various flood sources. The flood levels are estimated from the CFRAM studies available for the area, as defined in Section 3.2.2. The estimated flood levels are presented in Table 4.1 below.

Table 4.1 Flood zone levels

Flood Zone	Flood Probability	Level (mOD)
A	Greater than 1.0% (1 in 100-year)	Below +37.10
B	1.0% (1 in 100 year) to 0.1% (1 in 1000-year)	+37.10 to +37.60
C	Smaller than 0.1% (1 in 1000-year)	Above +37.60

The subject site has been zoned. The entire subject site is located in Flood Zone C.

4.3 DESIGN FLOOD LEVEL

There was no requirement to define the design flood level here as entire site is located in Flood Zone C. However, the estimated safe design flood level for the proposed dwelling is +38.30mOD. This is the 1 in 1000-year flood level, including climate change, a freeboard factor and a model uncertainty factor to provide a margin of safety in design. LCE recommend the damp proof membranes for all structures is constructed 0.1 meters above the safe design flood level.

4.4 RESIDUAL RISK

There is a residual flood risk at the subject site lands inherent in the design and maintenance of the adjacent drainage network. This residual risk is mitigated through freeboard; however, all findings are subject to adequate design and maintenance of drainage networks and flood defences.

4.5 IMPACT OF DEVELOPMENT OF FLOODING ELSEWHERE

All site surface water management design should consider the impact of any discharge on flooding elsewhere. The final stormwater system should be designed by appropriately qualified and experienced personnel. The proposed layout of the development is optimised to result in a negligible overall impact on the existing flood storage on-site.

5 CONCLUSIONS AND GENERAL RECOMMENDATIONS

5.1 CONCLUSION

5.1.1 HISTORIC FLOODING

There is no historical reference to areas “liable to flooding” in the vicinity of the proposed development on available OS maps. No lands in the vicinity of the proposed development are identified as benefiting from OPW arterial drainage schemes. There is no evidence of alluvium soils within the vicinity of the proposed development lands. OPW PFRA, NIFM and CFRAM mapping does not identify any flood risk to the subject site.

There is some statutory evidence of fluvial flood history in or, in the vicinity of the proposed development lands. The significant elevation difference from the highest recorded flood level (+37.10mOD) to the subject site (existing site ground levels between +40.125mOD to +45.850mOD) suggests that there was no impact of historic flooding to the subject site.

5.1.2 PROPOSED DEVELOPMENT

The proposed development comprises of an extension to an existing dwelling therefore, the development does not increase flood risk. The recommended minimum design flood level is +38.30mOD. The existing and proposed FFL is +45.30mOD. The elevations of the site access road range from +45.78 to 45.85mOD. Therefore, the site is assumed to be entirely located within Flood Zone C.

The development does not impact or impede access to any watercourse, floodplain, or flood protection facility.

5.2 RECOMMENDATIONS

Where necessary, surface water run-off from the subject site should be attenuated on-site, prior to discharge to the adjacent watercourse. All site drainage should be designed in accordance with Sustainable Drainage systems (SuDS) principles.

DISCLAIMER

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LCE gives no warranty and accepts no liability as to the accuracy or completeness of information provided to it by or on behalf of the client or its representatives and takes no account of matters that existed when the document was transmitted to the client, but which were not known to LCE until subsequently.

Analysis contains inherent uncertainty. LCE recommends the application of the upper bound flood level estimate from all analysis, and the inclusion of a min. of 300mm freeboard. Selection of mid-range estimates and lesser freeboard is at the risk of the client and the planning authority. All information relating to drainage and water networks assumes ongoing maintenance of the network and removal of obstructions to flow.

This report is based on available CFRAM and FSU data at the time of appointment. The client is responsible for the cost of any additional services resulting from any CFRAM and FSU updates after this date.

LCE accepts no liability for any matters arising if any recommendations contained in this document are not carried out, or are partially carried out, without further advice being obtained.

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APPENDIX A PLANNING DRAWINGS

RECEIVED: 05/09/2025

Roscommon County Council, Planning Authority - Viewing Purposes Only!

Ordinance Survey Ref: 2827

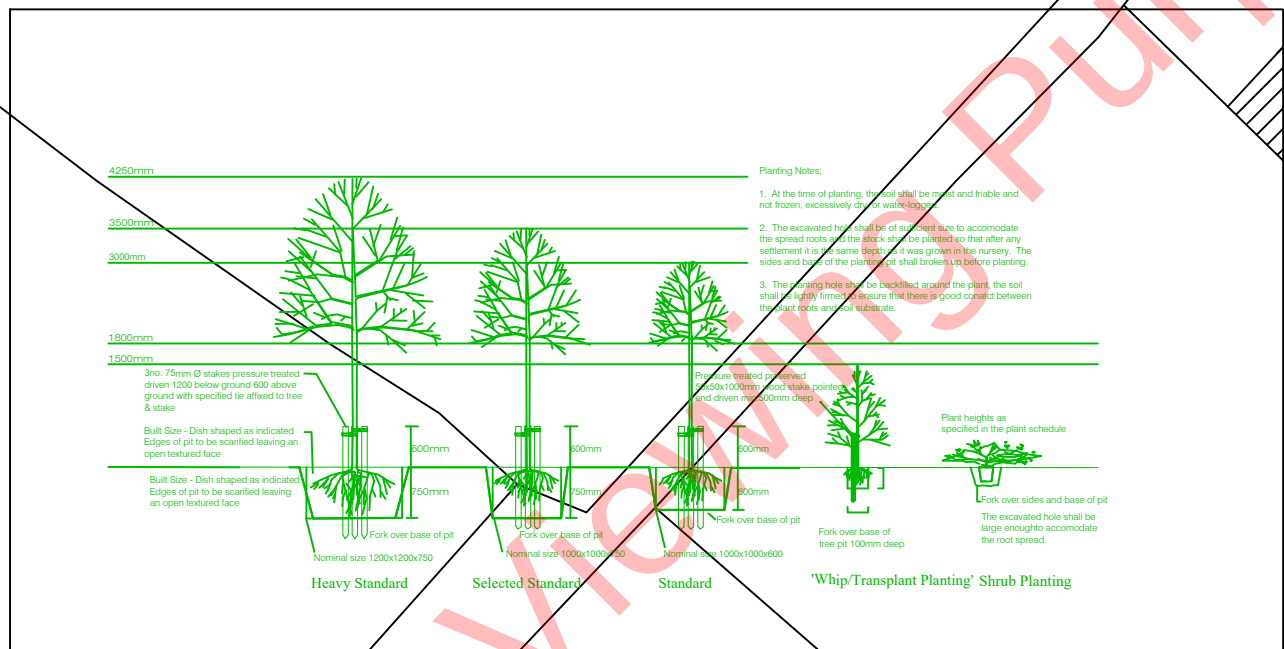
Area Of Site = 2.50 Acres/ 1.01 Hectares

Second Site Notice Located At Junction Of Public Road

Table 6.2: Minimum separation distances from the entire DWWTs

Features	DWWTs - periphery of tank/plant and infiltration/treatment area (m)
Public/group water supply abstraction points/wells	60
Down-gradient domestic well	60
3 <= PV <= 10 usually SAND- or GRAVEL-dominated material	40
Depth of soil/subsoil > 2.0 m between invert level and bedrock, and water table 1.2-2.0 m	30
Depth of soil/subsoil > 8.0 m between invert level and bedrock, and water table > 2.0 m	45
10 <= PV <= 30 usually SILT- or SAND- or silty GRAVEL-dominated material	30
Depth of soil/subsoil 1.2-8.0 m between invert level and bedrock	30
Depth of soil/subsoil > 8.0 m between invert level and bedrock	40
30 <= PV <= 100 usually SILT- or CLAY- or CLAY-dominated material	30
Depth of soil/subsoil 1.2-3.0 m between invert level and bedrock	25
Depth of soil/subsoil > 3.0 m between invert level and bedrock	15
Alongside domestic well	
Up-gradient domestic well	

Features	DWWTs - periphery of tank/plant and infiltration/treatment area (m)
Karst feature	15
Lake or forshore	50
Watercourse/stream	10
Open drain or drainage ditch	10
Adjacent tank/plant and percolation area, polishing filter or infiltration area	10
On-site dwelling house	7 (tank/plant) 10 (free water surface constructed wetland) 10 (infiltration/treatment area)
Neighbouring dwelling house	7 (tank/plant) 25 (free water surface constructed wetland) 10 (infiltration/treatment area)
Surface water soakaway*	5
Road	4
Slope break/bank	4
Trees†	3
Site boundary	3
Heritage features: NIA/CAC/SPW	See note
PN percolation valve	
*The soakaway for surface water drainage should be located down-gradient of the infiltration/treatment area. It should also be ensured that this distance is maintained from neighbouring storm water disposal area or soakaway.	
†Tree roots may lead to PPs developing. The canopy spread indicates potential root coverage.	
‡The distances required depend on the importance of the feature. Therefore, advice should be sought from the local authority and/or from the Department of Housing, Local Government and Heritage, specifically the National Monuments Service and the National Parks and Wildlife Service.	



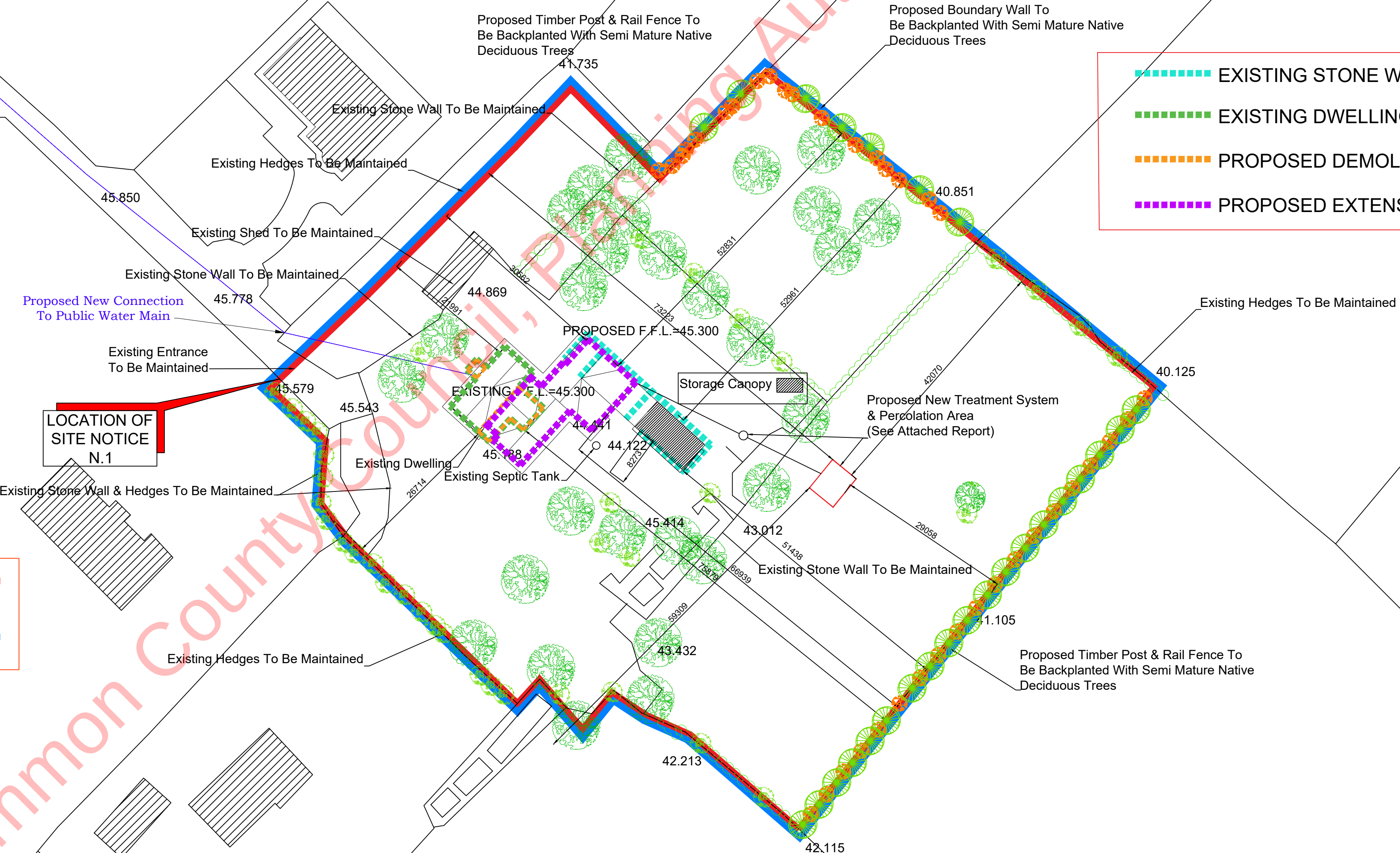
New Hedges shall be comprised of native species including at least 5 of the following: blackthorn (*Prunus spinosa*), whitethorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), crab apple (*Malus sylvestris*), downy birch (*Betula pubescens*), guelder rose (*Viburnum opulus*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*), pendunculate oak (*Quercus robur*), rowan (*Sorbus aucuparia*), spindle (*Euonymus europaeus*), whitebeam (*Sorbus aria*), wild cherry (*Prunus avium*), elm (*Ulmus glabra*).

- EXISTING STONE WALL
- EXISTING DWELLING
- PROPOSED DEMOLITION
- PROPOSED EXTENSION

Approximate Ground Spot Levels Only
F.F.L. +0.5m Above Existing Ground Level At Front Building Line

Extent Of Site Outlined In Red
Extent Of Landholding Outlined In Blue

LOCATION OF SITE NOTICE N.1



CUNNINGHAM
DESIGN&PLANNING
www.cunninghamdp.ie

Block C, N4 Axis Centre,
Longford, Co. Longford

Phone: +353 (0) 43 33 40450
Email: mark@cunninghamdp.ie

WORKING WITH YOU FROM THE GROUND UP

Drawing Title: **Site Layout**

Dwg. No.	Drawn By:	Scale	Status	Date
01	David Silva	1:500	Planning	Jan. '24

Project:
Proposed Construction Of A Two Storey Extension To An Existing Bungalow Type Dwelling House And All Ancillary Site Works At Carrowphadeen, Lecarrow Co Roscommon For Gerard & Martina Conway.