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## A detailed historical map of the Annagh area in County Wick, Ireland. The map shows a network of roads and numerous land parcels, many of which are densely wooded, indicated by a stippled pattern. Key locations labeled include 'Annagh Wood', 'D. E. NESNE', 'Annagh Bay', and 'Annagh Island (Dunagee)'. A scale bar at the bottom indicates distances in miles and furlongs. The map is oriented with North at the top.

June 2023

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# **1 INTRODUCTION**

## **1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT**

This Natura Impact Assessment was prepared for a proposed development at Hazelwood Ave, Sligo, Co. Sligo. Having regard to the location of the proposed development site and proximity to Lough Gill, a designated Special Area of Conservation (SAC), an Appropriate Assessment of the proposed development was prepared in accordance with Article 6 of the Habitats Directive. This NIS will allow the Competent Authority, in this case Sligo County Council, to undertake an Appropriate Assessment of the proposed development, as required under Article 6(3) of the Habitats Directive.

The purpose of the assessment is to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises a comprehensive ecological impact assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

## **1.2 THE AIM OF THE REPORT**

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010), and it provides an assessment of the potential effects of a proposed development at Hazelwood Ave, Sligo, Co. Sligo on certain European sites.

An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated. In the case of this development at Hazelwood Ave, the Natura 2000 site is the Lough Gill SAC.

Accordingly, a comprehensive assessment of the potential impacts of this application was carried out in June 2023 by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified and it also enabled

potential ecological impacts associated with the proposed development to be assessed and mitigated for.

### **1.3 REGULATORY CONTEXT**

#### **RELEVANT LEGISLATION**

The Birds Directive (Council Directive 2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2027 and that status does not deteriorate in any waters.

#### **Appropriate Assessment and the Habitats Directive**

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats

and species of European Community interest, at a favourable conservation status. Articles 3 - 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 Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

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

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

### The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

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

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the Habitats Directive consent can only be granted for a project if, as a result of the appropriate

assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b) after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

## 2 METHODOLOGY

### 2.1 APPROPRIATE ASSESSMENT

This NIS has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2021). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.



The four-stage process is:

**Stage 1: Screening** – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

**Stage 2: Appropriate Assessment** – The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

**Stage 3: Assessment of Alternative Solutions** – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

**Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain** – An assessment of the compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

## **2.2 STATEMENT OF COMPETENCY**

This NIS was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over 17 years. Noreen has over 19 years' experience as a professional ecologist in Ireland.

## **2.3 DESK STUDIES & CONSULTATION**

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species; conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Environmental Services Consultancy, Heb Homes – Plans and information regarding the proposed development;
- Sligo County Council – Information on planning history in the area.

## 2.4 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (Zoi) of the proposed development was defined. Based on the potential impacts and their Zoi, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCO should be considered in detail.



conditions on site. A Tricel Nova package plants with Tricel PuraFlo Tertiary Treatment system has been recommended. This will be installed and operated in accordance with EPA (2021) guidelines. It will discharge to groundwater, which in this location flows in a southerly direction. A UV Filter unit will also be included in the wastewater treatment unit to alleviate any possible coliform issues.

#### Surface Water Treatment

Clean surface and roof water from the application site will be discharge to two soakaways for discharge to the ground.

### 3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

The application site is 0.3 hectares and it is located in a rural but highly residential area, in the townland of Hazelwood Demesne, approximately 3km west of Sligo town. The site will be accessed via the creation of an entrance off a small laneway that is east off Hazelwood Ave, which is an avenue that continues south along the Hazelwood Peninsula towards Hazelwood House. The site is being removed from the garden of the applicant's parent's side garden.

The land-use surrounding the site is predominantly agricultural and improved / semi-improved agricultural grasslands are the dominant habitats locally and these habitats largely surround the site. Other habitats represented in the area include wet grassland, hedgerows, treelines and watercourses. The broadleaved woodlands surrounding Hazelwood Demesne lie in lands to the west and the south of the site. Lough Gill and its riparian habitats lie to the south. There is a high level of rural residential dwellings in the general area and the dominant habitats associated with these residences include buildings and artificial surfaces, and amenity grasslands and gardens. Site location maps are shown in Figures 2 and 3, whilst aerial photographs of the site and its surrounding habitats are shown in Figures 4a and 4b.



Figure 2 – Site Location Map





Figure 3 – OSI Map Showing Location of the Application Site (Outlined in Red)

### HABITATS AND NOTABLE SPECIES

The site does not lie within or immediately adjacent to any site that has been designated for nature conservation purposes. The site is being removed from the garden of an existing house. The dominant habitat in the site is grassland that is not intensively managed. There are some scattered trees and shrubs in the site, along with a polytunnel and flower / vegetable beds. The boundaries of the site consist of low hedgerows.

Records from the National Biodiversity Data Centre reveal the presence of the following protected mammals from within the 1km square (G7235).

- Red Squirrel (*Sciurus vulgaris*)
- European Otter (*Lutra lutra*)

All these species are protected under the Irish Wildlife Acts. In addition, the otter is listed in Annex II of the Habitats Directive. A custom polygon that was generated for the site revealed that these records do not pertain to the application site itself.

## WATER FEATURES AND QUALITY

The application site is located within the Sligo Bay and Drowse Hydrometric Area (35) and Catchment (35), the Bonet Sub-Catchment (030) and the Garavogue Sub-Basin (010). This sub-basin includes Lough Gill and all the tributaries and feeder streams that enter it. Lough Gill is 219m south of the application. Drains that flow south towards Lough Gill are present along the perimeter of the field that contains the site, approximately 93m east of the application site. The site is also 760m west of the Garavogue River.

Lough Gill is a large lake, which is fed by the Bonet River. The Garavogue River flows north-west out of Lough Gill towards Sligo Bay. The EPA have defined the ecological status of Lough Gill and the water courses that lead into it as poor status. The Garavogue River downstream of Lough Gill is also classed as poor status. Under the requirements of the Water Framework Directive this is unsatisfactory and it is vital that good status is achieved in these waterbodies. The EPA cite the main pressures on Lough Gill as abstraction, agriculture and invasive species, and for the rivers around Lough Gill the main pressures include forestry and urban run-off.

The site is within the Carrowmore East groundwater body and the EPA classify the current status of this waterbody as good. However, it is considered to be At Risk of not keeping its good status. The EPA cite the main pressure on this groundwater body as forestry. Groundwater under the site is noted as extreme.



Figure 4a – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats.





Figure 4b – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats © Google

### 3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are twelve Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the application site are summarised in Table 1 and a map and an aerial photograph showing their locations relative to the application site are shown in Figures 5 and 6. A full description of all these sites can be read on the website of the National Parks and Wildlife Service (npws.ie).

European Site	Distance	Qualifying Interests	Screened In / Out
Lough Gill SAC 001976	187m south	<ul style="list-style-type: none"> <li>Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</li> <li>Old sessile oak woods with Ilex and <i>Blechnum</i> in the British Isles</li> <li>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> <li><i>Austropotamobius pallipes</i> (White-clawed Crayfish)</li> <li><i>Petromyzon marinus</i> (Sea Lamprey)</li> </ul>	<i>Screened In - Having regards to the close proximity of the SAC to the site, along with the fact that the site is close to local drains that lead to the Lough Gill SAC, combined with the fact that the site is in an area of extreme groundwater vulnerability, significant effects upon this SAC and its QIs cannot be ruled out.</i>

		<ul style="list-style-type: none"> <li>• <i>Lampetra planeri</i> (Brook Lamprey)</li> <li>• <i>Lampetra fluviatilis</i> (River Lamprey)</li> <li>• <i>Salmo salar</i> (Salmon)</li> <li>• <i>Lutra lutra</i> (Otter)</li> </ul>	<p>RECEIVED: 06/11/2023</p>
Cummeen Stran/Drumcliff Bay SAC 000627	3.1km north-west	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i></li> <li>• Fixed coastal dunes with herbaceous vegetation</li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>• Petrifying springs with tufa formation (Cratoneurion)</li> <li>• <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail)</li> <li>• <i>Petromyzon marinus</i> (Sea Lamprey)</li> <li>• <i>Lampetra fluviatilis</i> (River Lamprey)</li> <li>• <i>Phoca vitulina</i> (Common Seal)</li> </ul>	<p>Screened Out – Having regards to the small size and scale of the development, combined with the lack of direct hydrological connectivity, that significant effects upon this SAC and its QIs can be ruled out.</p>
Cummeen Strand SPA 004035	3.3km north-west	<ul style="list-style-type: none"> <li>• Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</li> <li>• Oystercatcher (<i>Haematopus ostralegus</i>)</li> <li>• Redshank (<i>Tringa totanus</i>)</li> <li>• Wetland and Waterbirds</li> </ul>	<p>Screened Out – Having regards to the small size and scale of the development, combined with the lack of direct hydrological connectivity, that significant effects upon this SPA and its QIs can be ruled out.</p>
Sligo/Leitrim Uplands SPA 004187	5.4km north	<ul style="list-style-type: none"> <li>• Peregrine (<i>Falco peregrines</i>)</li> <li>• Chough (<i>Pyrrhocorax pyrrhocorax</i>)</li> </ul>	<p>Screened Out - No significant effects upon this SPA are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.</p>
Union Wood SAC 000638	6.8km south-west	<ul style="list-style-type: none"> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> </ul>	<p>Screened Out - No significant effects upon this SAC are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.</p>

Ballysadare Bay SAC 000622	6.8km south- west	<ul style="list-style-type: none"> <li>• Estuaries</li> <li>• Mudflats and sandflats not covered by seawater at low tide</li> <li>• Embryonic shifting dunes</li> <li>• Shifting dunes along the shoreline with <i>Ammophila arenaria</i></li> <li>• Fixed coastal dunes with herbaceous vegetation</li> <li>• Humid dune slacks</li> <li>• <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail)</li> <li>• <i>Phoca vitulina</i> (Common Seal)</li> </ul>	Screened Out - No significant effects upon this SAC are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.
Ballysadare Bay SPA 004129	6.8km south- west	<ul style="list-style-type: none"> <li>• Light-bellied Brent Goose (<i>Branta bernicla hrota</i>)</li> <li>• Grey Plover (<i>Pluvialis squatarola</i>)</li> <li>• Dunlin (<i>Calidris alpina</i>)</li> <li>• Bar-tailed Godwit (<i>Limosa lapponica</i>)</li> <li>• Redshank (<i>Tringa totanus</i>)</li> <li>• Wetland and Waterbirds</li> </ul>	Screened Out - No significant effects upon this SPA are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.
Unshin River SAC 001898	7.3km south-west	<ul style="list-style-type: none"> <li>• Otter (<i>Lutra lutra</i>)</li> <li>• Salmon (<i>Salmo salar</i>)</li> <li>• Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and Callitricho-Batrachion vegetation</li> <li>• Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></li> </ul>	Screened Out - No significant effects upon this SAC are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.
Ben Bulbin, Gleniff And Glenade Complex SAC 000623	7.5km north	<ul style="list-style-type: none"> <li>• European dry heaths</li> <li>• Alpine and Boreal heaths</li> <li>• Calcareous rocky slopes with chasmophytic vegetation</li> <li>• Calcareous and calcshist scree of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>)</li> <li>• <i>Juniperus communis</i> formations on heaths or calcareous grasslands</li> <li>• Petrifying springs with tufa formation (Cratoneurion)</li> <li>• Water courses of plain to</li> </ul>	Screened Out - No significant effects upon this SAC are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.



		montane levels with the <i>Ranunculus fluitantis</i> and Callitricho-Batrachion vegetation	
Drumcliff Bay SPA 10km	7.5km north-west	<ul style="list-style-type: none"> <li>Sanderling (<i>Calidris alba</i>)</li> <li>Bar-tailed Godwit (<i>Limosa lapponica</i>)</li> <li>Wetland and Waterbirds</li> </ul>	Screened Out - No significant effects upon this SPA are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.
Ballintemple and Ballygilgan SPA 004264	11km north-west	<ul style="list-style-type: none"> <li>Barnacle Goose (<i>Branta leucopsis</i>)</li> </ul>	Screened Out - No significant effects upon this SPA are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.
Glenade Lough SAC 001919	14.5km north-east	<ul style="list-style-type: none"> <li>White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</li> <li>Slender Naiad (<i>Najas flexilis</i>)</li> <li>Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</li> </ul>	Screened Out - No significant effects upon this SAC are anticipated given the distances involved and the fact that there is no direct hydrological connectivity.

Table 1 – Designated Sites within 15km of the Proposed Development

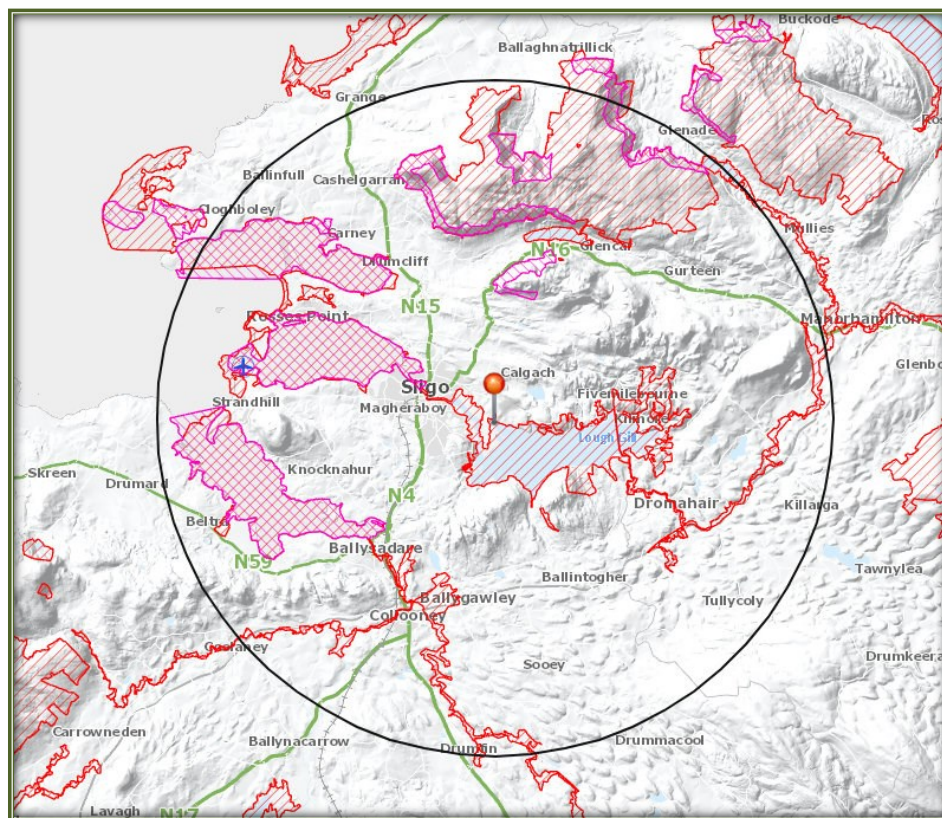


Figure 5 – The Application Site (Pinned) in relation to Natura 2000 Sites within 15km



Figure 6 – The Application Site (Outlined in Red) in relation to Lough Gill SAC (Red Hatching)

### **3.4 IDENTIFICATION OF POTENTIAL IMPACTS**

The proposed development at Hazelwood Ave will occur on a site that is within the Zone of Influence of the Lough Gill SAC. Therefore, potential significant effects upon this Natura 2000 site arising from the construction and operation of this proposed development cannot be ruled out given the connectivity of the site to the SAC. Effects could arise due to the pollution of the water in Lough Gill from run-off to surface or groundwater during construction and operation, or pollution of the groundwater arising from the operation of the treatment plant.

### **3.5 ASSESSMENT OF SIGNIFICANCE**

This section considers the list of sites identified in Section 3.3. It can be considered that with the exception of the Lough Gill SAC that the remainder of the sites identified in Section 3.3 can be excluded from the Appropriate Assessment process. This is based on their distance from the proposed development and the fact that they are outside of its Zone of Influence. The remaining concerns will therefore focus upon the protected habitats and species of the Lough Gill SAC.

### **3.6 SCREENING CONCLUSIONS**

The proposed development is not directly connected with or necessary to the nature conservation management of the designated site. Therefore, following consideration of the location of the Lough Gill SAC in relation to the proposed development at Hazelwood Ave, and the potential impacts that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

## 4 STAGE II – APPROPRIATE ASSESSMENT

### 4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the proposed development at Hazelwood Ave (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Lough Gill SAC with respect to this site's structures, species, functions and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive consent.

In this section, the Natura 2000 site identified in the previous section will be described in greater detail in terms of their site characteristics and conservation objectives.

#### SITE SPECIFIC CONSERVATION OBJECTIVES

For the designated Natura 2000 site that was screened in, if Site Specific Conservation Objectives were available these were reviewed in light of the proposed development and the potential impacts that might occur. These Site Specific Conservation Objectives (SSCOs) aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable condition for a habitat or species at a particular site. The maintenance of habitats and species within the Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. Where available, these SSCOs can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these SSCOs were assessed and where necessary, mitigated for. Where SSCOs were not available, then the SSCOs of other Natura 2000 sites with comparable QIs were referred to.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or



range of areas used by the species, other than that occurring from natural patterns of variation.

## **4.2 NATURA 2000 SITES IDENTIFIED**

### **LOUGH GILL SAC 001976**

#### Site Synopsis

Lough Gill is a large lake, with steep limestone shores and underwater cliffs. It is fed by the River Bonet and drains into the sea via the Garvogue River, a short, wide and slow flowing river which passes through Sligo town. The lake lies along the junction between old metamorphic rocks to the south and limestone to the north. The water of the lake is thus influenced by both acidic and alkaline inputs, although nearly all the basin lies over limestone. The lake is 8 km by 2-3 km and has an area of 1,400 ha. It is a deep lake, with maximum depth at 31 m. Islands are a feature of the lake. Much of the shoreline is wooded and there is also some swamp vegetation, wet grassland and scrub along the shoreline. The lake is an important salmonid and coarse fishery and is used for a range of recreational activities. The site also includes the Shanvans and Owenmore rivers.

Lough Gill is important example of a lake which appears to be naturally eutrophic. Quality is generally good although blooms of blue-green algae in recent years indicate some artificial enrichment. Significant areas of alluvial forest occur along the Garavogue River and at the mouth of the River Bonet. Old oak woodland of varying quality is well scattered along the shoreline and on some of the islands and it is an important example of this habitat for western Ireland. At least six Red Data Book plant species have been recorded from site. The site has three species of lamprey as well as crayfish *Austropotamobius pallipes*. The lake and its associated rivers support an important population of salmon *Salmo salar*. The otter *Lutra lutra* has a good population within the site. It is of minor importance for birds though the site has a small breeding colony of common tern *Sterna hirundo*. A wide range of rare or scarce invertebrates are known from the site, as well as several Red Data Book mammal species, including the badger *Martes martes*.

### Site Specific Conservation Objectives

Site specific conservation objectives for were prepared in 2021<sup>2</sup>. These SSCOs are outlined in Tables 2 – 10.

### Natural Eutrophic Lakes with Magnopotamion and Hydrocharition-type Vegetation 3150

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Vegetation composition: typical species	Occurrence	Typical species present, in good condition, and demonstrating typical abundances and distribution
Vegetation composition: characteristic zonation	Occurrence	All characteristic zones should be present, correctly distributed and in good condition
Vegetation distribution: maximum depth	Metres	Restore maximum depth of vegetation, subject to natural processes
Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the vegetation
Transparency	Metres	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency
Nutrients	µg/l P; mg/l N	Maintain/Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species
Phytoplankton biomass	µg/l Chlorophyll a	Maintain appropriate water quality to support the habitat, including good chlorophyll a status
Phytoplankton composition	EPA phytoplankton composition metric	Maintain/restore appropriate water quality to support the habitat, including high phytoplankton composition status
Attached algal biomass	Algal cover	Maintain/restore trace/ absent attached algal biomass (<5% cover)
Macrophyte status	EPA macrophyte metric (The Free Index)	Restore high/ good macrophyte status
Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes
Water colour	mg/l PtCo	Maintain / restore appropriate water colour to support the habitat
Dissolved organic carbon (DOC)	mg/l PtCo	Maintain / restore appropriate organic carbon levels to support the habitat
Turbidity	Nephelometric turbidity units/ mg/l SS/ other appropriate units	Maintain / restore appropriate turbidity to support the habitat
Fringing habitat: area and condition	Hectares	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of the lake habitat

Table 2 – Natural Eutrophic Lakes with Magnopotamion and Hydrocharition-type Vegetation 3150

<sup>2</sup> NPWS (2021) Conservation Objectives: Lough Gill SAC 001976. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

### Potential Significant Effects

This is a qualifying interest of Lough Gill SAC. Natural eutrophic lakes have nutrient levels that are higher than those of oligotrophic, dystrophic or mesotrophic lakes, resulting in higher natural productivity and they are typically species-rich. However, many such lakes have been damaged by over-enrichment with nutrients, resulting in hypertrophic conditions and a reduction in species-richness.

There is potential hydrological connectivity between this QI and the application site via the watercourse that lies in the field that contains the site. In addition, as the site is within an area of extreme groundwater vulnerability, negative impacts upon groundwater arising during the construction and operation of the site and subsequent significant effects upon this QI in the SAC cannot be ruled out. Run-off could contain silt, hydrocarbons or other pollutants. Therefore, mitigation measures will be required in order to ensure that run-off from the site does not enter this stream or Lough Gill itself.

### Semi-natural dry grasslands and scrubland facies on calcareous substrates

#### (Festuco-Brometalia) (\* important orchid sites) [6210]

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops; within 20m surrounding area of monitoring stops	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least two 'high quality' positive indicator species present in stop or within 20m of stop
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover of an individual species not more than 10%
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species (except certain listed species) and bracken (Pteridium aquilinum) not more than 5%
Vegetation structure: broadleaf herb:grass ratio	Percentage at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%
Vegetation structure: sward height	Percentage at a representative number of 2m x 2m monitoring stops	At least 30% of sward between 5cm and 40cm tall
Vegetation structure: litter	Percentage cover at	Litter cover not more than 25%

	a representative number of 2m x 2m monitoring stops	
Physical structure: bare soil	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 10% bare soil
Physical structure: grazing or disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m <sup>2</sup>

Table 3 – Semi Natural Dry Grasslands

### Potential Significant Effects

The area of this QI recorded within the SAC is located approximately midway along the northern shore of Lough Gill, in an area called Clogher Beg (NPWS 2021, SSCO for Lough Gill). Its location is mapped in Map 4 of the SSCO document. There is no connectivity between the application site and this QI habitat within the SAC. There will be no habitat loss or fragmentation of this QI habitat within the SAC arising from the proposed development. This habitat does not occur within or adjacent to the application site. The proposed development will not give rise to impacts upon the attributes, measures or targets that have been set for the restoration of this habitat within the SAC.

### Old sessile oak woods with Ilex and Blachnum g1AO

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Ha	Area stable increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Woodland Size	Ha	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size
Woodland Structure: cover and height	Percentage, Metres, Centimetres	Total canopy cover at least 30%; median canopy height at least 11m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20 cm; bryophyte cover at least 4%
Woodland Structure: Community Diversity and Extent	Ha	Maintain diversity and extent of community types
Woodland Structure: Natural Regeneration	Seedling: sapling:pole ratio	Seedlings, saplings and pole age-classes of target species for g1Ao woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy
Woodland Structure: Dead Wood	M3 per hectare: number per hectare	At least 19 stems/ha of dead wood of at least 20cm diameter
Woodland Structure: Veteran Trees	Number per hectare	No decline
Woodland Structure: Indicators of Local Distinctiveness	Occurrence	No decline in distribution and, in the case of red listed and other rare or localised species, population size
Woodland structure: indicators of overgrazing	Occurrence	All four indicators of overgrazing absent
Vegetation	Percentage	No decline. Native tree cover at least 90% of canopy;

Composition: Native Tree Cover		target species cover at least 50% of canopy
Vegetation Composition: Typical Species	Occurrence	At least 1 target species for g1Ao woodlands present; at least 6 positive indicator species for g1Ao woodlands present
Vegetation Composition: Negative Indicator Species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent

Table 4 – SSCOs for Old Oak Woodlands

### Potential Significant Effects

Old sessile oak woodland is defined in the Habitats Directive interpretation manual as “acidophilous *Quercus patraea* woods, with low branched trees with many ferns, mosses, lichens and evergreen bushes”. This habitat is not water dependent and potential changes in water quality will not impact this habitat.

Significant effects upon this QI arising from the proposed development are unlikely. The attributes and targets required for the restoration or maintenance of this habitat at favourable conservation condition do not include the maintenance of water quality. As the primary impact of the proposed development will be a potential reduction in water quality, then significant effects upon this QI are unlikely. There will be no habitat loss, habitat fragmentation or change in vegetation composition in this habitat arising from the proposed development and mitigation to prevent significant effects upon this site will not be required.

### Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsior* g1EO

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Ha	Area stable increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Woodland Size	Ha	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size
Woodland Structure: cover and height	Percentage, Metres and centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%
Woodland Structure: Community Diversity and Extent	Ha	Maintain diversity and extent of community types
Woodland Structure: Natural Regeneration	Seedling: sapling:pole ratio	Seedlings, saplings and pole age-classes of target species for g1EO* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy
Hydrological Regime: Flooding Depth/Height of Water Table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation
Woodland Structure: Dead Wood	Number per hectare	At least 19 stems/ha of dead wood of at least 20cm diameter
Woodland Structure: Veteran Trees	Number per hectare	No decline

Woodland Structure: Indicators of Local Distinctiveness	Occurrence; Population Size	No decline in distribution and, in the case of red listed and other rare or localised species, population size
Woodland structure: indicators of overgrazing	Occurrence	All five indicators of overgrazing absent
Vegetation Composition: Native Tree Cover	Percentage	No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy
Vegetation Composition: Typical Species	Occurrence	At least 1 target species for g1Eo* woodlands present; at least 6 positive indicator species for g1Eo* woodlands present
Vegetation Composition: Negative Indicator Species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent

Table 5 – SSCOs for Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsior*

### Potential Significant Effects

This Annex I Priority habitat occur along the Garavogue River and at the mouth of the River Bonet. Some of the main threats to this habitat include under-grazing and invasive species. The attributes and targets required for the restoration or maintenance of this habitat at favourable conservation condition do not include the maintenance of water quality. As the primary potential impact of the proposed development will be a reduction in water quality, then significant effects upon this QI are unlikely to arise. There will be no habitat loss, habitat fragmentation or change in vegetation composition in this habitat arising from the proposed development and mitigation to prevent significant effects upon this QI will not be required. There will also be no changes to the hydrological regime of the water table that is required to support this habitat.

### White-clawed crayfish (1092)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	Occurrence	No reduction from baseline
Population structure: recruitment	Percentage occurrence of juveniles and females with eggs	Juveniles and / or females with eggs in at least 50% of positive samples
Population size	Catch per unit effort	No reduction from baseline of 0.25
Negative indicator species	Occurrence	No non-indigenous crayfish species present
Disease	Occurrence	No instances of disease
River Water Quality	EPA Q value	At least Q3-4 at all sites sampled by the EPA
Lake Water Quality	Water Chemistry Measures	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline from the baseline

Table 6 – SSCOs for Crayfish

### Potential Significant Effects

Records exist for the crayfish from Lough Gill at points downstream of the application site. Crayfish need at least a Q3-4 in the rivers they occupy. (Demers & Reynolds, 2002). It is generally considered to be an ecosystem keystone or heritage species rather than a bio-indicator, because of its traditional importance and its large size, longevity and position in the ecosystem (Matthews & Reynolds, 1992). Crayfish need high habitat heterogeneity. Larger crayfish must have stones to hide under, or an earthen bank in which to burrow. Hatchlings shelter in vegetation, gravel and among fine tree - roots. Smaller crayfish are typically found among weed and debris in shallow water. Larger juveniles in particular may also be found among cobbles and detritus such as leaf litter. These conditions must be available on the whole length of occupied habitat (NPWS, 2011).

The greatest threat to this species is introduced non-native crayfish and disease, such as has been seen recently with the loss of crayfish populations due to the crayfish plague. Crayfish are also sensitive to pollution. Given the connectivity and proximity of the development site to Lough Gill, impacts upon surface water quality in the catchment and subsequent significant effects upon this species cannot be ruled out.

### **Sea Lamprey (1095)**

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: Extent of Anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from the estuary
Annual run size	Number of sea lamprey nests	Annual run size should reflect that expected under near-natural conditions
Larval lamprey in fine sediment	Larvae / m <sup>2</sup>	Larval lamprey present in the SAC catchment
Extent and distribution of spawning and nursery habitat	M <sup>2</sup> and occurrence	No decline in extent and distribution of spawning and nursery beds.

Table 7 – SSCOs for River Lamprey

### Potential Significant Effects

Sea lamprey are present in Lough Gill. Given the connectivity and proximity of the development site to Lough Gill, impacts upon surface water quality in the catchment and subsequent significant effects upon this species cannot be ruled out.

**Brook Lamprey (1096) and River Lamprey (1099)**

The SSCO for these species is to *restore* their favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% of river accessible	Access to all watercourses down to first order streams
Distribution in suitable habitat	Percentage of positive sites in 2nd order channels (and greater), downstream of spawning areas	Not less than 50% of sample sites with suitable habitat positive for larval brook/river lamprey
Population structure of larvae	Number of age/size classes	At least three age/size classes of larval brook/river lamprey present
Larval lamprey density in fine sediment	Larval lamprey/m <sup>2</sup>	Mean density of brook/river larval lamprey in sites with suitable habitat at least 5/m
Extent and distribution of spawning and nursery habitat	m <sup>2</sup> and occurrence	No decline in extent and distribution of spawning and nursery beds

Table 8 – SSCOs for Brook and River Lamprey

**Potential Significant Effects**

Potential impacts upon these species cannot be ruled out. Juvenile lamprey (River and Brook) have been recorded throughout the Bonet catchment. Lamprey require clean gravels, fine sediments and free upstream migration to complete their life cycle. The main threat to this species is dredging, changes to siltation patterns, sedimentation of spawning gravels and the introduction of weirs or other impediments to their migration. They are also sensitive to changes in water quality arising from diffuse or point source pollution.

**Salmon (1106)**

The SSCO for this species is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded
Salmon fry abundance	No of fry / 5 mins electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry / 5 minute sampling
Out-migrating smolt abundance	Number	No significant decline
Number and distribution of redds	Number and Occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes
Water quality	EPA Q Value	At least Q4 at all sites sampled by the EPA.

Table 9 – SSCOs for Salmon



### Potential Significant Effects

Salmon occur throughout the Bonet catchment, in Lough Gill and in the tributaries that feed Lough Gill. The requirements of salmon depend on their life stage but clean, unpolluted water is a requirement throughout the life cycle. They are very sensitive to changes in water quality and increases in sedimentation (<25 mg/L annual average). The main pressures and threats to this species come from agricultural intensification, run-off from agriculture, forestry and household waste waters and poaching.

Potential effects upon this species cannot be ruled out. Given the connectivity and proximity of the development site to Lough Gill, impacts upon surface and groundwater quality in the catchment and subsequent significant effects upon this species cannot be ruled out. The water quality target for salmon is defined above a Q4, i.e., good ecological status. The current ecological status of the watercourses in this area is poor and this is below the target for that of the salmon.

### **Otter (1355)**

The SSCO for this species is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 193.91ha along river banks/ lake shoreline/around ponds
Extent of Freshwater (River) Habitat	Km	No significant decline. Length mapped and calculated as 80.38km
Extent of Freshwater (Laker) Habitat	Hectares	No significant decline. Area mapped and calculated as 353.39ha
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline
Barriers to connectivity	Number	No significant increase

Table 10 – SSCOs for Otter

### Potential Significant Effects

The otter occurs throughout the Bonet catchment. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter consists of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frog availability can also be important. Impacts that reduce the quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills; (3) disturbance of habitat due to recreational activities, and (4) accidental deaths (NPWS, 2009).

Records for this species exist from around the Lough Gill shoreline, therefore it must be assumed that this species occurs within the Zone of Influence of the application site. In Ireland, the territory of female otters in mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of males otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation.

Given the hydrological connectivity of the development site to Lough Gill, impacts upon water quality locally and subsequent significant negative effects upon this species cannot be ruled out. In the absence of mitigation, an accidental pollution event during the site construction or operation, could impact the local otter populations.

#### **4.3 POTENTIAL IN-COMBINATION EFFECTS**

This section of the NIS examines whether any other plans or projects have the potential to act cumulatively or in-combination with the proposed development to adversely affect the integrity of the Natura 2000 sites identified, i.e., Lough Gill SAC.

The proposed development site is situated within the Bonet sub-catchment. Therefore, any national, regional or local land use plans, along with any existing or proposed projects, further upstream in the catchment, or in the same groundwater body, have the potential to affect water quality in the Bonet catchment and therefore also have the potential to act in-combination with the proposed development to affect the above European sites.

Any plan or existing/proposed project that could potentially affect the Natura 2000 sites above in-combination with the proposed development must adhere to the overarching environmental protective policies and objectives of the relevant land use plan. These policies and objectives will ensure the protection of Natura 2000 sites and will include the requirement for any future project to undergo Screening for Appropriate Assessment and/or Appropriate Assessment.

##### Sligo County Development Plan

Planning policy at the local level is provided by the Sligo County Development Plan 2017–2023. This plan contains a number of objectives and policies relevant to ecology, biodiversity and nature conservation. It also sets out the requirement for proposed developments to be subjected to Appropriate Assessment.

### Future Plans / Other Projects

The Sligo County Council planning map tool was used to identify any current or future or projects which may potentially impact on Natura 2000 sites when considered in combination with the proposed development. In the preceding five years, a number of planning applications have been granted planning permission in the Hazelwood area. Where necessary, these applications were screened for AA, or else full AA was deemed necessary and an NIS was submitted. The proposed development will have no significant effects upon any designated site when considered in combination with other developments that have been properly screened or where mitigation is required following AA.

Any future application in the area that has the potential to impact upon Lough Gill SAC will be subjected to Appropriate Assessment as required under Articles 6(3) of the Habitats Directive. This current development will have no cumulative impacts upon the SACs / SPAs identified when considered in combination with any other development that has been screened for no impacts themselves (Stage 1) or where potential impacts have been mitigated against (Stage 2 AA / NIS).

## 5 MITIGATION MEASURES

In order to avoid any reductions in water quality in the area surrounding the proposed development, a number of mitigation measures must be implemented and followed. These measures will protect the water quality and integrity of the Lough Gill SAC and any other local watercourses. Measures have also been suggested that will help to protect the local biodiversity of the surrounding area and to ensure the protection of local wildlife. These are site specific measures and their implementation will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors. The primary parties responsible for the implementation of these measures include the applicants and the construction team (site manager, site workers).

### Pre-Construction and Construction

- Prior to the commencement of any site works, the applicant and the contactors must be made aware of the overall sensitivity of this site. They must be made familiar with the overall content of this NIS and they must be made aware of the mitigation measures contained in this NIS. A statement signed by personnel on site to say that they will adhere to the mitigation measures as outlined in this NIS must be presented to the Local Authority prior to the commencement of any works.
- Site preparation and construction should be confined to the development site only and should adhere to all the mitigation measures outlined in this NIS.
- Work areas must be kept to the minimum area required to carry out the proposed works and the area must be clearly marked out in advance of the proposed works.
- There must be no discharges of contaminated waters to ground or surface waters from this development, either during the construction or operation of the development. The control and management of hydrocarbons on site will be vital to prevent deteriorations in surface and groundwater quality locally. This is especially important considering the extreme groundwater vulnerability rating. The following measures should be employed on site:
  - Re-fuelling of equipment and machinery should be done off site. If this is not possible, then a dedicated re-fuelling location should be established on site in the compound area away from ground clearance or rock-breaking activities.
  - Spill kits stations should be provided at the fuelling location for the duration of the works.
  - Staff should be provided with training on spill control and the use of spill kits.

- All fuel storage containers should be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.
- All chemicals must be stored as per manufacturer's instructions. A dedicated chemical bund should be provided on site if chemicals are to be stored on site. Any chemicals used on site should be returned to the site compound and secured in a lockable and sealed container overnight in proximity to the fuel storage area.
- Procedures and contingency plans should be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms should be kept on site, on plant working near the water and at the refuelling area.
- Daily plant inspections will be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the applicant should remove the plant from operations for repairs.
- All personnel shall observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.
- Best practice concrete / aggregate management measures must also be employed on site.
  - It is important that run-off from the construction works does not enter the drains surrounding the site that lead to Lough Gill. Therefore, it is recommended that prior to the commencement of all works, that a silt fence is erected around the proposed construction site. The silt fences should be sturdy and constructed of a suitable geotextile membrane to ensure that water can pass through, but that silt will be retained. Straw bales could also be used as an effective measure to prevent the movement of silt from the works into the local watercourses.
  - The silt fences should be monitored daily to ensure that they remain functional throughout the construction of the proposed development. Maintenance of the fences should be carried out regularly. Fences should be inspected thoroughly after periods of heavy rainfall.
  - The washing out of concrete trucks or chutes on site should be avoided. If this cannot be avoided, then a designated concrete wash out area should be set up on site; typically, this will involve washing the chutes, pumps into a designated IBC before removing the waste water off site for disposal.

- Best practice in bulk-liquid concrete management should be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.
- Stockpile areas for sands and gravel must be kept to a minimum size, well away from the drain on site.
- Where concrete shuttering is used, measures should be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
- Activities which result in the creation of cement dust should be controlled by dampening down the areas.
- Raw and uncured waste concrete should be disposed of by removal from the site;
- Stockpile areas for sands and gravel must be kept to a minimum size.
- All construction waste must be removed from site by a registered contractor to a registered site. Evidence of the movement and safe disposal of the construction waste will be retained and presented to Local Authority upon request. The applicants and construction contractors will be responsible for the safe removal of any construction waste generated on site. There must be no disposal of construction waste or spoil in areas outside of the application site.

#### **Site operation and Landscaping**

- The treatment plant and percolation area must be installed under the supervision of a suitably qualified engineer. It must be operated and maintained in accordance with its design specifications. It should be serviced regularly and emptied annually by a registered contractor.
- During operation, only clean water should be discharged to the onsite soakpits.
- During operation only low intensity lighting should be used on the development. This will reduce the impact of any new lighting scheme on local bat populations. Lights should not be directed on known bat roosts.
- The future landscaping of the site should adhere to the following recommendations:
  - The existing hedgerows on site should be retained and supplemented with additional suitable planting if necessary.
  - Only native trees and shrubs should be used in the landscaping.
  - A proportion of the grass areas should be maintained through methods that mimic traditional grassland management (low level grazing and mowing regimes). This will benefit local pollinators.
  - Where possible the importation of topsoil from outside the area should be avoided.

- Bare soil should be seeded as soon as possible with grass seed. This will minimise erosion into local drains and watercourses.
- The removal of vegetation with herbicides should be avoided.

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## 6 APPROPRIATE ASSESSMENT CONCLUSION

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the Lough Gill SAC. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon any designated habitat or any species dependent on these designated habitats. The attributes and targets which have been set out in order to maintain or restore the favourable conservation condition of these interests in the SAC will not be impacted upon.

In light of the above, it is considered that with the implementation of the mitigation measures, that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of the Lough Gill SAC. The integrity of the site will not be adversely affected. Table 10 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	Yes / No
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N



Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	N
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	N
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

**Table 5 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002))**

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