

**Natura Impact Statement
of a Proposed Development at
Killanley, Ballina, Co. Sligo**

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1 Introduction

1.1 Requirement for an Appropriate Assessment

In January 2023, Coyle Environmental was appointed on behalf of Shane Loftus and Karen Smyth to provide the necessary information to allow the competent authority (in this case Sligo County Council) to conduct an Article 6 (3) Appropriate Assessment for a proposed residential development at Killanley, Ballina, Co. Sligo. This information is being submitted as a Natura Impact Statement (NIS).

The purpose of this NIS 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 an 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). 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.

Accordingly, a comprehensive assessment of the potential significant effects of this application on Natura 2000 sites was carried out in January 2023 by Noreen McLoughlin, MSc, MCIEEM. 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.

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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.

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2.2 Statement of Competency

The site survey and NIS was carried out by Noreen McLoughlin. Noreen holds a BA (Hons) in Natural Science (Mod) Zoology and an MSc in Freshwater Ecology (TCD). She has been a full member of the CIEEM (Chartered Institute of Ecology and Environmental Management) for over 16 years. Noreen has over 17 years' experience as a professional ecologist in Ireland and she has undertaken an extensive number of Ecological Impact Assessments and Appropriate Assessments for various types of developments in recent years.

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.
- Myplan.ie – Mapped based information.
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area.
- Bing maps & Google Street View – High quality aerials and street images;
- Simon Beale and Associates / Coyle Environmental – Plans and Information Pertaining to the Development.
- Sligo County Council – Information on planning history in the area for the assessment of cumulative impacts.

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 SSCOs should be considered in detail.

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3 Screening

3.1 Development Description

Shane Loftus and Karen Smyth are applying to Sligo County Council for planning permission for a residential development on lands at Killanley, Ballina, Co. Sligo. Planning permission is being sought here for the construction of a dwelling house. Permission also pertains to the installation of a wastewater treatment plant and percolation area and all associated site development works. An extract from the planning drawings is shown in Figure 1.

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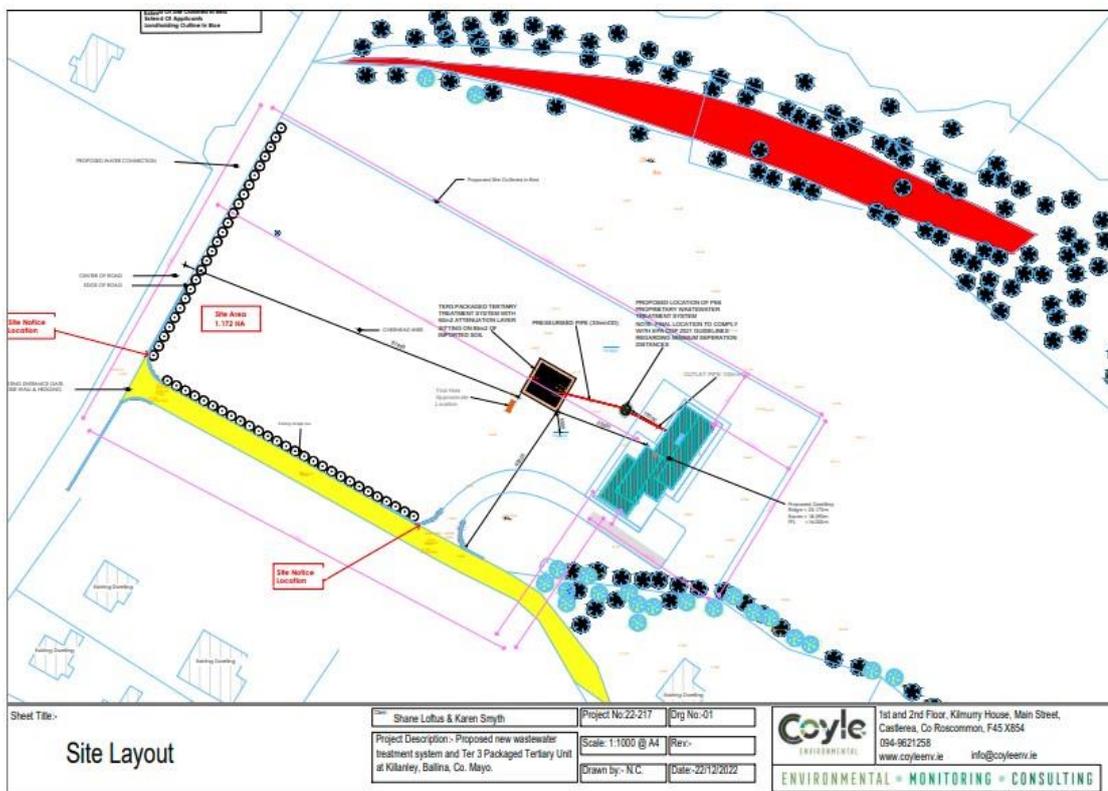


Figure 1 Extract from Site Plan (as Prepared by Simon Beale and Associates)

Surface Water Treatment

Surface water run-off from the site will be directed to onsite soakaways.

Wastewater Treatment

The application site is located within a locally important aquifer (Li) with extreme vulnerability. It has an R2¹ groundwater protection response, which means that the proposed risk is acceptable subject to normal good practice and subject to certain additional criteria around soil depth being met. The site characterisation form pertaining to this development (as prepared by Coyle Environmental) has concluded that a tertiary treatment system and percolation area will be suitable for this site. A EuroTank BAF2 System (certified to EN 12566-3) and a TER3 percolation unit has been recommended. It has a treatment efficiency of 92.9% COD, 96.4% BOD, 84.3% NH4-N and 96.9% suspended solids. This will be constructed and operated in accordance with the EPA 2021 Guidelines. It will discharge to groundwater, which in this area is likely to flow in a westerly direction.

3.2 Site Location and Surrounding Environment

The application site is approximately 0.99 hectares, and it is located in a rural area, in the townland of Killanley. It will be accessed via the creation of a new entrance that will be just off a local, third-class road. The site is 6.2km north of Ballina and 5.6km south of Enniscrone.

The main land-use surrounding the site is low-intensity agriculture and the dominant habitats locally include improved and semi-improved agricultural grasslands and these habitats largely surround the site. Other habitats close to the application site include wet and poorly drained grasslands, hedgerows, treelines, woodlands and watercourses. The site is very close to the river Moy and its estuarine sand and mudflat habitats. Site location maps are shown in Figures 2 and 3, whilst an aerial photograph of the site and its surrounding habitats are shown in Figure 4.



Figure 2 Site Location Map (Site Pinned)



Figure 3 Site Location Map (Site Outlined in Red)

Habitats and Notable Species

The site is not within nor is it immediately adjacent to any site that has been designated for nature conservation purposes. The site is being removed from a field that is currently being used for agricultural purposes and the dominant habitat within it is improved agricultural grassland. The north-western site boundary consists of a stone wall and grassy verge, and the south-western boundary consists of a low hedgerow. The remaining site perimeters are not currently defined by any natural feature.

An examination of the website of the National Biodiversity Data Centre, revealed that there are records for the presence of the following plant or mammal species from the relevant 1km square (G2624) of this proposed development.

- Narrow-mouthed Whorl Snail (*Vertigo angustior*)
- European Otter (*Lutra lutra*)
- Lesser Noctule (*Nyctalus leisleri*)
- Pipistrelle (*Pipistrellus pipistrellus sensu lato*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)

All these species are protected under the Irish Wildlife Acts. The whorl snail and the otter are additionally protected under the EU Habitats Directive. A custom polygon that was generated for the site revealed that these records do not pertain to from within the application site itself.

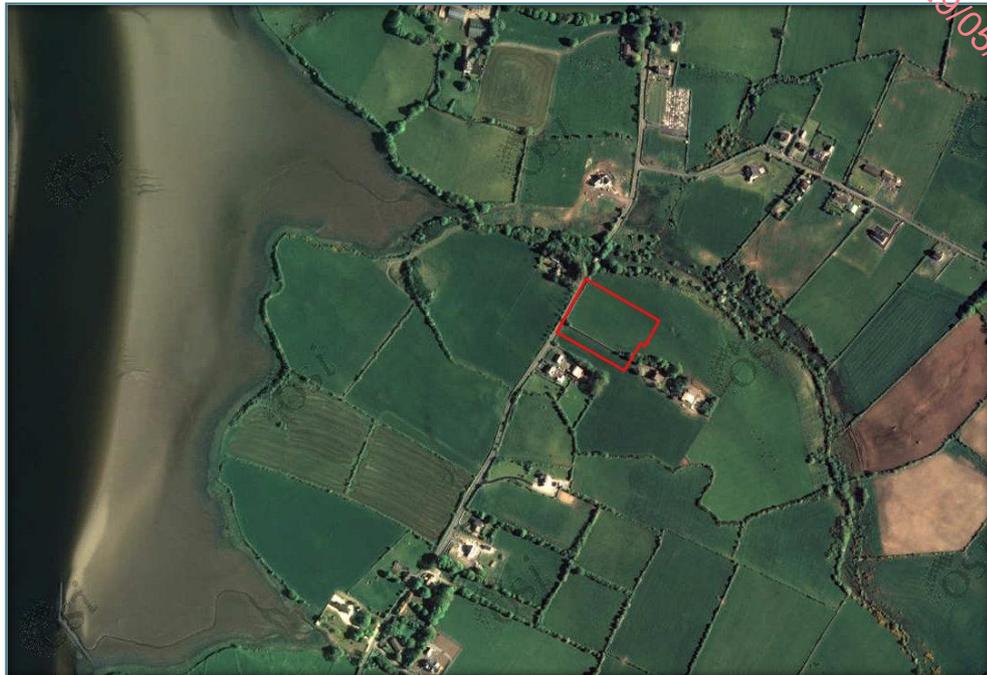


Figure 4 Aerial Photograph Showing Habitats Surrounding the Application Site (Outlined in Red)

Water Features and Quality

The application site is located within the Moy and Killala Bay Hydrometric Area (34) and Catchment (34), the Leaffony Sub-Catchment (010) and the Dooyeaghy Sub-Basin (010). There is a drainage ditch along the western (roadside) boundary. Any water in this drain is likely to flow north towards the Newtown River, which is approximately 50m north of the site. This stream rises in lands to the east of the site. It flows west through agricultural land, until it enters the Moy estuary at a point 182m west of the application site.

The EPA have defined the ecological status of the Newtown River and its tributaries at points close to the application site as good status. The River Moy Estuary is classed as moderate status at points downstream of Ballina. Under the requirements of the Water Framework Directive, good status must be achieved in these waters within the timeframe set out in the Directive.

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.

The proposed works are within 15km of seven sites that have been designated under the EU Habitats Directive and the EU Birds Directive. These designated areas and their closest points to the development are outlined in Table 1 and maps and aerial photographs showing their locations relative to the application site are shown in Figures 5 and 6. A full description of these sites can be read on the website of the National Parks and Wildlife Service (npws.ie).

Table 1 Natura 2000 Sites Within 15km of the Proposed Site

Site Name & Code	Distance	Qualifying Interests	Screened In / Out
Killala Bay/Moy Estuary	16m north	<ul style="list-style-type: none"> Estuaries 	Screened In – Having regards to the

Site Name & Code	Distance	Qualifying Interests	Screened In / Out
SAC 000458		<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide. • Annual vegetation of drift lines • Salicornia and other annuals colonising mud and sand. • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) • Embryonic shifting dunes • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) • Fixed coastal dunes with herbaceous vegetation (grey dunes) • Humid dune slacks • <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) • <i>Petromyzon marinus</i> (Sea Lamprey) • <i>Phoca vitulina</i> (Common Seal) 	<p><i>proximity and connectivity of this site to this SAC, then significant effects upon this SAC and its QIs arising due to the construction and operation of this proposed development cannot be ruled out.</i></p>
Killala Bay/Moy Estuary SPA 004036	187m north-west	<ul style="list-style-type: none"> • Ringed Plover (<i>Charadrius hiaticula</i>) • Golden Plover (<i>Pluvialis apricaria</i>) • Grey Plover (<i>Pluvialis squatarola</i>) • Sanderling (<i>Calidris alba</i>) • Dunlin (<i>Calidris alpina</i>) • Bar-tailed Godwit (<i>Limosa lapponica</i>) • Curlew (<i>Numenius arquata</i>) • Redshank (<i>Tringa totanus</i>) 	<p><i>Screened In – Having regards to the proximity and connectivity of this site to this SPA, then significant effects upon this SPA and its QIs arising due to the construction and operation of this proposed development cannot be ruled out.</i></p>

Site Name & Code	Distance	Qualifying Interests	Screened In / Out
		<ul style="list-style-type: none"> Wetland and Waterbirds 	
River Moy SAC 002298	5.2km south	<ul style="list-style-type: none"> Active raised bogs Degraded raised bogs still capable of natural regeneration. Depressions on peat substrates of the Rhynchosporion Alkaline fens Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) <i>Austropotamobius pallipes</i> (White-clawed Crayfish) <i>Petromyzon marinus</i> (Sea Lamprey) <i>Lampetra planeri</i> (Brook Lamprey) <i>Salmo salar</i> (Salmon) <i>Lutra lutra</i> (Otter) 	<p><i>Screened Out – Having regards to the lack of connectivity and the fact that this SAC is hydrologically upstream of any influences from this proposed development, then significant effects upon this site can be ruled out.</i></p>
Ox Mountains Bogs SAC 002006	11km east	<ul style="list-style-type: none"> Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) Natural dystrophic lakes and ponds Northern Atlantic wet heaths with <i>Erica tetralix</i> European dry heaths Blanket bogs (* if active bog) Transition mires and quaking bogs Depressions on peat substrates of the Rhynchosporion 	<p><i>Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, and significant effects upon this SAC will not arise.</i></p>

Site Name & Code	Distance	Qualifying Interests	Screened In / Out
		<ul style="list-style-type: none"> • Marsh Saxifrage (<i>Saxifraga hirculus</i>) • Geyer's Whorl Snail (<i>Vertigo geyeri</i>) 	
Lough Conn and Lough Cullin SPA 004228	11.4km south-west	<ul style="list-style-type: none"> • Tufted Duck (<i>Aythya fuligula</i>) • Common Scoter (<i>Melanitta nigra</i>) • Common Gull (<i>Larus canus</i>) • Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) • Wetland and Waterbirds 	Screened Out - There is no hydrological or ecological connectivity between the application site and this SPA, and significant effects upon this SPA will not arise.
Lough Hoe Bog SAC 000633	12km south-east	<ul style="list-style-type: none"> • Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) • Blanket bogs (* if active bog) • <i>Vertigo geyeri</i> (Geyer's Whorl Snail) • <i>Austropotamobius pallipes</i> (White-clawed Crayfish) 	Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, and significant effects upon this SAC will not arise.
Lackan Saltmarsh and Kilcummin Head SAC 000516	13.1km north-west	<ul style="list-style-type: none"> • Salicornia and other annuals colonising mud and sand. • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) • Fixed coastal dunes with herbaceous vegetation (grey dunes) * 	Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, and significant effects upon this SAC will not arise.

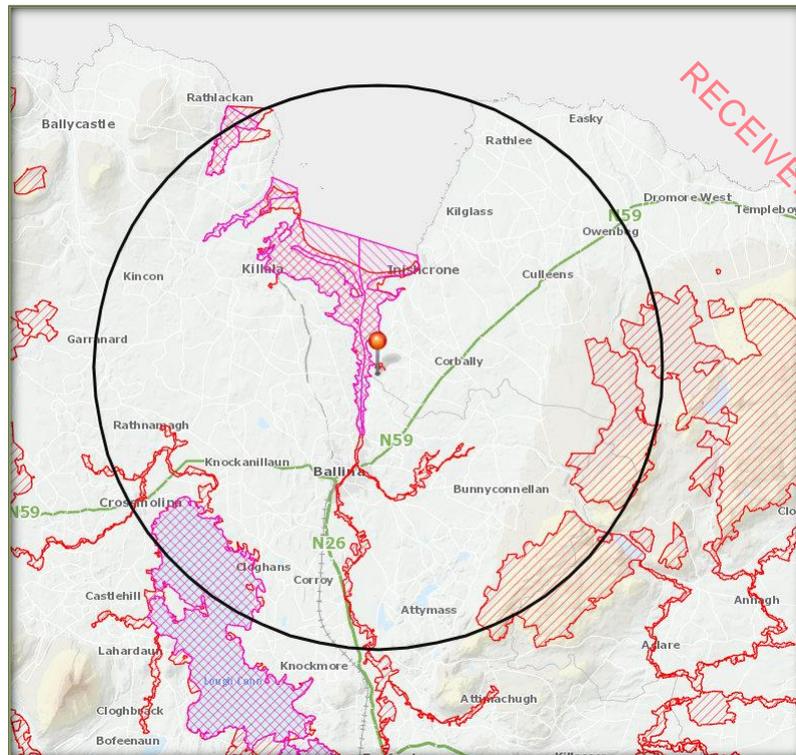


Figure 5 The Application Site (Pinned) in relation to the Designated Sites within 15km. SACs - Red Cross Hatching, SPAs – Red Vertical Hatching.



Figure 6 The Application Site (Outlined in Red) in relation to the Killala Bay and Moy Estuary SAC (Red Hatching) and SPA (Pink Hatching)

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3.4 Identification of Potential Impacts

The proposed development at Killanley will occur on a site that is in close proximity to and hydrologically connected to the Killala Bay / Moy Estuary SAC and SPA. The development is not directly connected with or necessary for the management of the site, therefore significant effects upon this designated site arising from the construction and operation of this proposed development cannot be ruled out in the absence of mitigation.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the Killala Bay/Moy Estuary SAC / SPA have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. The following areas were examined in relation to potential impacts from the proposed development on the Natura 2000 sites identified:

1. Habitat loss, fragmentation, or disturbance to habitats within the SAC / SPA.
2. Deterioration of water quality in designated areas resulting from pollution from surface water run-off during site preparation and construction.
3. Deterioration of water quality in designated areas arising from pollution during the operation of the site.
4. Cumulative impacts with other proposed/existing developments.

3.5 Assessment of Significance

This section considers the list of sites identified in Section 3.3. It can be considered that all sites, with the exception of the Killala Bay/Moy Estuary SAC / SPA can be excluded from the remainder of the Appropriate Assessment process. This is based on their distance from the proposed development and the fact that they are outside of the Zone of Influence of these sites and that no impacts are likely to arise. The remaining concerns will therefore focus upon the protected habitats and species of the Killala Bay/Moy Estuary SAC / SPA.

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 Killala Bay/Moy Estuary SAC / SPA in relation to the proposed development at Killanley, 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 Killanley, (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Killala Bay/Moy Estuary SAC / SPA 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 2000s 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 sites that has been 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

Killala Bay/Moy Estuary SAC 000458

Situated on the north Mayo/Sligo coast, this large site comprises the inner part of Killala Bay, including the estuary of the River Moy from downstream of Ballina. The towns of Enniscrone and Killala occur on the eastern and western shores respectively. Sand dunes systems, estuaries and intertidal areas are the main habitats of the site. Bartragh Island, a sand bar on which a dune system has developed, stretches across most of the outer part of the site. A further dune system protrudes westwards from Enniscrone, while more dunes occur at the Ross peninsula in the north-west of the site. Other habitats present include salt marshes, dry grassland, reedbeds and scrub.

This large site displays an excellent diversity of dune types and is one of the most important dune systems in the north-west region. There remains a substantial area of intact fixed dune despite modifications to parts of the site for recreational and agricultural purposes. Some humid dune slacks also occur, and there are good and fairly extensive examples of shifting dunes with marram, embryonic shifting dunes and annual vegetation of driftlines. Salt marshes are well represented, with both Atlantic salt meadows and *Salicornia* types present. The Moy estuary is an important example of an estuary and has extensive intertidal sand and mud flats. Water quality is very

good. The site is important for the occurrence of the Annex II mollusc *Vertigo angustior*, which occurs in marsh habitat. An excellent diversity of waterfowl winter at site, including two Annex I Bird Directive species (*Pluvialis apricaria*, *Limosa lapponica*). Seven other species winter in nationally important numbers, and in some winters internationally important concentrations of *Branta bernicla hrota* occur. Two Red Data plant species are known from site. The site supports an important population of *Phoca vitulina* and both adult and juvenile *Petromyzon marinus*.

Killala Bay SAC - Habitats Near to the Application Site

The habitats within the SAC at points close to the application site consist of the aquatic habitats of the estuary and the intertidal mudflats and sandflats. The closest designated habitats to the application site are to the north along the course of the Newtown River. The habitats here include woodland, river and riparian wetlands and marsh. These habitats are important for *Vertigo angustior*, which is a QI of this site.

Site Specific Conservation Objectives

In 2012, the NPWS published Site Specific Conservation Objectives (SSCOs) for this SAC. These conservation objectives were also supported by a number of other documents relating to the marine and coastal habitats of this large SAC. The NPWS Qualifying Interests and SSCO of the Killala Bay / Moy Estuary SAC are described below in Tables 2 to 13.

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Narrow-mouthed Whorl Snail *Vertigo angustior* (1014)

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

Table 2 SSCO for Narrow Mouthed Whorl Snail

Attribute	Measure	Target
Distribution: occupied sites Number	No decline.	There is one known site for this species in this SAC.
Presence on transect	Occurrence	Adult or sub-adult snails are present in at least 3 places on the transect where optimal or sub-optimal habitat occurs (minimum 5 samples)
Abundance	Number per sample	At least 2 samples on the transect have more than 10 <i>V. angustior</i> individuals (minimum 5 samples)
Transect habitat quality	Metres	More than 50m of habitat along the transect is classed as optimal or sub-optimal
Transect optimal wetness	Metres	Soils, at time of sampling, are damp (optimal wetness) and covered with a layer of humid thatch for more than 50m along the transect
Habitat area	Hectares	1.465ha of potential habitat (optimal and sub-optimal); Optimal habitat is defined as marsh with transition of ecotone between red fescue (<i>Festuca rubra</i>) and silverweed (<i>Potentilla anserina</i>) wet grassland and waterlogged marsh dominated by yellow iris (<i>Iris pseudacorus</i>) and low growing herbs. Vegetation height 20-40cm. Habitat growing on wet to saturated soil covered with a deep layer of mosses and humid, open structured thatch. Sub-optimal habitat is defined as for optimal habitat, but either vegetation height is less than 20cm, or between 40 and 50cm; or the soil is dry, or covered with standing water

Potential Significant Effects

Map 8 of the SSCO confirms that this species is recorded from the wetland habitats around Newtown River, which are just to the north of the site. In

the absence of mitigation, significant effects upon this species cannot be ruled out. Effects could arise due to pollution in the marshland habitats that support this species from run-off during construction and operation. Any disposal of waste or soil along the river here, combined with any clearance of the habitats along the river and in the wetlands, could result in significant and long-term effects upon this species.

Sea Lamprey (1095)

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

Table 3 SSCOs for Sea Lamprey

Attribute	Measure	Target
Distribution: Extent of Anadromy	% of estuary accessible	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa
Population structure of Juveniles	Number of age / size groups	At least three age/size groups present
Juvenile density in fine sediment	Juveniles/m ²	Juvenile density at least 1/m ²

Potential Significant Effects

Sea lampreys are sensitive to pollution and sedimentation. Therefore, as there is direct connectivity between the application site and the habitat of this species, significant effects upon this species cannot be ruled out.

Estuaries (1130)

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

Table 4 SSCOs for Estuaries

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Extent	Hectares	Maintain the extent of the <i>Zostera</i> -dominated community, subject to natural processes.
Community structure: <i>Zostera</i> density	Shoots per m ²	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes

Community distribution	Hectares	Conserve the following community types in a natural condition: muddy sand to fine sand dominated by <i>Hydrobia ulvae</i> , <i>Pygospio elegans</i> and <i>Tubificoides benedii</i> community complex; Estuarine muddy sand dominated by <i>Hediste diversicolor</i> and <i>Heterochaeta costata</i> community complex; and Fine sand dominated by <i>Nephtys cirrosa</i> community complex.
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Potential Significant Effects

The application site is upstream of the estuarine habitats of this SAC. In the absence mitigation, significant short term and/or long-term effects upon this QI in the SAC might arise due to run-off from the site during construction and / or operation. Run-off from the site could be polluted with cement, hydrocarbons or other chemicals.

Mudflats and sandflats not covered by seawater at low tide (1140)

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

Table 5 SSCOs for Mudflats and Sandflats not Covered by Seawater at Low Tide

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Extent	Hectares	Maintain the extent of the <i>Zostera</i> -dominated community, subject to natural processes.
Community structure: <i>Zostera</i> density	Shoots per m ²	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes.
Community distribution	Hectares	Conserve the following community types in a natural condition: muddy sand to fine sand dominated by <i>Hydrobia ulvae</i> , <i>Pygospio elegans</i> and <i>Tubificoides benedii</i> community complex; Estuarine muddy sand dominated by <i>Hediste diversicolor</i> and <i>Heterochaeta costata</i> community complex; and Fine sand dominated by <i>Nephtys cirrosa</i> community complex.

Potential Significant Effects

Potential impacts upon this habitat QI arising from the proposed application have been considered. Although this QI occurs within this SAC at points close to the application site (Map 4 of SSCO), water quality is not a target for the maintenance of this QI within the SAC. The targets relate to maintenance of habitat area, and community extent, structure and distribution. The proposed development will not lead to any changes in the area, community extent, structure or distribution of this habitat within this SAC. There will be no direct or indirect effects upon this QI arising from the proposed development.

Annual Vegetation of Drift Lines (1210)

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

Table 6 SSCOs for Annual Vegetation of Drift Lines

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes including erosion and succession.
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes
Physical structure: functionality and sediment supply	Presence/absence of physical barriers	Maintain the natural circulation of sediment and organic matter, without any physical obstructions
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain the presence of species-poor communities with typical species: sea rocket (<i>Cakile maritima</i>), sea sandwort (<i>Honckenya peploides</i>), prickly saltwort (<i>Salsola kali</i>) and Orache (<i>Atriplex</i> spp.)
Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover

Potential Significant Effects

Map 7 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the beach and dune habitats at Bartrach Island, which is over 6km north-west of the application site. Water quality is not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

Salicornia and other Annuals Colonising Mud and Sand (1310)

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

Table 7 SSCOs for Salicornia and Other Annuals Colonising Mud and Sand

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Sediment Supply	Presence / Absence of Physical Barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical Structure: Creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical Structure: Flooding Regime	Hectares Flooded: Frequency	Maintain natural tidal regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Structure: Vegetation Cover	% Cover at a Representative Sample of Monitoring Stops	Maintain more than 90% of area outside creeks vegetated
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover	Maintain the presence of species-poor communities listed in the salt marsh project.
Vegetation Structure: Negative Indicator Species – <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1%.

Potential Significant Effects

Map 6 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the western end of Bartrach Island, which is over 7km north-west of the application site. Water quality is not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

Atlantic Salt Meadows (1330)

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

Table 8 SSCOs for Atlantic Salt Meadows

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Sediment Supply	Presence / Absence of Physical Barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions
Physical Structure: Creeks and pans	Occurrence	Maintain creek and pan structure, subject to natural processes, including erosion and succession
Physical Structure: Flooding Regime	Hectares Flooded: Frequency	Maintain natural tidal regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Vegetation Height	Centimetres	Maintain structural variation within sward
Vegetation Structure: Vegetation Cover	% Cover at a Representative Sample of Monitoring Stops	Maintain more than 90% of area outside creeks vegetated
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in Saltmarsh Monitoring Project
Vegetation Structure: Negative Indicator Species – <i>Spartina anglica</i>	Hectares	No significant expansion of common cordgrass (<i>Spartina anglica</i>), with an annual spread of less than 1%

Potential Significant Effects

Map 6 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted as occurring at points close to the application site, ~189m west. In the absence mitigation, significant short term and / or long-term

effects upon this QI in the SAC might arise due to run-off from the site during construction and / or operation. Run-off from the site could be polluted with cement, hydrocarbons or other chemicals.

Harbour Seal *Phoca vitulina* (1365)

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

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Table 9 SSCOs for Harbour Seal

Attribute	Measure	Target	Potential Impacts Upon Targets
Access to Suitable Habitat	Number of Artificial Barriers	Species range within the site should not be restricted by artificial barriers to site use.	No
Breeding Behaviour	Breeding Sites	Conserve breeding sites in a natural condition	No
Moulting Behaviour	Mould Haul-Out Sites	Conserve moulting haul-out sites in a natural condition	No
Resting Behaviour	Resting Haul-Out Sites	Conserve resting haul-out sites in a natural condition	No
Disturbance	Level of Impact	Human activities should occur at levels that do not adversely affect the harbour seal populations at this site.	No

Potential Significant Effects

Map 9 of the SSCO document provides a map showing the breeding, moulting and resting sites of the harbour seal. None of these occur close to the application site. Significant effects upon this species are not likely to occur.

Embryonic Shifting Dunes (2110)

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

Table 10 SSCOs for Embryonic Shifting Dunes

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Composition: Plant health of foredune grasses	% Cover	More than 95% of sand couch (<i>Elytrigia juncea</i>) and/or lyme-grass <i>Leymus arenarius</i> should be healthy (i.e., green plant parts above ground and flowering heads present)
Vegetation Composition: Typical Species and Sub-Species Communities	% Cover	Maintain the presence of species-poor communities with typical species: sand couch (<i>Elytrigia juncea</i>) and/or lyme-grass <i>Leymus arenarius</i>
Vegetation Composition: Negative Indicator Species – <i>Spartina anglica</i>	% Cover	Negative indicator species (including non-natives) to represent less than 5% cover

Potential Significant Effects

Map 7 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the beach and dune habitats at Bartrach Island, which is over 6km north-west of the application site. Water quality is not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no

loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

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Shifting Dunes along the Shoreline with *Ammophila arenaria* (white dunes) (2120)

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

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Table 11 SSCOs for Shifting Dunes along the Shoreline with *Ammophila arenaria* (white dunes)

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Composition: Plant health of dune grasses	% Cover	More than 95% of marram grass <i>Ammophila arenaria</i> and or lyme'grass <i>Leymus arenarius</i> should be healthy (i.e., green plant parts above ground and flowering heads present)
Vegetation Composition: Typical Species and Sub-Species Communities	% Cover at a Representative Sample of Monitoring Stops	Maintain the presence of species-poor communities dominated by marram grass (<i>Ammophila arenaria</i>) and/or lyme-grass (<i>Leymus arenarius</i>)
Vegetation Composition: Negative Indicator Species – <i>Spartina anglica</i>	% Cover	Negative indicator species (including non-natives) to represent less than 5% cover

Potential Significant Effects

Map 7 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the beach and dune habitats at Bartrach Island and Peninsula, at points approximately 4km north of the application site. Water quality is not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the

application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

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Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes) (2130)

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

Table 12 SSCOs for Fixed Coastal Dunes with Herbaceous Vegetation (Grey Dunes)

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation Structure: Bare Ground	% cover	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes
Vegetation Structure: Sward Height	Centimetres	Maintain structural variation within sward
Vegetation Composition: Typical Species and Sub-Species Communities	Percentage Cover at a Representative Sample of Monitoring Stops	Maintain range of subcommunities with typical species listed in Ryle et al (2009)
Vegetation Composition: Negative Indicator Species- s (including <i>Hippophae rhamnoides</i>)	Percentage Cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation Composition: Scrub and trees	Percentage Cover	No more than 5% cover or under control

Potential Significant Effects

Map 7 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the beach and dune habitats at Bartrach Island and Peninsula, at points 3.8km north of the application site. Water quality is

not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

Humid Dune Slacks (2190)

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

Table 13 SSCOs for Humid Dune Slacks

Attribute	Measure	Target
Habitat Area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat Distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes.
Physical Structure: Functionality and Sediment Supply	Presence / Absence of Physical Barriers	Maintain the Natural Circulation of Sediment and Organic Matter, without and physical obstructions
Physical structure: hydrological and flooding regime	Presence/ absence of water abstraction or drainage works	Maintain natural hydrological regime
Vegetation Structure: Zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: bare ground	Percentage cover	Bare ground should not exceed 5% of dune slack habitat, with the exception of pioneer slacks which can have up to 20% bare ground.
Vegetation structure: vegetation height	Centimetres.	Maintain structural variation within sward
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops)	Maintain range of sub- communities with typical species listed in Ryle et al. (2009
Vegetation composition: cover of <i>S. repens</i>	% cover; centimeters	Maintain more than 40% cover of creeping willow (<i>Salix repens</i>)

Vegetation composition: negative indicator species	Percentage cover	Negative indicator species (including non-natives) to represent less than 5% cover
Vegetation composition: scrub/trees	Percentage cover	No more than 5% cover or under control

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Potential Significant Effects

Map 7 of the SSCO document, illustrates the location of this habitat in the SAC. It is noted occurring on the dune habitats at Bartrach Island, approximately 4.7km north of the application site. Water quality is not a target for the maintenance of this QI within the SAC and in addition, there is no direct hydrological connectivity between the application site and this QI, therefore significant effects upon this QI can be ruled out. There will be no loss or fragmentation of this habitat in the SAC and significant effects upon this QI can be ruled out.

Killala Bay/Moy Estuary SPA 000458

NPWS Site Synopsis

This large site comprises the estuary of the River Moy and the inner part of Killala Bay, including Lackan Bay and Rathfran Bay, in Counties Mayo and Sligo. It is a funnel-shaped estuary, c. 7 km wide at its outer limit. It is very well sheltered by a sandy island, Bartragh, and by a sandy peninsula that extends from Enniscrone on the eastern side. Extensive intertidal sand and mud flats are exposed at low tide. For the most part, these flats are unvegetated, but mats of Eelgrass (*Zostera* spp.), Beaked Tasselweed (*Ruppia maritima*) and green algae (*Ulva* spp.) occur, which provide important feeding material for waterfowl species.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Ringed Plover, Golden Plover, Grey Plover, Sanderling, Dunlin, Bar-tailed Godwit, Curlew and Redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is very important for wintering waterfowl and provides excellent feeding grounds for the birds, as well as high-tide roosts. Eight species have populations of national importance, i.e. Ringed Plover (245), Golden Plover (2,361), Grey Plover (221), Sanderling (123), Dunlin (2,073), Bar-tailed Godwit (366), Curlew (731) and Redshank (372) - all figures are mean peaks for the five year period 1995/96 to 1999/2000). A range of other species occurs, including Light-bellied Brent Goose (170), Shelduck (64), Wigeon (339), Teal (236), Red-breasted Merganser (44), Red-throated Diver (15), Oystercatcher (531), Lapwing (1,854) and Greenshank (24). The site is also used by Mallard (92), Turnstone (50), Grey Heron (21) and Cormorant (40). Substantial numbers of gulls are present at the site during winter, including Black-headed Gull (338), Common Gull (368), Herring Gull (336) and Great, Black-backed Gull (120).

Killala Bay/Moy Estuary SPA is of high ornithological importance as it supports eight species that have populations of national importance, including a very

substantial population of Grey Plover (3.4% of the all-Ireland total). The presence of Red-throated Diver, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Killala Bay/Moy Estuary is a Ramsar Convention site.

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Site Specific Conservation Objectives

Site specific conservation objectives for this site and its species have been prepared (NPWs, 2013)¹. The maintenance of the species at favourable conservation condition is defined by the attributes and targets listed in Table 14.

Table 14 Conservation Objectives for SPAs

Parameter	Attribute	Measure	Target
Population	Population trend	Percentage change as per population trend assessment using waterbird count data collected through the Irish Wetland Bird Survey and other surveys	Long term population trend stable or increasing
Range	Distribution	Range, timing and intensity of use of areas used by waterbirds, as determined by regular low tide and other waterbird surveys.	No significant decrease in the range, timing or intensity of use of areas by the QI, other than that occurring from natural patterns of variation

For wetlands, the conservation objectives are:

Table 15 Conservation Objectives for SPAs (Wetlands)

Parameter	Attribute	Measure	Target
Area	Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3204 hectares, other than that occurring from natural patterns of variation

Potential Significant Effects upon this Bird QIs of the Killala Bay / Moy Estuary SPA

¹ NPWS (2013) Conservation Objectives: Killala Bay/Moy Estuary SPA 004036. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, and the Gaeltacht

The elements of the proposed development that could give rise to potentially significant effects on the Special Conservation Interest (SCI) bird species of the Killala Bay / Moy Estuary SPA have been considered and are discussed below:

- The discharge of polluted water during construction or operation into the Newtown River could lead to negative impacts upon water quality in the SPA which could give rise to significant negative effects upon the bird species of the SPA. Any reduction in water quality locally has the potential to undermine the habitats and the associated prey resource upon which the wetland bird species of the SPA rely. Such adverse effects could, over time, result in a decline in the long-term population trends of the bird species supported by the sections of the SPA surrounding the project site and discharge location (River Moy Estuary).
- Disturbance to foraging and roosting bird species as a result of noise stimuli generated during the construction phase or from visual stimuli during construction and operation of the proposed development – In order to provide an assessment of the potential disturbances to the QI bird species arising from the proposed development, the Waterbird Disturbance Mitigation Toolkit (Cutts et al, 2013) was referred to. Based on the observed responses of water birds (Primarily mallard and redshank) to various noise stimuli, it was possible to calculate the likely disturbance effect for a noise level on these bird species.

During the construction of the proposed development, the most significant source of noise will be generated by the excavator, which will dig the foundations for the house. No piling or blasting will be required for this project, so high intensity noise can be ruled out. The footprint of the foundations of the house and the main area of construction works and therefore the subsequent construction noise generated will be approximately 180m from the SPA. According to the Waterbird Toolkit, plant generating a noise of 110dB at source (such as the construction equipment that will be on site) will lead to a receptor dose of approximately 62dB at a point 170m from the source. As the SPA is a further 10m away from this 170m level, the generated noise at the SPA will

be lower still. This is within the acceptable 70dB threshold where impacts upon bird species are unlikely.

- Having regards to the distance and existing screening between the application site and the SPA, effects upon birds in the SPA arising from visual disturbances are also unlikely.

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4.3 Summary of Potential Impacts

Introduction

In the screening section of this report, in the absence of mitigation, the following possible impacts on the Killala Bay / Moy Estuary SAC / SPA were listed. These impacts are summarised below.

1. Habitat loss, fragmentation, or disturbance to habitats within the SAC / SPA
2. Deterioration of water quality in designated areas resulting from pollution from surface water run-off during site preparation and construction.
3. Deterioration of water quality in designated areas arising from pollution during the operation of the site.
4. Cumulative impacts with other proposed/existing developments.

These impacts could lead to effects upon the QIs of the SAC / SPA that have been screened in. In addition, any reductions in water quality in general in the River Moy Estuary arising from the proposed development would have an overall negative ecological impact on the SAC / SPA in general, without specifically affecting the QIs of the sites.

Habitat Loss and Fragmentation

Construction works will take place on a site that is ~16m from the Killala Bay / Moy Estuary SAC, at the wetland habitats along the Newtown River. Potential impacts may arise within these protected areas through the clearance of vegetation, or through the inappropriate storage or disposal of construction waste, spoil or topsoil on land outside of the application site boundary. This could lead to direct impacts upon the QIs of this SAC, including *Vertigo angustior*.

Deterioration in Water Quality in the SAC/SPA During Construction

The construction of the new building will involve the excavation of soil and the pouring of concrete for foundations and other hard surfaces. These works will occur on a site that is directly upstream of the Killala Bay / Moy Estuary SAC / SPA.

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If appropriate mitigation measures are not taken during construction and operation of the proposed development, then there is the possibility that water quality in the Newtown River and the Moy Estuary may be negatively impacted upon. Possible direct impacts include the pollution of the water during construction with silt, oil, cement, hydraulic fluid etc. In addition, as the site is also located within an area of extreme groundwater vulnerability, pollution to groundwater during excavations also poses a threat to water quality in the SAC / SPA.

Therefore, as there is a potential risk of direct and indirect impacts arising from the site preparation and construction of the proposed development, appropriate mitigation will be required to maintain and / or restore the conservation status of the QIs of the Killala Bay / Moy Estuary SAC / SPA.

Deterioration in Water Quality in the SAC Post Construction / Operation

Negative impacts upon water quality arising from the operation of this proposed development have also been considered. The most likely source of pollution during the operation of the development is the discharge of unclean surface water into local watercourses or polluted run-off arising from the inadequate management of the treatment plant and percolation area. As the site is within an area of extreme groundwater vulnerability, this may have a negative impact upon local groundwater resources. Groundwater quality can impact upon surface water quality as these two resources mix at the hyporheic zone, which is the region just under a river or stream bed where there is a mixing of shallow ground water and surface water.

Cumulative Impacts

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first; through persistent additions or losses of the same materials or resource, and second, -through the compounding effects as a result of the coming together of two or more effects (Bowers-Marriott, 1997).

As part of the Appropriate Assessment, in addition to the proposed works, other relevant projects and plans in the region must also be considered. This

step aims to identify at this stage any possible significant in-combination or cumulative effects / impacts of the proposed works on the Natura 2000 sites with other such plans and projects.

Relevant Current Plans

- Sligo County Development Plan 2017 – 2023. AA AA Screening Report was prepared for this plan (2016).
- NPWS Conservation Management Plans – No AA needed as they relate to the management of a Natura 2000 sites.

Other Current Projects

The Sligo County Council planning map tool was used to identify any current plans or projects which may potentially impact in combination with the proposed works on any Natura 2000 sites. A search of the planning portal of Sligo County Council for planning applications in the Killanley / Ballina / Enniscrone area for the past five years was undertaken. In this time, a number of domestic /agricultural applications were granted planning permission. Where necessary, these developments were either screened for AA and where necessary a Natura Impact Statement was submitted to mitigate against potential impacts that may arise.

Future Plans / Projects

In relation to current and future planning applications, Sligo County Council, as the competent authority, will screen each application/plan for AA. Any new application will be examined and the requirement for screening for AA (NIS) will be determined on a case-by-case basis to comply with the requirements of Article 6 of the Habitats Directive. Therefore, it is not considered that there will be any significant adverse in combination effects with the proposed works and any other development.

In summary, it is considered that with the implementation of effective mitigation (see Section 6) to avoid/negate any potential adverse impacts, there will be no potential for cumulative impacts arising in combination with any other plans or project which would be of significance in respect of

impacts affecting the conservation objectives or integrity of the Killala Bay /
River Moy Estuary SAC / SPA.

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5 Mitigation Measures

In order to prevent any impacts upon the qualifying interests of the European sites, a number of mitigation measures must be implemented and followed. These measures will protect the water quality and integrity of the Killala Bay / Moy Estuary SAC and SPA. 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 mitigation measures are site specific, and their implementation will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors.

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. There must be no works within or disturbance to the habitats within the Killala Bay / Moy Estuary SAC.
- There must be no interference with the habitats along the Newtown River that are north of the application site.
- The work areas must be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out and cordoned off in advance of work commencement.

Protection of Water Quality

- Site preparation and construction should adhere to best practice and should conform to any relevant guidelines in the Inland Fisheries Ireland publication *Requirements for the Protection of Fisheries Habitats during*

Construction and Development Works at River Sites (www.fisheriesireland.ie). Guidelines in the CIRIA (Construction Industry Research and Information Association) Publications including C532 – Control of Water Pollution from Construction, guidance for Consultants and Contractors should also be followed.

- It is vital that there is no deterioration in water quality in the Newtown River and further downstream in the Moy Estuary. Therefore, strict controls of erosion, sediment generation and other pollutants associated with the construction process should be implemented to reduce and intercept sediment release where necessary. It is strongly recommended that prior to the commencement of works, that a robust geotextile membrane silt fence is installed around the main construction works area in the site.
- All 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. An interceptor trench will be required in front of this silt fence. The silt fence must be capable of preventing particles of 425µm from passing through.
- 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. The following measures must be employed on site:
 - A dedicated re-fuelling location should be established on the site in a suitable compound area away from the proposed locations of excavations and groundworks. If possible, the re-fuelling of machines on site should be avoided.
 - The risk of fuel spillages on a construction site is at its greatest when refuelling plant. Therefore, only designated trained and competent operatives should be authorised to refuel plant on site. Plant and equipment should be brought to a designated refuelling area rather than refuelling at numerous locations about the site.

- Spill kits stations should be provided at the fuelling location for the duration of the works.
- Workers should be provided with training on spill control and the use of spill kits.
- All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements.
- 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. These will include:
 - Concrete mixers, chutes and pumps should be washed off site.
 - 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 at the front of the site and the Newtown River.

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- 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.
- The proposed treatment plant and percolation area must be installed and operated in accordance with the design specifications of the plant. It must be installed in full compliance with the EPA's Code of Practice 2021. All works must be supervised by an environmental engineer. The plant must be signed off upon and certified before use.

Protection of Habitats and Species

- 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.
- Any removal of hedgerow vegetation should be done outside of the bird nesting season.
- Inappropriate lighting could result in the fragmentation of the habitats of otters, bats and other nocturnal mammals. Therefore, it is recommended that night-time lighting is kept to a low level, that results in minimal spill.
- In so far as possible, landscaping should be sympathetic to the natural landscapes that surround the site. The future landscaping of the site should adhere to the following recommendations:
 - Existing vegetation should be retained.
 - 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. Locally sourced wildflower seed would also be beneficial.
 - Where possible the importation of topsoil from outside the area should be avoided.
 - When planting flowers, shrubs and trees native species should be used, ideally from a local source.
 - Garden plants that have the potential to become invasive must be avoided.

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 Killala Bay / Moy Estuary SAC / SPA. 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.

In light of the above, it is considered beyond reasonable scientific doubt that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of the Natura 2000 sites. 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.

Table 16 Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002))

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

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Result in loss or reduction of key features (e.g., tree cover, tidal exposure, annual flooding, etc.)	N
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