

Natura Impact Statement

Single House Development
at Ballincar, Co. Sligo





DOCUMENT DETAILS

Client: **HBK Architects**

Project Title: **Single House Development at Ballincar, Co. Sligo**

Project Number: **210233**

Document Title: **Natura Impact Statement**

Document File Name: **NIS – F – 2021.04.26 – 210233**

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Rev	Status	Date	Author(s)	Approved By
01	Final	26/04/2021	JOS	PR

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1. INTRODUCTION

1.1 Background

McCarthy Keville O’Sullivan Ltd. (MKO) has been appointed to provide the information necessary to allow the competent authority to conduct an Article 6(3) Appropriate Assessment of a proposed single house development at Ballincar, Co. Sligo.

An Appropriate Assessment Screening Report has been prepared and is provided in Appendix 1. This Article 6(3) Appropriate Assessment Screening Report has identified the European Sites upon which the proposed development has the potential to result in significant effects and the pathways by which those effects may occur. It has also identified those qualifying interests/special conservation interests that have the potential to be affected by the proposed development.

This report has been prepared in accordance with the European Commission guidance document Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001), European Communities (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission and the Department of the Environment’s Guidance on the Appropriate Assessment of Plans and Projects in Ireland (December 2009, amended February 2010).

In addition to the guidelines referenced above, the following relevant guidance was considered in preparation of this report:

1. *European Communities (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,*
2. *Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission,*
3. *EC (2007) Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission.*

1.2 Statement of Authority

A field assessment was undertaken by Pat Roberts (B.Sc., MCIEEM) on the 14th of December 2020. This report has been prepared by Julie O’Sullivan (B.Sc., M.Sc.). Julie is an experienced ecologist with over five years professional experience. This report has been reviewed by Pat Roberts (B.Sc., MCIEEM) who has over 15 years’ experience in ecological consultancy.

2. CONCLUSIONS OF ARTICLE 6(3) APPROPRIATE ASSESSMENT SCREENING REPORT

The Article 6(3) Appropriate Assessment Screening report, that is provided as Appendix 1 to this NIS, identified the potential for the proposed development to result in significant effects on the following European Sites:

- Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
- Lough Gill SAC
- Cummeen Strand SPA

Each of these sites is discussed individually below in terms of the Qualifying Interests/Special Conservation Interests with the potential to be affected and the pathways by which any such effects may occur.

2.1 Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

The individual pathways for effect that were identified in Table 3.1 of the AA Screening Report (Appendix 1) and the QIs with the potential to be affected are described below.

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA map). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on the following aquatic QI's species/habitats was identified in the form of deterioration of water quality/habitat quality and supporting habitats for aquatic fauna:

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]
- Embryonic shifting dunes [2110]
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]
- Petrifying springs with tufa formation (Cratoneurion) [7220]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Phoca vitulina* (Harbour Seal) [1365]

The potential for disturbance was also identified with regard to Harbour Seal.

2.2 Lough Gill SAC

The individual pathways for effect that were identified in Table 3.1 of the AA Screening Report (Appendix 1) and the SCIs with the potential to be affected are described below.

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA maps). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on

the following aquatic QI's species, which migrate through the Garavoge Estuary during their life cycle, was identified in the form of deterioration of water quality and supporting habitats for the following aquatic fauna:

- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Salmo salar* (Salmon) [1106]

2.3

Cummeen Strand SPA

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA maps). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on the SCI Wetland [A999] habitat was identified in the form of deterioration of water quality and therefore deterioration of supporting habitat for SCI species.

On a precautionary basis the potential for habitat loss and disturbance of the listed SCI species was also identified:

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Redshank (*Tringa totanus*) [A162]

3. DESCRIPTION OF PROPOSED DEVELOPMENT

3.1 Site Location

The site is located in Ballincar, Rosses Point, Co. Sligo, approximately 3km north-west of Sligo Town (grid reference: G 67402 38751). The site is accessed via a local road off the R291. The site is located approximately 90m north of Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and 95m north of Cummeen Strand SPA.

The location of the proposed development is shown in Figure 3.1.

3.2 Characteristics of the Proposed Development

3.2.1 Description of the project

The planning application is for a permission for the construction of a dwelling house, wastewater treatment system and all associated site works at Ballincar, Co. Sligo. The layout and elevations of the proposed development are shown in Drawings 16/51/101 & 16/51/300.

The boundaries will be formed with post and wire fencing and native hedgerow planting. New gate piers and gates will be installed along the western boundary, set back 5.5m from the road edge.

Wastewater

A site suitability assessment with regard to the onsite treatment of wastewater has been completed by a suitably qualified professional as part of the planning application for this development and is included as Appendix 1. The relevant conclusions of this report have been summarised below.

The site suitability assessment noted that the proposed site is located in a Regionally Important Aquifer, with a Moderate Vulnerability Rating. Ground conditions indicate that a wastewater treatment system and polishing filter would be suitable to treat and dispose of the domestic wastewater generated by this development, however, the use of a proprietary wastewater treatment system, packaged tertiary treatment system and distribution area of 25m² is recommended. All tanks, filters, etc. will be installed in accordance with EPA Code of Practice.

The site assessment notes that Ground conditions are favourable on this site and there will be further treatment for the wastewater in the soil. The average "T" value is 17.03 which indicates that the retention time in the soil will provide satisfactory treatment. Section 6.3, Interpretation of Percolation Test Results, of the EPA's publication "*Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. < 10)*" 2009 this states that when the "T" value is between 3 and 50 the site is suitable for the development of a septic tank system or a secondary treatment system discharging to groundwater.

The standard of domestic wastewater treatment proposed exceeds the recommendations contained in the EPA's publication "*Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. < 10)*" 2009 and there will be no risk to the environment from the proposed development. This system has I.S. EN-3 and SR.66 certification and a Treatment System Performance Standard of (mg/L) 10BOD, 10SS and 10NH₃ which indicates that the system is capable of providing a very high quality of wastewater.

Surface Water

A Soak Pit will be installed in line with specifications in the EPA Code of Practice (2009) for the collection and disposal of surface water within the proposed development site, As shown on drawing 16/51/101.

Lighting

A lighting plan has been prepared for the proposed development and full details are shown in drawing 16/51/101.

The lighting used during the operational phase will be directional, which will ensure that there is no light spill outside of the development footprint. High-power LEDs warm white (3000K) will be used to reduce blue light component and thereby ensure that there is no lighting disturbance to bats.

The light plan includes the use of specialist bollard and low-level downward directional luminaires (Midipoll ERCO or similar) to light the driveway. The lens will effectively project the luminous flux onto the target surface, without causing glare and is compatible with dark sky requirements. The layout and spacing of the lighting will ensure that there is no light spill outside of the site boundary.

Low level recessed wall lights will be used for the illumination of pathways (Façade luminaires - Lightmark ERCO). The light source is discreetly hidden to ensure glare free light. This lighting uses dark sky technology. Lightmark façade luminaires emit no spill light above the horizontal plane, ensuring glare free light with no light spill outside of the site boundary.

Other elements of the lighting plan include recessed soffit spotlights, recessed wall lights and high-level light will include narrow spotlights. There will be no upward tilt of any of the lighting. No hedgerows/treeline will be illuminated as part of the development. Any external security lighting will be set on motion-sensors and short (1 minute) timers.



- Map Legend**
- Site boundary
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)

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Drawing Title
Site Location

Project Title
Glacken Ballinacrahan NIS

Drawn By JOS	Checked By PR
Project No. 210233	Drawing No. 3.1
Scale 1:15000	Date 26.04.2021

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4. CHARACTERISTICS OF THE RECEIVING ENVIRONMENT

The ecological surveys that were undertaken to inform this NIS are fully described in this section. A general description of the ecology of the site of the proposed development is provided in the AA Screening Report in Appendix 1. The specific surveys that were undertaken to assess the potential effects on the identified European Sites are described below.

4.1 Ecological Survey Methodologies

4.1.1 Desk study

The desk study undertaken for this assessment included a thorough review of the available ecological data associated with the study area of the proposed development. Sources of data included the following:

- Review of NPWS Conservation Objectives supporting documents, site synopsis, standard data forms and supporting documents for EU Designated Sites,
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA), IFI fish maps,
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper,
- Review of NPWS Article 17 reporting, metadata and GIS database,
- Review of NPWS Article 12 reporting.

4.1.2 Ecological Multidisciplinary Walkover Survey

A multi-disciplinary ecological walkover survey was undertaken in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009). This survey provided baseline data on the ecology of the study area and assessed whether further detailed habitat or species-specific ecological surveys were required. The multi-disciplinary ecological walkover survey comprehensively covered the entire study area.

Habitats were classified in accordance with the Heritage Council's 'Guide to Habitats in Ireland' (Fossitt, 2000). Habitat mapping was undertaken with regard to guidance set out in 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2011). Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2010), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010).

The walkover survey was designed to detect the presence, or suitable habitat for a range of protected faunal species that may occur in the vicinity of the proposed development. During the multidisciplinary survey, a search for Invasive Alien Species (IAS), with a focus on those listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2011), was also conducted.

The walkover survey was undertaken on the 14th of December 2020 by Pat Roberts (B.Sc., MCIEEM). Although the survey timing does not fall within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011), all habitats within the site were readily identifiable.

4.2 Desk Study Results

4.2.1 Water Quality

The EPA web-mapper (<https://gis.epa.ie/EPAMaps/>) was consulted on the 06/04/2021 regarding the water quality and status of waterbodies that are located downstream of the site of the proposed development. Figure 3.1 illustrates the proposed development site in relation to the hydrological catchment and designated sites.

There are no mapped EPA watercourses within or near the proposed development site. The site is located within the Drumcliff hydrological sub-catchment and the Rosses Point groundwater catchment.

The Garavoge Estuary (IE_WE_470_0100) lies approximately 90m south of the proposed development site and is designated as part of the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and Cummeen Strand SPA. The Garavoge Estuary was assigned 'moderate' status in the Water Framework Directive monitoring program for the period 2013-2018.

The site is located within the Rosses Point groundwater catchment and lies in an area of moderate groundwater vulnerability. The Water Framework Directive (WFD) Groundwater Monitoring Programme (2013-2018) assigned this groundwater catchment as having 'good' status.

4.2.2 Inland Fisheries Ireland (IFI)

The Garavoge Estuary (WE_470_0100) was surveyed as part of the Water Framework Directive fish monitoring surveys in 2008. The estuary had a draft fish ecological status 'good' and a species richness of twelve with species recorded including common goby, European eel, five-bearded rockling, flounder, gadoid, lesser spotted dogfish, long-spined sea scorpion, pogge, pollack, sand goby, three-spined stickleback and two-spotted goby.

4.2.3 Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

A potential pathway for indirect effects on the following aquatic QI's species/habitats was identified in the form of deterioration of water quality and supporting habitats for aquatic fauna:

- > Estuaries [1130]
- > Mudflats and sandflats not covered by seawater at low tide [1140]
- > Embryonic shifting dunes [2110]
- > Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- > Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]
- > Petrifying springs with tufa formation (Cratoneurion) [7220]
- > *Petromyzon marinus* (Sea Lamprey) [1095]
- > *Lampetra fluviatilis* (River Lamprey) [1099]
- > *Phoca vitulina* (Harbour Seal) [1365]

The potential for disturbance was also identified with regard to Harbour Seal.

4.2.3.1 Review of conservation objectives

The relevant QIs and the associated conservation objectives are presented in Table 4-1.

Table 4-1 Qualifying Interest and Conservation Objectives

Qualifying Interest	Conservation Objective
Estuaries [1130]	To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Mudflats and sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Embryonic shifting dunes [2110]	To maintain the favourable conservation condition of Embryonic shifting dunes in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
Petrifying springs with tufa formation (Cratoneurion) [7220]	To maintain the favourable conservation condition of Petrifying springs with tufa formation (<i>Cratoneurion</i>) in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
<i>Petromyzon marinus</i> (Sea Lamprey) [1095]	To restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
<i>Lampetra fluviatilis</i> (River Lamprey) [1099]	To maintain the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
<i>Phoca vitulina</i> (Harbour Seal) [1365]	To maintain the favourable conservation condition of Harbour Seal in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

4.2.3.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures, and activities with the potential to impact on the SAC were reviewed and considered in relation to the proposed development. These are provided in Table 4-2.

Table 4-2 Site-specific threats, pressures and activities

Negative Impacts		
Rank	Threats and Pressures	
Low	J01.01	Burning down
High	F01.01	Intensive fish farming, intensification
Medium	D03.01 -	Port areas
Low	J02.11.01	Dumping, depositing of dredged deposits
Low	E03.03	Disposal of inert materials
Low	J02.12.01	Sea defense or coast protection works, tidal barrages
Medium	E01.03	Dispersed habitation
Medium	I01	Invasive non-native species
Medium	G02.01	Golf course

Negative Impacts		
Rank	Threats and Pressures	
Medium	A02.01	Agricultural intensification
Low	G05.01	Trampling, overuse
Medium	D03.01	Port areas
Low	G02.08	Camping and caravans
Medium	G01.03.02	Off-road motorized driving
Medium	G01.02	Walking, horseriding and non-motorised vehicles

A pathway for impact with regard to the site-specific threat/pressure *Dispersed habitation (E01.03)* was identified.

4.2.3.3 Qualifying Interests

4.2.3.3.1 **Estuaries [1130]**

According to the site-specific conservation objectives document (NPWS, 2013), the habitat area was estimated as 1258ha using OSi data and the defined Transitional Water Body area under the Water Framework Directive. The community extent was sourced based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012) and subtidal survey in 2010 (Aquafact, 2011).

According to the Article 17 reporting (NPWS, 2019) most of the pressures on estuaries come from various sources of pollution, including domestic wastewater, agriculture and marine aquaculture. Alien invasive species such as the naturalised Pacific oyster (*Magallana gigas*) are also recognised as a significant pressure. The Overall Status of the habitat is inadequate and deteriorating. This status is the same as the 2013 assessment; however the trend has changed, due to more accurate data, from improving to declining. This decline is considered to have been on-going since before the last assessment.

4.2.3.3.2 **Mudflats and sandflats not covered by seawater at low tide [1140]**

According to the site-specific conservation objectives document (NPWS, 2013), the habitat area within the SAC was estimated using OSi data as 2288ha. The community extent was sourced based on intertidal surveys undertaken in 2007 and 2010 (ASU, 2007, 2012).

According to the Article 17 reporting (NPWS, 2019) the overall status of the habitat is inadequate and deteriorating, the change in trend from improving to deteriorating due to a genuine decline in the habitat since 2013. This was caused partly by pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (*Magallana gigas*).

4.2.3.3.3 **Embryonic shifting dunes [2110]**

According to the site-specific conservation objectives document (NPWS, 2013), the habitat area within the SAC has been estimated based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). This habitat is very difficult to measure in view of its dynamic nature. It was recorded at four

sub-sites, giving an estimated total area of 33.95ha. The habitat extent has been estimated at four mapped sub-sites Coney Island - 0.67ha, Rosses Point - 32.27ha, Strandhill - 0.18ha and Yellow Strand - 0.83ha. The SSCO document states that further unsurveyed areas maybe present within this SAC.

According to the Article 17 reporting (NPWS, 2019) the overall status is assessed as inadequate with a stable trend due to pressures associated with recreation and coastal defences, which can interfere with sediment dynamics. This assessment is unchanged since the 2013 assessment.

4.2.3.3.4 **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]**

According to the site-specific conservation objectives document (NPWS, 2013), the habitat area within the SAC has been estimated based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). This habitat is very difficult to measure in view of its dynamic nature. It was recorded at four sub-sites, giving an estimated total area of 1.20ha. The habitat extent has been estimated at four mapped sub-sites Coney Island – 0.46ha, Rosses Point – 0.17ha, Strandhill - 0.10ha and Yellow Strand - 0.47ha. The SSCO document states that further unsurveyed areas maybe present within this SAC.

According to the Article 17 reporting (NPWS, 2019), the overall status of this habitat is assessed as inadequate with a stable trend mainly because of pressures associated with recreation and coastal defences, which may interfere with local sediment dynamics. This assessment is unchanged since the 2013 assessment.

4.2.3.3.5 **Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]**

According to the site-specific conservation objectives document (NPWS, 2013), the habitat area within the SAC has been estimated based on data from the Coastal Monitoring Project (CMP) (Ryle et al., 2009). It was recorded at four sub-sites, giving an estimated total area of 96.26ha. The habitat extent has been estimated at four mapped sub-sites Coney Island – 15.06ha, Rosses Point – 21.89ha, Strandhill – 40.14ha and Yellow Strand – 19.16ha. The SSCO document states that further unsurveyed areas maybe present within this SAC.

According to the Article 17 reporting (NPWS, 2019), the overall status of this habitat is assessed as bad, as in the 2013 report, due to pressures associated with recreation and ecologically unsuitable grazing practices. The trend is deteriorating due to poor results for structure and functions, but this is largely attributed to use of a different methodology and decline is considered to have been on-going since before the last assessment.

4.2.3.3.6 **Petrifying springs with tufa formation (*Cratoneurion*) [7220]**

According to the site-specific conservation objectives document (NPWS, 2013), the area of this habitat at Ballinac is recorded as 150m² along c.200m of cliff (internal NPWS files). The SSCO document states that further unsurveyed areas maybe present within this SAC.

This habitat occurs along a seepage line in low (generally less than 10m in height) clay sea cliffs near Ballinac (internal NPWS files). Lyons and Kelly (2013) recognise three main subtypes of spring. This site falls into the coastal springs subtype (the other two being woodland springs and inland non-wooded springs). The hydrological regime is currently unknown at this site. Petrifying springs rely on permanent irrigation, usually from upwelling groundwater sources or seepage sources. This site appears to be fed from water seeping through clay sea cliffs.

According to the Article 17 reporting (NPWS, 2019), the overall status of this habitat is assessed as inadequate, which is unchanged since the last reporting period. The trend is assessed as deteriorating

(reported as stable in 2013), which is due to improved knowledge, and decline is considered to have been on-going since before the last assessment.

4.2.3.3.7 **Petromyzon marinus (Sea Lamprey) [1095]**

According to the site-specific conservation objectives document (NPWS, 2013), this SAC only covers marine/estuarine habitat and it is not anticipated that it contains suitable spawning or nursery habitat. Migrating adult lamprey pass through the site en route to/from the Garavoge River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC, encompasses the freshwater elements of sea lamprey habitat. Potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants.

According to the Article 17 reporting (NPWS, 2019), the overall conservation status of *P. marinus* has remained unchanged since the previous reporting period and is assessed as bad. The range is assessed as bad as it is more than 10% below the favourable reference range. The population is assessed as bad as it is estimated to be more than 25% below the favourable reference population. The habitat is assessed as inadequate as the area is not considered large enough to ensure the future long-term viability of sea lamprey. This assessment has changed since the previous reporting period and is based on new data and best expert judgement.

4.2.3.3.8 **Lampetra fluviatilis (River Lamprey) [1099]**

According to the site-specific conservation objectives document (NPWS, 2013), this SAC only covers marine/estuarine habitat and it is not anticipated that it contains suitable spawning or nursery habitat. Migrating adult lamprey pass through the site en route to/from the Garavoge River, which flows out of Lough Gill. Lough Gill SAC (site code: 1976), which is adjacent to this SAC, encompasses the freshwater elements of river lamprey habitat. Potential barriers for migrating lamprey include anthropogenic physical barriers and chemical barriers e.g. oxygen depletion or discharge of noxious pollutants.

According to the Article 17 reporting (NPWS, 2019), ‘*Given the large area of habitat availability and the likelihood that, in certain flow conditions, river lamprey are able to ascend many of the significant weirs on Irish rivers, it is possible that, in reality, they have a favourable conservation status. The inability to distinguish between L. fluviatilis and L. planeri larvae, however, and the challenges associated with sampling for adult river lamprey, means that an evaluation of their actual range and population size cannot be undertaken and status is assessed as unknown for the current reporting period.*

4.2.3.3.9 **Phoca vitulina (Harbour Seal) [1365]**

According to the site-specific Conservation objectives supporting document-Marine habitats and species (NPWS, 2013), Harbour seals in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC occupy both aquatic habitats and intertidal shorelines that become exposed during the tidal cycle. The species is present at the site throughout the year during all aspects of its annual life cycle which includes breeding (May to July approx.), moulting (August to September approx.) and non-breeding foraging and resting phases (October to April). Comparatively limited information is available for this site from the moult period in the annual cycle spanning the months of August and September. In acknowledging the limited understanding of aquatic habitat use by the species within the site it should be noted that all suitable aquatic habitat is considered relevant to the species range and ecological requirements at the site and is therefore of potential use by harbour seals.

Current information on locations selected by harbour seals in Cummeen Strand/Drumcliff Bay SAC during the breeding season is comparatively limited. Current sites are broadly within the following areas: sandbank areas south of Lissadell Strand and Ballygilgan Strand.

Current information on resting locations selected by harbour seals in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC outside the breeding season is comparatively limited. Current sites are broadly in the following areas: sandbanks to the north of Rosses Point, south of Ballygilgan Strand and Lissadell Strand.

According to the Article 17 reporting (NPWS, 2019), based on the assessments for range, population, habitat and future prospects parameters, the overall conclusion is that the conservation status of harbour seal in Ireland is considered favourable. This overall result and the results for the three assessment parameters are the same as in the previous two Article 17 assessments (i.e. favourable).

4.2.4 Lough Gill SAC

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA maps). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on the following aquatic QI's species, which migrate through the Garavoge Estuary during their life cycle, was identified in the form of deterioration of water quality and supporting habitats for aquatic fauna:

- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Salmo salar* (Salmon) [1106]

4.2.4.1 Review of Conservation Objectives

The relevant QIs and the associated conservation objectives are presented in Table 4-4.

Table 4-3 Qualifying Interest and Conservation Objectives

Qualifying Interest (QI)	Conservation Objective
<i>Petromyzon marinus</i> (Sea Lamprey) [1095]	To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected
<i>Lampetra fluviatilis</i> (River Lamprey) [1099]	
<i>Salmo salar</i> (Salmon) [1106]	

4.2.4.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to effect on the SAC were reviewed and considered in relation to the proposed development. These are provided in Table 4-5.

Table 4-4 Site-specific threats, pressures and activities

Negative Impacts		
Rank	Threats and Pressures	
Medium	E01.03	Dispersed habitation
Medium	I01	Non-native species
Medium	B06	Grazing in forests/ woodland

Negative Impacts		
Rank	Threats and Pressures	
Low	B	Sylviculture, forestry
Medium	D01.01	Paths, tracks, cycling tracks
Low	J02.05.02	Modifying structures of inland water courses
Low	E03.03	Disposal of inert materials
Low	G01.01.01	Motorized nautical sports
Medium	A10.01	Removal of hedges and copses or scrub
Low	J02.10	Management of aquatic and bank vegetation for drainage purposes
High	E01.01	Continuous urbanisation

A pathway for impact with regard to the site-specific threat/pressure *Dispersed habitation (E01.03)* was identified.

4.2.4.3 Qualifying Interests

There are no site-specific conservation objectives available for this SAC. According to the NPWS site synopsis, ‘*The site is of considerable importance for the presence of four Red Data Book fish species that are listed on Annex II of the E.U. Habitats Directive - Brook Lamprey (Lampetra planeri), River Lamprey (Lampetra fluviatilis), Sea Lamprey (Petromyzon marinus) and Atlantic Salmon (Salmo salar). The Lough Gill system gets a very early run of spring salmon, while the Bonet holds stocks of salmon from spring right through to the end of the season.*’ According to the standard data form, the lake and its associated rivers support an important population of *Salmo salar*.

4.2.4.3.1 *Petromyzon marinus (Sea Lamprey) [1095]*

According to the Article 17 reporting (NPWS, 2019), the overall conservation status of Sea lamprey (*P. marinus*) has remained unchanged since the previous reporting period and is assessed as bad. The range is assessed as bad as it is more than 10% below the favourable reference range. The population is assessed as bad as it is estimated to be more than 25% below the favourable reference population. The habitat is assessed as inadequate as the area is not considered large enough to ensure the future long-term viability of sea lamprey. This assessment has changed since the previous reporting period and is based on new data and best expert judgement.

4.2.4.3.2 *Lampetra fluviatilis (River Lamprey) [1099]*

According to the Article 17 reporting (NPWS, 2019) with reference to river lamprey, ‘*Given the large area of habitat availability and the likelihood that, in certain flow conditions, river lamprey are able to ascend many of the significant weirs on Irish rivers, it is possible that, in reality, they have a favourable conservation status. The inability to distinguish between L. fluviatilis and L. planeri larvae, however, and the challenges associated with sampling for adult river lamprey, means that an evaluation of their actual range and population size cannot be undertaken and status is assessed as unknown for the current reporting period.*’

4.2.4.3.3 *Salmo salar* (Salmon) [1106]

According to the Article 17 reporting (NPWS, 2019) with reference to Salmon, ‘*There is no evidence of a decline in range since the directive came into force. The current range is considered sufficient for the long-term survival of the species. Therefore range has been assessed as favourable. Increasing trends have been noted in salmon population size in the last 5 years. However the current population estimate is 78% of the favourable reference population. Therefore population has been assessed as inadequate. There is sufficient available habitat and ongoing pressures linked with habitat quality are not considered to be compromising the viability of the species. Therefore habitat for the species has been assessed as favourable. Population estimates are unlikely to reach favourable status in the next 12 years. Therefore future prospects have been assessed as inadequate. The overall conservation status has been assessed as inadequate with a stable trend. Although a short-term negative trend is reported for this species, the trend has reversed in the last 5 years. Therefore an overall stable trend is reported.*

4.2.5 Cummeen Strand SPA

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA maps). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on the SCI ‘Wetlands [A999]’ habitat was identified in the form of deterioration of water quality and supporting habitats for SCI species.

On a precautionary basis the potential for habitat loss and disturbance of the listed SCI species was also identified:

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Redshank (*Tringa totanus*) [A162]

4.2.5.1 Review of Conservation Objectives

The relevant SCIs and the associated conservation objectives are presented in Table 4-5.

Table 4-5 Qualifying Interest and Conservation Objectives

Special Conservation Interest (SCI)	Conservation Objective
Wetlands and waterbirds [A999]	To maintain the favourable conservation condition of wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it.
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	To maintain the favourable conservation condition of Light-bellied Brent Goose in Cummeen Strand SPA.
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	To maintain the favourable conservation condition of Oystercatcher in Cummeen Strand SPA.
Redshank (<i>Tringa totanus</i>) [A162]	To maintain the favourable conservation condition of Redshank in Cummeen Strand SPA.

4.2.5.2 Review of site-specific pressures and threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to effect on the SPA were reviewed and considered in relation to the proposed development. These are provided in Table 4-6.

Table 4-6 Site-specific threats, pressures and activities

Negative Impacts		
Rank	Threats and Pressures	
Medium	D01.02	Roads, motorways
High	J02.01.02	Reclamation of land from sea, estuary or marsh
High	D03.02	Shipping lanes
High	E02	Industrial or commercial areas
Medium	E01	Urbanised areas, human habitation
Low	F02.03	Leisure fishing
High	E02	Industrial or commercial areas
Medium	A08	Fertilisation
Medium	H	Pollution
High	F01.01	Intensive fish farming, intensification

A pathway for impact with regard to the site-specific threat/pressure *Pollution (H)* and *Urbanised areas, human habitation (E01)* was identified.

4.2.5.3 Special Conservation Interests (SCIs)

4.2.5.3.1 Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]

According to the NPWS Conservation Objectives Supporting document (NPWS, 2013) during winter the site regularly supports 1% or more of the biogeographic population of Light-bellied Brent Goose (*Branta bernicla hrota*). The mean peak number of this species within the SPA during the baseline period (1995/96 –1999/00) was 223 individuals. Light-bellied Brent Goose has a favourable population trend for this site. According to the Article 12 reporting both the short-term and long-term population trend for this species is increasing.

4.2.5.3.2 Oystercatcher (*Haematopus ostralegus*) [A130]

According to the NPWS Conservation Objectives Supporting document (NPWS, 2013) during winter the site regularly supports 1% or more of the all-Ireland population of Oystercatcher (*Haematopus ostralegus*). The mean peak number of this species within the SPA during the baseline period (1995/96 –1999/00) was 680 individuals. Oystercatcher has a favourable population trend for this site. According to the Article 12 reporting the short-term population trend for this species is stable and the long-term trend is unknown.

4.2.5.3.3 Redshank (*Tringa totanus*) [A162]

According to the NPWS Conservation Objectives Supporting document (NPWS, 2013), during winter the site regularly supports 1% or more of the all-Ireland population of Redshank (*Tringa totanus*). The mean peak number of this species within the SPA during the baseline period (1995/96 –1999/00) was 408 individuals. Redshank has an unfavourable population trend for this site. According to the Article 12 reporting the short-term population trend (past 12 years) for this species is stable and the long-term trend is increasing (since 1980).

4.2.5.3.4 Wetlands

According to the NPWS Conservation Objectives Supporting document (NPWS, 2013), the wetland habitats contained within Cummeen Strand SPA are identified as of conservation importance for non-breeding (wintering) migratory waterbirds. Therefore, the wetland habitats are considered to be an additional Special Conservation Interest.

According to the site synopsis (NPWS, 2014), ‘*Cummeen Strand is a large shallow bay stretching from Sligo Town westwards to Coney Island. It is one of three estuarine bays within Sligo Bay and is situated between Drumcliff Bay to the north and Ballysadare Bay to the south. The Garavogue River flows into the bay and forms a permanent channel. At low tide, extensive sand and mud flats are exposed. These support a diverse macro-invertebrate fauna which provides the main food supply for the wintering waterfowl. Invertebrate species such as Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*), Cockles (*Cerastoderma edule*), Sand Mason (*Lanice conchilega*), Baltic Tellin (*Macoma balthica*), Spire Shell (*Hydrobia ulvae*) and Mussels (*Mytilus edulis*) are frequent. Of particular note is the presence of eelgrass (*Zosteranoltii* and *Z. angustifolia*) beds, which provide a valuable food stock for herbivorous wildfowl. The estuarine and intertidal flat habitats are of conservation significance and are listed on Annex I of the E.U. Habitats Directive. Areas of salt marsh fringe the bay in places and provide roosting sites for birds during the high tide periods. Sand dunes occur at Killaspug Point and Coney Island, with a shingle spit at Standalone Point near Sligo Town*’.

4.3 Ecological Survey results

4.3.1 Habitats

A dedicated habitat survey of the area within and in the vicinity of the proposed development was undertaken on 14th of December 2020. The habitat classification provided in this report correspond to those described in ‘A Guide to Habitats in Ireland’ (Fossitt, 2000). A habitat map is provided in Figure 4-1.

The site was a field of Improved Agricultural Grassland (GA1) (Plates 4-1 & 4-2). Species recorded in the Improved Agricultural Grassland (GS2) habitat include Yorkshire fog (*Holcus lanatus*), perennial rye grass (*Lolium perenne*), ribwort plantain (*Plantago lanceolata*) and creeping buttercup (*Ranunculus repens*). The western field boundary was marked by fencing and bramble scrub (WS1) and the eastern boundary consisted of a similar boundary, but with a stone wall adjacent to a residential house located to the north east. There are existing residential properties to the north east, west and to the south. The site is separated from the SAC to the south by a distance of over 90 metres but is separated from it by existing residential dwellings and a site, which is currently under construction. No surface watercourses were recorded within the proposed development site.

None of the habitats recorded on the site conform to habitats listed under Annex I of the EU Habitats Directive. No botanical species listed under the Flora (protection) Order (1999, as amended 2015), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the site. All species recorded are common in the Irish landscape. No species listed on the Third

Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 were recorded during the survey.



Plate 4-1 Site of proposed development, facing north east



Plate 4-2 Site of proposed development, facing south towards the estuary

4.3.2 Fauna

No evidence of Annex II protected species associated with Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC was recorded within or adjacent to the site boundary. The detailed Conservation Objectives for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC were reviewed as part of this assessment.

The nearby Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC is designated for the following species

- *Vertigo angustior* (Narrow-mouthed Whorl Snail) [1014]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Phoca vitulina* (Harbour Seal) [1365]

There are no watercourses within the proposed development site and no supporting habitat for these species. There is no suitable habitat for *Vertigo angustior* (Narrow-mouthed Whorl Snail) within the proposed development site. Optimal habitat for this species within the SAC is defined as fixed dune and species-rich grassland dominated with a vegetation height of 10-30cm.

There is no suitable habitat for Harbour seal within the proposed development site. This marine mammal species occurs in estuarine, coastal and offshore waters but also utilises a range of intertidal and terrestrial habitats for important life history functions such as breeding, moulting, resting and social activity. When hauling out ashore harbour seals tend to prefer comparatively sheltered locations and use sheltered bays, inlets and enclosed estuaries.

No species listed as a Special Conservation Interest species of Cummeen Strand SPA were recorded during the site visit. No significant foraging or roosting habitat for the listed SCI bird species was recorded within the proposed development site boundary, therefore additional dedicated bird surveys were not deemed necessary.



No QI's or SCI's associated any other European Site were recorded within or adjacent of the proposed development site boundary.



Map Legend

 Site boundary

Habitat map

 Improved Agricultural Grassland (GA1)



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Drawing Title

Habitat Map

Project Title

Glacken Ballincar NIS

Drawn By	Checked By
JOS	PR
Project No.	Drawing No.
210233	4.1
Scale	Date
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5. ASSESSMENT OF POTENTIAL ADVERSE EFFECTS

5.1 Potential for Direct Effects on the European Sites

The development site lies entirely outside of the boundary of any European Site. There is no potential for direct effects.

5.2 Potential for Indirect Effects on the European Sites

5.2.1 Deterioration of water quality

The proposed development site lies within an area of moderate groundwater vulnerability (as per the EPA maps). Following a precautionary approach, the construction and operational phase of the proposed residential development may result in pollution to groundwaters via the percolation of polluting materials through the bedrock underlying the site. A potential pathway for indirect effects on the on the surface water dependent Qualifying Interests of Cummeen Strand SAC/Drumcliff Bay (Sligo Bay) SAC, Lough Gill SAC and the Special Conservation Interests (SCIs) of Cummeen Strand SPA was identified in the form of deterioration of water quality and supporting habitats for aquatic fauna.

5.2.1.1 Preventative measures to avoid impact on water quality

The pathway that would allow potential impacts to occur was considered in the design of the project. The construction environmental management plan (CEMP) accompanying this application, and section 5.2.1.1.1 of this report, sets out the environmental management framework to be adhered to during the proposed construction works and it incorporates the mitigating principles to ensure no adverse impact on the integrity of European Sites. The CEMP includes comprehensive detail regarding site set up, pollution prevention, hydrocarbon management, construction monitoring and biosecurity. The best practice mitigation and environmental control measures that have been incorporated into the proposal are summarised in section 5.2.1.1.1.

5.2.1.1.1 Construction Phase Control Measures and Assessment

A Construction and Environmental Management Plan (CEMP) has been prepared for the proposed development and accompanies this application. The pathway that would allow potentially adverse impacts to occur was considered in the design of the proposed development.

The excavation phase of the development has the potential to encounter sub-surface and ground water during the works although it is not anticipated that this will be significant as the excavation does not include a basement. In the event of encountering groundwaters during excavation, the excavation will be de-watered using a pump equipped with a silt bag on the outlet to capture any silty material prior to subsequent natural percolation to ground. Alternatively, this water will be tankered off site if required. In order to avoid hydrocarbons encountering groundwaters onsite, Section 3.3 below presents mitigation measures to avoid the release of hydrocarbons onsite.

There are no surface watercourses recorded within the proposed development site. Should the need arise the following Pollution Prevention Measure will be adopted for the protection of watercourses. A silt fence will be erected between the proposed development and a watercourse. This will comprise wooden posts and a geotextile membrane that is buried below the ground (approx. 200mm). The silt

fence will secure the development site and prevent potential run off and siltation during the construction works. The fence will remain in place after the works are completed and until the exposed earth has re-vegetated.

The proposed development will adhere to the best practice mitigation and environmental control measures outlined in the CEMP which include the following measures:

Drainage and Surface Water Mitigation

- The site boundary will be fenced off with a solid barrier prior to works commencing to protect adjacent habitats and to prevent any egress of machinery outside of the site during construction activities.
- A silt fence will be erected along the perimeter of the discharge area of the silt bag to avoid any preferential flow of silt laden water offsite. This will comprise wooden posts and a geotextile membrane that is buried below the ground (approx. 200mm). The silt fence will secure the development site and prevent potential run off and siltation during the construction works. The fence will remain in place after the works are completed and until the exposed earth has re-vegetated.
- Works shall not take place at periods of high rainfall, and shall be scaled back or suspended if heavy rain is forecast;
- Machinery deliveries shall be arranged using existing structures along the existing road;
- Any excess construction material shall be immediately removed from the area and sent to an authorized waste recovery facility;
- Spill kits shall be available in each item of plant required;
- Discharge onto ground will be via a silt bag which will filter any remaining sediment from the pumped water. The entire discharge area from silt bags will be enclosed by a perimeter of silt fencing as an additional measure to avoid any preferential flow of silt-laden water offsite;
- Prior to the commencement of earthwork silt fencing will be placed down-gradient of the construction areas where drains or drainage pathways are present

Fuel and Oil Control & Pollution Prevention

- All plant and machinery will be serviced before being mobilised to site.
- No refuelling of machinery or overnight parking of machinery is permitted in areas adjacent to or on-site drainage infrastructure.
- On-site refuelling will only take place at distances greater than 50 metres from nearest site drainage infrastructure.
- On-site refuelling of machinery will be carried out using an oil company vehicle sourced from a local supplier. Only dedicated trained and competent personnel will carry out refuelling operations. A spill kit and drip tray shall be on site at all times and available for all refuelling operations. Equipment shall not be left unattended during refuelling.
- Spill kits shall be available in each item of plant required.
- Care will be taken at all times to avoid contamination of the environment with contaminants other than hydrocarbons, such as uncured concrete or other chemicals. The plant refuelling procedures described above shall be detailed in the contractor's method statements.
- Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place. No batching of wet-cement products will occur on site.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.
- All site plant will be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All major repair and maintenance operations will take place off site.
- Vehicles will never be left unattended during refuelling. Only dedicated trained and competent personnel will carry out refuelling operations and plant refuelling procedures shall be detailed in the contractor's method statements to prevent discharge to ground and any potential effects on ground water.

- Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.
- Potential impacts caused by spillages etc. during the construction phase will be reduced by keeping spill kits and other appropriate equipment on-site.

Earth Works

- In all circumstances, excavation depths and volumes will be minimised.
- All excavated spoil will be stockpiled and contained within the works area (site boundary), which will be entirely within the curtilage of the bounds of the existing agricultural field within its stone wall boundary's or transported off site to a designated waste facility.
- Earthworks will be carried out during periods of dry weather to avoid impacts to groundwater.
- All excavated material which is not required for future landscaping works or for backfill of excavations will be removed to an authorised waste recovery facility.

Waste Management

- All waste will be collected in skips and the site will be kept tidy and free of debris at all times.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or recycling.
- All construction waste materials will be stored within the confines of the site, prior to removal from the site to a permitted waste facility.
- The removal and disposal of wastewater from site welfare facilities, will be carried out by a fully permitted waste collector holding valid Waste Collection Permits as issued under the Waste Management (Collection Permit) Regulations, 2007

Environmental Monitoring

- The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.

Post implementation of best practice and preventive measures as described above, there is no potential for adverse impact on the listed water dependent QIs/SCIs of Cummeen Strand SAC/Drumcliff Bay (Sligo Bay) SAC, Lough Gill SAC and Cummeen Strand SPA as a result of deterioration in water quality.

The measures described in Section 5.2.1.1.1, ensure that the proposed development does not prevent or obstruct any of the qualifying interests from reaching favourable conservation status as per Article 1 of the EU Habitats Directive. The measures described in Section 5.2.1.1.1, ensure that the proposed development does not adversely affect the integrity of European sites.

5.2.1.2 **Operational Phase Control Measures and Assessment**

Indirect effects during the operational stage of the development are not anticipated and there will be no deterioration in groundwater quality as a result of the proposed development.

The site suitability assessment concluded that the proposed site is suitable for a packaged wastewater treatment system and polishing filter with discharge to ground. The proposed foul sewer drainage system will be installed in accordance with Irish Water's Code of Practice for Wastewater Infrastructure.

A site-specific wastewater treatment facility is proposed to ensure no effect on the groundwater aquifer and the nearby European site. The proposed system will include a packaged wastewater treatment system and polishing filter which discharges to ground with a secondary treatment system proposed in conjunction with a sand polishing filter. All tanks, filters, etc. will be installed in accordance with the manufacturer's guidelines and the EPA Code of Practice. The details and location of the proposed

wastewater treatment system and percolation area are provided in the layout drawings in the Site Characterisation report that has been provided as a separate document as part of this planning application.

All works associated with the proposed on-site wastewater treatment system to be installed by a suitably qualified professional. The installation of the wastewater treatment system will be supervised by a chartered engineer at time of installation and installed by an experienced contractor. The wastewater treatment system will be serviced every twelve months and a maintenance agreement will be put in place with tricel.

A Soak Pit will be installed in line with specifications in the EPA Code of Practice (2009) for the collection and disposal of surface water within the proposed development site.

No indirect effects on water quality during the operational stage of the development are anticipated. There is no potential for adverse impact on the listed water dependent QIs/SCIs of Cummeen Strand SAC/Drumcliff Bay (Sligo Bay) SAC, Lough Gill SAC and Cummeen Strand SPA as a result of deterioration in water quality.

The measures described ensure that the proposed project does not prevent or obstruct any of the QIs or SCIs from reaching Favourable Conservation Status as per Article 1 of the EU Habitats Directive.

5.2.2

Disturbance *Phoca vitulina* (Harbour Seal) [1365] (QI of Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC)

Taking an extremely precautionary approach, the potential for indirect impact to Harbour Seal in the form of disturbance during construction and due to an increase in anthropogenic disturbance in the area was considered.

According to the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC *Conservation Objectives Supporting Document for Marine Habitats and Species* (NPWS, 2013), harbour seal occurs in estuarine, coastal, and offshore waters but also utilises a range of intertidal and terrestrial habitats for important life history functions such as breeding, moulting, resting and social activity. When hauling out ashore harbour seals tend to prefer comparatively sheltered locations where exposure to wind, wave action and precipitation are minimised.

Harbour seals in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC occupy both aquatic habitats and intertidal shorelines that become exposed during the tidal cycle. The species is present within the SAC throughout the year during all aspects of its annual life cycle which includes breeding (May to July approximately), moulting (August to September approximately) and non-breeding foraging and resting phases (October to April). Comparatively limited information is available for this site from the moult period in the annual cycle spanning the months of August and September. In acknowledging the limited understanding of aquatic habitat use by the species within the site it should be noted that all suitable aquatic habitat is considered relevant to the species range and ecological requirements at the site and is therefore of potential use by harbour seals (NPWS, 2013).

According to Map 8 of the site-specific conservation objectives document there are no known resting or breeding sites within the Garavoge Estuary. The closest known resting or breeding sites are located in Drumcliff Bay/Drumcliff Estuary, 4km north-west of the proposed development site (see Map 8, NPWS 2013).

There is no suitable habitat for harbour seal within or immediately adjacent to the proposed development site. The habitats within the footprint of the development are dominated by improved agricultural grassland habitat. The proposed development site is set back 90m from the shoreline of the Garavoge Estuary. The site is separated from any potential seal habitat within the SAC by an existing residential house, including garden, and an additional residential house that is currently under

construction. These developments shield from view any suitable seal habitat along the shoreline from the proposed development and therefore there is no potential for visual disturbance.

The proposed development is small scale in nature and require minimal excavations or earthworks. The following best practice disturbance limitation measures will be adhered to during the construction phase:

- All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996”.
- Plant machinery will be turned off when not in use.
- Operating machinery will be restricted to the proposed development site area.
- Construction works will be limited to daylight hours and artificial lighting to facilitate works will not be permitted.

No potential for significant disturbance related impact during construction exists.

The potential for indirect impacts due to disturbance of harbour seal due to lighting and the potential increase in anthropogenic disturbance in the area during the operational phase was also considered.

The proposed development site is set back 90m from the shoreline of the Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and is buffered from the shoreline by an existing residential house, and an additional residential house that is currently under construction. Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for lighting disturbance or visual disturbance of any suitable seal habitat along the shoreline. The lighting used during the operational phase will be directional, which will ensure that there is no light spill outside of the development footprint.

The potential for disturbance due to an increase in anthropogenic activity in the wider area was also considered. There will be no access to the foreshore as a result of the proposed development. The development does not in any way provide any additional access to Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and does not encourage access. The proposed development site is accessed via a local road off the R291. This road does not offer access to the foreshore and terminates approximately 40m from the shoreline. The garden of the neighbouring residential house lies between the foreshore and the access road. There is no public right of way between this land and the foreshore. There will be no increase in recreational activity/anthropogenic disturbance to the foreshore as a result of the proposed development.

Based on the size, scale, location and nature of the proposed development; no complete source-pathway-receptor chain for significant impact during the construction or operational phase of the development has been identified.

The measures ensure that the proposed development do not prevent or obstruct harbour seal from reaching favourable conservation status as per Article 1 of the EU Habitats Directive.

5.2.3 Bird Disturbance/Displacement and Habitat Loss

Disturbance/Displacement

Due to the proximity of Cummeen Strand SPA to the proposed development, the potential for adverse effects as a result of disturbance and displacement of the SCI species during the construction and operational phases of the development, has been considered.

Cummeen Strand SPA is designated for Light-bellied Brent Goose (*Branta bernicla hrota*), Oystercatcher (*Haematopus ostralegus*) and Redshank (*Tringa totanus*). These species are designated

for their wintering populations within the SPA. None of the listed SCI species of Cummeen Strand SPA were recorded utilising habitats within the development site during any of the field surveys.

The proposed development site is set back 95m from the boundary of Cummeen Strand SPA and is buffered from the shoreline by an existing residential house, and a residential house that is currently under construction. There will be no works or works access undertaken within 95m of the intertidal habitat. All works will be confined to the footprint of the proposed development and there will be no access to the foreshore. Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for visual disturbance of SCI bird species within the intertidal bird habitat. The shoreline of the SPA will not be illuminated as a result of the proposed development. The lighting used during the operational phase will be directional, which will ensure that there is no light spill outside of the development footprint. There will be no upward tilt of any of the lighting. No hedgerows/treeline will be illuminated as part of the development. Any external security lighting will be set on motion-sensors and short (1 minute) timers.

The potential for disturbance due to an increase in anthropogenic activity in the wider area was also considered. The proposed development site is located in an area with existing residential housing in the wider area including along the shoreline, therefore SCI species are likely to be habituated to some degree of general visual and/or noise stimuli in the area.

There will be no access to the foreshore as a result of the proposed development. The development does not in any way provide any additional access to Cummeen Strand SPA and does not encourage access. The proposed development site is accessed via a local road off the R291. This road does not offer access to the foreshore and terminates approximately 40m from the shoreline. The garden of the neighbouring residential house lies between the foreshore and the access road. There is no public right of way between this land and the foreshore. There will be no increase in recreational activity/anthropogenic disturbance to the foreshore as a result of the proposed development.

In consultation with published advice on the typical types and magnitudes of noise sources associated with construction activities (Cutts et al. 2013), it is considered that general construction activities, will not result in disturbance of any of the listed SCI species, given the 95m set-back distance of the proposed development site from the intertidal zone.

Based on the observed responses of waterbirds to various noise stimuli, Cutts et al. (2013), have derived an overview table on the standard distance decay rates for noise, by which it is possible to calculate the likely disturbance effect for a noise level and distance of receptor from source. Construction plant generating 110dB(A) at around source will provide a likely receptor dose of 68dB at circa 85m distance, and would be below the impact threshold i.e. may occasionally induce a low level behavioural response such as a heads-up (Cutts et al., 2013). Given the 95m set-back distance of the proposed development site from the intertidal zone there is no potential for impact in terms of noise disturbance.

The proposed development is small scale in nature and require minimal excavations or earthworks during the construction phase. The following best practice disturbance limitation measures will be adhered to during the construction phase:

- All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996”.
- Plant machinery will be turned off when not in use.
- Operating machinery will be restricted to the proposed development site area.
- Construction works will be limited to daylight hours and artificial lighting to facilitate works will not be permitted.
- All works will be confined to the site footprint and there will be no access to the foreshore.

Based on the size, scale, location and nature of the proposed development; no complete source-pathway-receptor chain for significant impact during the construction or operational phase of the development has been identified.

Due to the nature, scale and location of the proposed small-scale development there will be no disturbance of the listed SCI species of Cummeen Strand SPA.

Habitat loss

Cummeen Strand SPA is designated for Light-bellied Brent Goose (*Branta bernicla hrota*), Oystercatcher (*Haematopus ostralegus*) and Redshank (*Tringa totanus*). According to the site-specific conservation objectives supporting document, the principle supporting habitats for these species within the site is intertidal mud and sandflats (NPWS, 2013). SCI species are highly reliant on the habitats within the site but are likely to utilise alternative habitats at certain times (e.g. high tide).

The dominant habitat within the proposed development site is improved agricultural grassland (GA1). Oystercatchers forage primarily on tidal flats although the species can also be found foraging along non-estuarine coastline or terrestrially. Brent geese may also occasionally forage on terrestrial grassland habitats. Redshank may use terrestrial habitats to roost in. Improved agricultural grassland habitat is common and widespread in the wider area of the site. The loss of a small area of agricultural grassland within the proposed development site would not have an adverse effect on the conservation status of these species.

The proposed development will not have an adverse effect on the conservation status of any the listed SCI species of this SPA.

6. ASSESSMENT OF RESIDUAL EFFECTS

The sections provided below detail the site-specific residual impact assessment in relation to the relevant QIs of the above EU sites in light of their site-specific targets and attributes.

6.1 Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC

6.1.1 Estuaries [1130]

The conservation objective for Estuaries [1130] is:

‘To maintain the favourable conservation condition of Estuaries in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for Estuaries as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.1.

Table 6-1 Targets and attributes of Estuaries [1130]

Attribute	Target	Assessment
Habitat area	The permanent habitat area is stable or increasing, subject to natural processes.	There will be no decline in habitat area associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Community extent	Maintain the extent of the Zostera-dominated community and the Mytilidae-dominated community complex, subject to natural processes.	There will be no impacts on the community extent, community structure or distribution associated with the proposed development.
Community structure: Zostera density	Conserve the high quality of the Zostera-dominated community, subject to natural processes	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Community structure: Mytilus edulis density	Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes	
Community distribution	Conserve the following community types in a natural condition: Intertidal fine sand with <i>Peringia ulvae</i> and <i>Pygospio elegans</i> community complex; Estuarine mixed sediment to sandy mud with <i>Hediste diversicolor</i> and oligochaetes community complex; Fine sand with <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex; Sand to mixed sediment with	

Attribute	Target	Assessment
	amphipods community; Intertidal reef community.	

6.1.2

Mudflats and sandflats not covered by seawater at low tide [1140]

The conservation objective for Mudflats and sandflats not covered by seawater at low tide [1140] is:

‘To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide [1140] in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for Mudflats [1140] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.2.

Table 6-2 Targets and attributes of Mudflats and Sandflats [1140]

Attribute	Target	Assessment
Habitat area	The permanent habitat area is stable or increasing, subject to natural processes.	There will be no decline in habitat area associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Community extent	Maintain the extent of the Zostera-dominated community and the Mytilidae-dominated community complex, subject to natural processes.	There will be no impacts on the community extent, community structure or distribution associated with the proposed development.
Community structure: Zostera density	Conserve the high quality of the Zostera-dominated community, subject to natural processes	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Community structure: Mytilus edulis density	Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes	
Community distribution	Conserve the following community types in a natural condition: Intertidal fine sand with <i>Peringia ulvae</i> and <i>Pygospio elegans</i> community complex; Estuarine mixed sediment to sandy mud with <i>Hediste diversicolor</i> and oligochaetes community complex; Fine sand with <i>Angulus</i> spp. and <i>Nephtys</i> spp. community complex;	

6.1.3 Embryonic shifting dunes [2110]

The conservation objective for embryonic shifting dunes [2110] is:

‘To maintain the favourable conservation condition of Embryonic Shifting Dunes [2110] in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for embryonic shifting dunes [2110] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.3.

Table 6-3 Targets and attributes of Embryonic Shifting Dunes [2110]

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 0.67ha, Rosses Point - 32.27ha, Strandhill - 0.18ha, Yellow Strand - 0.83ha.	There will be no decline in habitat area or habitat distribution associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Habitat distribution	No decline, subject to natural processes.	
Physical structure: functionality and sediment supply	Maintain the natural circulation of sediment and organic matter, without any physical obstructions.	There will be no impacts on the physical structure, vegetation structure or vegetation composition associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation composition: plant health of foredune grasses	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-communities	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	Negative indicator species (including non-native species) to represent less than 5% cover	

6.1.4 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]

The conservation objective for Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] is:

*‘To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’*

The attributes and targets for Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.4

Table 6-4 Targets and attributes of Shifting Dunes [2120]

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 0.46ha, Rosses Point - 0.17ha, Strandhill - 0.10ha, Yellow Strand - 0.47ha.	There will be no decline in habitat area or habitat distribution associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes.	
Physical structure: functionality and sediment supply	Maintain the natural circulation of sediment and organic matter, without any physical obstructions.	There will be no impacts on the physical structure, vegetation structure or vegetation composition associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation composition: plant health of foredune grasses	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-communities	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	Negative indicator species (including non-native species) to represent less than 5% cover	

6.1.5 Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]

The conservation objective for Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] is:

‘To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.5

Table 6-5 Targets and attributes of Fixed Coastal Dunes [2130]

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes including erosion and succession. For sub-sites mapped: Coney Island - 15.06ha; Rosses Point - 21.89ha; Strandhill - 40.14ha; Yellow Strand - 19.16ha.	There will be no decline in habitat area or habitat distribution associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes.	
Physical structure: functionality and sediment supply	Maintain the natural circulation of sediment and organic matter, without any physical obstructions.	There will be no impacts on the physical structure, vegetation structure or vegetation composition associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: bare ground	Bare ground should not exceed 10% of fixed dune habitat, subject to natural processes	
Vegetation structure: sward height	Maintain structural variation within sward	
Vegetation composition: typical species and sub-communities	Maintain range of sub-communities with typical species listed in Ryle et al. (2009)	
Vegetation composition: negative indicator species (including <i>Hippophae rhamnoides</i>)	Negative indicator species (including non-native species) to represent less than 5% cover	
Vegetation composition: scrub/trees	No more than 5% cover or under control	

6.1.6

Petrifying springs with tufa formation (*Cratoneurion*) [7220]

The conservation objective for Petrifying springs with tufa formation (*Cratoneurion*) [7220] is:

*‘To restore the favourable conservation condition of Petrifying springs with tufa formation (*Cratoneurion*) [7220] in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’*

The attributes and targets for Petrifying springs with tufa formation (*Cratoneurion*) [7220] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.6.

Table 6-6 Targets and attributes of Petrifying springs with tufa formation (*Cratoneurion*) [7220]

Attribute	Target	Assessment
Habitat area	Area stable or increasing, subject to natural processes.	There will be no decline in habitat area or habitat distribution associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Habitat distribution	No decline.	
Hydrological regime: height of water table; water flow	Maintain appropriate hydrological regimes.	There will be no impacts on the physical structure, vegetation structure or vegetation composition associated with the proposed development.
Water quality	Maintain oligotrophic and calcareous conditions.	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Vegetation composition: typical species	Maintain typical species.	

6.1.7 *Phoca vitulina* (Harbour Seal) [1365]

The conservation objective for Harbour seal (*Phoca vitulina*) is:

‘To maintain the favourable conservation condition of Harbour Seal in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for Harbour seal (*Phoca vitulina*) [1365] as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this species is provided in Table 6.7.

Table 6-7 Targets and attributes of Harbour Seal [1365]

Attribute	Target	Assessment
Access to suitable habitat	Species range within the site should not be restricted by artificial barriers to site use.	There will be no decline in habitat area or habitat distribution associated with the proposed development.
Breeding behaviour	Conserve the breeding sites in a natural condition.	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

Attribute	Target	Assessment
Moulting behaviour	Conserve the moult haul-out sites in a natural condition.	There will be no impacts on the physical structure, vegetation structure or vegetation composition associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Resting behaviour	Conserve the resting haul-out sites in a natural condition.	
Disturbance	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	

6.1.8 **Lampetra fluviatilis (River Lamprey) [1099]**

The conservation objective for River Lamprey (*Lampetra fluviatilis*) is:

‘To maintain the favourable conservation condition of River Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for River Lamprey (*Petromyzon marinus*) as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this Species is provided in Table 6.8.

Table 6-8 Targets and attributes for River Lamprey (*Lampetra fluviatilis*) [1099]

Attribute	Target	Assessment
Distribution: extent of anadromy	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	There will be no impact on distribution as a result of the proposed development. There will be no migration barriers associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

6.1.9 Sea Lamprey (*Petromyzon marinus*) [1095]

The conservation objective for Sea Lamprey (*Petromyzon marinus*) is:

‘Restore the favourable conservation condition of Sea Lamprey in Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC’

The attributes and targets for Sea Lamprey (*Petromyzon marinus*) as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC and an assessment of the proposed development against the attributes and targets for this Species is provided in Table 6-9.

Table 6-9 Targets and attributes for Sea Lamprey (*Petromyzon marinus*) [1095]

Attribute	Target	Assessment
Distribution: extent of anadromy	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	There will be no impact on distribution as a result of the proposed development. There will be no migration barriers associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

6.2 Lough Gill SAC

6.2.1 Sea Lamprey (*Petromyzon marinus*) [1095]

This species has the generic conservation objective:

‘To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected’

There are no site-specific conservation objectives available for Lough Gill SAC. The attributes and targets for Sea Lamprey (*Petromyzon marinus*) as per the Site-Specific Conservation Objectives (SSCOs) for Lough Corrib SAC (NPWS Version 1 2017) and an assessment of the proposed development against the nominated attributes and targets for this species is provided in Table 6.10.

Table 6-10 Targets and attributes associated with nominated site-specific conservation objectives for Sea Lamprey (*Petromyzon marinus*) [1095]

Attribute	Target	Assessment
Distribution: extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	There will be no impact on distribution as a result of the proposed development. There will be no migration barriers associated with the proposed development.

Attribute	Target	Assessment
		Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Population structure of juveniles	At least three age/size groups present	There will be no impact on the population structure or juvenile density as a result of the proposed development.
Juvenile density in fine sediment	Mean catchment juvenile density at least 1/m ²	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	There will be no impact on the extent, distribution or availability of habitat as a result of the proposed development
Availability of juvenile habitat	More than 50% of sample sites positive, with a minimum of four positive sites in a catchment, which are at least 5km apart	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

6.2.2 River Lamprey (*Lampetra fluviatilis*) [1096]

This species has the generic conservation objective:

‘To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected’

There are no site-specific conservation objectives available for Lough Gill SAC. The attributes and targets for River Lamprey (*Lampetra fluviatilis*) as per the Site-Specific Conservation Objectives (SSCOs) for Lower River Shannon SAC (NPWS Version 1, 2012) and an assessment of the proposed development against the nominated attributes and targets for this species is provided in Table 6.11.

Table 6-11 Targets and attributes associated with nominated site-specific conservation objectives for River Lamprey (*Lampetra fluviatilis*) [1096]

Attribute	Target	Assessment
Distribution	Access to all watercourses down to first order streams	There will be no direct negative impact on distribution as a result of the proposed development. There will be no access barriers associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Population structure of juveniles	At least three age/size groups of brook/river lamprey present	There will be no impact on the population structure or juvenile density as a result of the proposed development.
Juvenile density in fine sediment	Mean catchment juvenile density of brook/river lamprey at least 2/m ²	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	There will be no impact on the extent, distribution, or availability of habitat as a result of the proposed development.
Availability of juvenile habitat	More than 50% of sample sites positive	Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

6.2.3 Salmon (*Salmo salar*) [1106]

This species has the generic conservation objective:

‘To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected’

There are no site-specific conservation objectives available for Lough Gill SAC. The attributes and targets for reefs as per the Site-Specific Conservation Objectives (SSCOs) for Lough Corrib SAC (NPWS Version 1 2017) and an assessment of the proposed development against the nominated attributes and targets for this species is provided in Table 6.12.

Table 6-12 Targets and attributes associated with nominated site-specific conservation objectives for Salmon (*Salmo salar*) [1106]

Attribute	Target	Assessment
Distribution: extent of anadromy	100% of river channels down to second order accessible from estuary	<p>There will be no impact on disturbance as a result of the proposed development. There will be no access barriers associated with the proposed development.</p> <p>Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.</p>
Adult spawning fish	Conservation Limit (CL) for each system consistently exceeded	<p>There will be no reduction in adult spawning fish, salmon fry abundance, out-migrating smolt abundance or the number and distribution of redds as a result of the proposed development.</p> <p>Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.</p>
Salmon fry abundance	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling	
Out-migrating smolt abundance	No significant decline	
Number and distribution of redds	No decline in number and distribution of spawning redds due to anthropogenic causes	
Water quality	At least Q4 at all sites sampled by EPA	<p>There will be no reduction in water quality as a result of the proposed development.</p> <p>Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.</p>

6.3 Cummeen Strand SPA

6.3.1 Wetlands [A999]

The conservation objective for *Wetlands [A999]* within Cummeen Strand SPA is:

‘To maintain the favourable conservation condition of wetland habitat in Cummeen Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it’.

The attributes and targets for Wetlands as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand SPA and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.13.

Table 6-13 Targets and attributes of Wetlands [A999]

Attribute	Target	Assessment
Habitat area	The permanent area occupied by the wetland habitat should be stable and not significantly less than 1732 hectares, other than that occurring from natural patterns of variation	There will be no decline in habitat area associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed development.

6.3.2 Brent Goose (*Branta bernicla hrota*) [A046]

The conservation objective for this species within Cummeen Strand SPA is:

‘To maintain the favourable conservation condition of Light-bellied Brent Goose in Cummeen Strand SPA’.

The attributes and targets for Brent goose as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand SPA and an assessment of the proposed development against the attributes and targets for this species is provided in Table 6.14.

Table 6-14 Targets and attributes for Brent Goose (*Branta bernicla hrota*) [A046]

Attribute	Target	Assessment
Population trend	Long term population trend stable or increasing	The proposed development will not have any effect on the population trend or distribution of this species within the SPA. There will be no effect in terms of loss of supporting habitat or disturbance.
Distribution	No significant decrease in the range, timing and intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	The dominant habitat within the proposed development site is improved agricultural grassland (GA1). According to the site-specific conservation objectives supporting document, the principle supporting habitats for this species within the site is intertidal mud and sandflats (NPWS, 2013). Brent geese may also occasionally forage on terrestrial grassland habitats. Improved agricultural grassland habitat is common and widespread in the wider area of the site. The loss of a small area of agricultural grassland within the proposed development site would not have an adverse effect on the conservation status of these species.

Attribute	Target	Assessment
		<p>As outlined in section 5.2.3 of this report there is no potential for the proposed development to result in disturbance of this SCI species within the SPA. The works are small scale in nature and short term in duration. Mitigation measures, outlined in Section 5.2.3 of this report, will be adhered to avoid disturbance during the construction stage of the proposed development.</p> <p>The proposed development site is set back 95m from the boundary of Cummeen Strand SPA and is buffered from the shoreline by an existing residential house, and a residential house that is currently under construction. There will be no works or works access undertaken within 95m of the intertidal habitat. All works will be confined to the footprint of the proposed development and there will be no access to the foreshore. Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for visual disturbance of SCI bird species within the intertidal bird habitat. The shoreline of the SPA will not be illuminated as a result of the proposed development. The lighting used during the operational phase will be directional and will be controlled by the use of motion sensors which will ensure that there is no light spill outside of the development footprint.</p> <p>The proposed development site is located in an area with existing residential housing in the wider area including along the shoreline, therefore SCI species are likely to be habituated to some degree of general visual and/or noise stimuli in the area.</p> <p>There will be no increase in recreational activity/anthropogenic disturbance to the foreshore as a result of the proposed development. There will be no access to the foreshore as a result of the proposed development. The proposed development site is accessed via a local road off the R291. This road does not offer access to the foreshore and terminates approximately 40m from the shoreline. The garden of the neighbouring residential house lies between the foreshore and the access road. There is no public right of way between this land and the foreshore.</p> <p>As described in section 5.2.3 in consultation with published advice on the typical types and magnitudes of noise sources associated with construction activities (Cutts et al. 2013), construction activities will not result in disturbance of this species, given the 95m set-back distance of the proposed development site from the intertidal zone and there is no potential for impact in terms of noise disturbance.</p>

6.3.3 Oystercatcher (*Haematopus ostralegus*) [A130]

The conservation objective for this species within Cummeen Strand SPA is:

‘To maintain the favourable conservation condition of Oystercatcher in Cummeen Strand SPA.’

The attributes and targets for Oystercatcher as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand SPA and an assessment of the proposed development against the attributes and targets for this species is provided in Table 6.14.

Table 6-15 Targets and attributes for Oystercatcher (*Haematopus ostralegus*) A130

Attribute	Target	Assessment
Population trend	Long term population trend stable or increasing	The proposed development will not have any effect on the population trend or distribution of this species within the SPA. There will be no effect in terms of loss of supporting habitat or disturbance.
Distribution	No significant decrease in the range, timing and intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation	<p>The dominant habitat within the proposed development site is improved agricultural grassland (GA1). According to the site-specific conservation objectives supporting document, the principle supporting habitats for this species within the site is intertidal mud and sandflats (NPWS, 2013).</p> <p>The dominant habitat within the proposed development site is improved agricultural grassland (GA1). Oystercatchers forage primarily on tidal flats although the species can also be found foraging along non-estuarine coastline or terrestrially. Improved agricultural grassland habitat is common and widespread in the wider area of the site. The loss of a small area of agricultural grassland within the proposed development site would not have an adverse effect on the conservation status of these species.</p> <p>As outlined in section 5.2.3 of this report there is no potential for the proposed development to result in disturbance of this SCI species within the SPA. The works are small scale in nature and short term in duration. Mitigation measures, outlined in Section 5.2.3 of this report, will be adhered to avoid disturbance during the construction stage of the proposed development.</p> <p>The proposed development site is set back 95m from the boundary of Cummeen Strand SPA and is buffered from the shoreline by an existing residential house, and a residential house that is currently under construction. There will be no works or works access undertaken within 95m of the intertidal habitat. All works will be confined to the footprint of the proposed development and there will be no access to the foreshore. Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for visual disturbance of SCI bird species within the intertidal bird habitat. The shoreline of the SPA will not be illuminated as a result of the proposed development. The lighting used during the operational phase will be directional and will be controlled by the use of motion sensors which will ensure that there is no light spill outside of the development footprint.</p> <p>The proposed development site is located in an area with existing residential housing in the wider area including along the shoreline, therefore SCI species are likely to be habituated to some degree of general visual and/or noise stimuli in the area.</p>

Attribute	Target	Assessment
		<p>There will be no increase in recreational activity/anthropogenic disturbance to the foreshore as a result of the proposed development. There will be no access to the foreshore as a result of the proposed development. The proposed development site is accessed via a local road off the R291. This road does not offer access to the foreshore and terminates approximately 40m from the shoreline. The garden of the neighbouring residential house lies between the foreshore and the access road. There is no public right of way between this land and the foreshore.</p> <p>As described in section 5.2.3 in consultation with published advice on the typical types and magnitudes of noise sources associated with construction activities (Cutts et al. 2013), construction activities will not result in disturbance of this species, given the 95m set-back distance of the proposed development site from the intertidal zone and there is no potential for impact in terms of noise disturbance.</p>

6.3.4 Redshank (*Tringa totanus*) [A162]

The conservation objective for this species within Cummeen Strand SPA is:

‘To maintain the favourable conservation condition of Redshank in Cummeen Strand SPA’.

The attributes and targets for Wetlands as per the Site-Specific Conservation Objectives (SSCOs) for Cummeen Strand SPA and an assessment of the proposed development against the attributes and targets for this habitat is provided in Table 6.14.

Table 6-16 Targets and attributes for Redshank (*Tringa totanus*) [A162]

Attribute	Target	Assessment
Population trend	Long term population trend stable or increasing.	The proposed development will not have any effect on the population trend or distribution of this species within the SPA. There will be no effect in terms of loss of supporting habitat or disturbance.

Attribute	Target	Assessment
<p>Distribution</p>	<p>No significant decrease in the range, timing and intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation.</p>	<p>The dominant habitat within the proposed development site is improved agricultural grassland (GA1). According to the site-specific conservation objectives supporting document, the principle supporting habitats for this species within the site is intertidal mud and sandflats (NPWS, 2013).</p> <p>The dominant habitat within the proposed development site is improved agricultural grassland (GA1). Redshank may use terrestrial habitats to roost in. Improved agricultural grassland habitat is common and widespread in the wider area of the site. The loss of a small area of agricultural grassland within the proposed development site would not have an adverse effect on the conservation status of these species.</p> <p>As outlined in section 5.2.3 of this report there is no potential for the proposed development to result in disturbance of this SCI species within the SPA. The works are small scale in nature and short term in duration. Mitigation measures, outlined in Section 5.2.3 of this report, will be adhered to avoid disturbance during the construction stage of the proposed development.</p> <p>The proposed development site is set back 95m from the boundary of Cummeen Strand SPA and is buffered from the shoreline by an existing residential house, and a residential house that is currently under construction. There will be no works or works access undertaken within 90m of the intertidal habitat. All works will be confined to the footprint of the proposed development and there will be no access to the foreshore. Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for visual disturbance of SCI bird species within the intertidal bird habitat. The shoreline of the SPA will not be illuminated as a result of the proposed development. The lighting used during the operational phase will be directional and will be controlled by the use of motion sensors which will ensure that there is no light spill outside of the development footprint.</p> <p>The proposed development site is located in an area with existing residential housing in the wider area including along the shoreline, therefore SCI species are likely to be habituated to some degree of general visual and/or noise stimuli in the area.</p> <p>There will be no increase in recreational activity/anthropogenic disturbance to the foreshore as a result of the proposed development. There will be no access to the foreshore as a result of the proposed development. The proposed development site is accessed via a local road off the R291. This road does not offer access to the foreshore and terminates approximately 40m from the shoreline. The garden of the neighbouring residential house lies between the foreshore and the access road. There is no public right of way between this land and the foreshore.</p>

Attribute	Target	Assessment
		<p>As described in section 5.2.3 in consultation with published advice on the typical types and magnitudes of noise sources associated with construction activities (Cutts et al. 2013), construction activities will not result in disturbance of this species, given the 95m set-back distance of the proposed development site from the intertidal zone and there is no potential for impact in terms of noise disturbance.</p>

Conclusion of Residual Impact Assessment

Based on the above, in view of best scientific knowledge, on the basis of objective information, the proposed development will not adversely affect any QI/SCI as a result of deterioration in surface water, habitat loss or disturbance during either construction or operation of the proposed development. There is no potential for adverse effect on the identified QIs/SCIs and their associated targets and attributes, or on any European Site. All identified pathways for effect have been robustly blocked through measures to avoid impacts and the incorporation of best practice/mitigation measures into the project design.

Taking cognisance of measures to avoid impacts and best practice/mitigation measures incorporated into the project design which are considered in the preceding section, the Proposed project will not have an adverse effect on the integrity of any European site.

The proposed project will not prevent the QIs/SCIs of European Sites from achieving/maintaining favourable conservation status in the future as defined in Article 1 of the EU Habitats Directive. A definition of Favourable Conservation Status is provided below:

‘conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;

The conservation status will be taken as ‘favourable’ when:

‘Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and

‘The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and,

‘There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.’

Based on the above, it can be concluded in view of best scientific knowledge, on the basis of objective information that the proposed development will not adversely affect the Qualifying Interests/Special Conservation Interests associated with the following EU sites:

- Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC
- Lough Gill SAC
- Cummeen Strand SPA

7. CUMULATIVE EFFECTS

A search and review in relation to plans and projects that may have the potential to result in cumulative and/or in-combination impacts on European Sites was conducted. This assessment focuses on the potential for cumulative in-combination effects on the European Sites where potential for adverse effects was identified at the screening stage (Appendix 1). This included a review of online Planning Registers, development plans and other available information and served to identify past and future plans and projects, their activities and their predicted environmental effects.

7.1.1 Plans

The following development plans been reviewed and taken into consideration as part of this assessment:

- › Sligo County Development Plan 2017-2023

The review focused on policies and objectives that relate to Natura 2000 sites and natural heritage. Policies and objectives relating to sustainable land use were also reviewed.

Table 6.1: Review of plans

Sligo County Development Plan 2017 - 2023	
Key Policies/Issues/Objectives Directly Related to European Sites In The Zone of Influence	Assessment of Potential Impact on European Sites
P-NH-1 Protect, sustainably manage and enhance the natural heritage, biodiversity, geological heritage, landscape and environment of County Sligo in recognition of its importance for nature conservation and biodiversity, and as a non-renewable resource, in association with all stakeholders.	<p>The Development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network and other natural heritage interests. No potential for cumulative impacts when considered in conjunction with the current proposal were identified.</p> <p>There will be no impact on designated sites as a result of deterioration in water quality. As outlined in section 5, and the CEMP accompanying this application, best practice/mitigation measures will be implemented to avoid effects on water quality. There will be no adverse effects on sensitive aquatic receptors listed as QIs/SCIs of European Sites, as a result of deterioration in water quality.</p> <p>There will be no adverse effects on ecological receptors listed as QIs/SCIs of European Sites, as a result of habitat loss, displacement or disturbance.</p>
P-NH-3 Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under the EU Habitats Directive, EU Birds Directive, the Wildlife Act and the Flora Protection Order.	
P-NH-4 Take full account of the precautionary principle where uncertainty exists regarding the potential impact of a proposed development on the natural heritage resource	
P-DSNC-1 Protect and maintain the favourable conservation status and conservation value of all natural heritage sites designated or proposed for designation in accordance with European and national legislation and agreements. These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), Ramsar Sites, Statutory Nature Reserves. In addition, the Council will identify, maintain and develop non-designated areas of high nature conservation value which serve as linkages or ‘stepping stones’ between protected sites in accordance with Article 10 of the Habitats Directive.	
P-DSNC-2 Promote the maintenance and, as appropriate, achievement of ‘favourable conservation status’ of habitats and species in association with the NPWS.	

Sligo County Development Plan 2017 - 2023	
Key Policies/Issues/Objectives Directly Related to European Sites In The Zone of Influence	Assessment of Potential Impact on European Sites
P-DSNC-3 Carry out an appropriate level of assessment for all development plans, land-use plans and projects that the Council authorizes or proposes to undertake or adopt, to determine the potential for these plans or projects to impact on designated sites, proposed designated sites or associated ecological corridors and linkages in accordance with the Habitats Directive, All appropriate assessments shall be in compliance with the provisions of Part XAB of the Planning and Development Act 2000.	<p>The Development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network and other natural heritage interests. No potential for cumulative impacts when considered in conjunction with the current proposal were identified.</p> <p>There will be no impact on designated sites as a result of deterioration in water quality. As outlined in section 5, and the CEMP accompanying this application, best practice/mitigation measures will be implemented to avoid effects on water quality. There will be no adverse effects on sensitive aquatic receptors listed as QIs/SCIs of European Sites, as a result of deterioration in water quality. There will be no adverse effects on ecological receptors listed as QIs/SCIs of European Sites, as a result of habitat loss, displacement or disturbance.</p>
O-DSNC-1 Identify and protect local areas of high nature conservation value and support the management of landscape features which are of major importance for wild fauna and flora in accordance with Article 10 of the Habitats Directive.	
P-PPAS-1 Ensure that development does not have a significant adverse impact, incapable of satisfactory mitigation on plant, animal or bird species protected by law.	
P-PPAS-2 Consult with the National Parks and Wildlife Service (DAHG) and take account of any licensing requirements when undertaking, approving and authorising development which is likely to affect plant, animal or bird species protected by law.	
P-NCODS-2 Ensure that development proposals, where relevant, improve the ecological coherence of the Natura 2000 network and encourage the retention and management of landscape features that are of major importance for wild fauna and flora as per Article 10 of the Habitats Directive.	
P- INW-3 Ensure that all proposed greenfield residential and commercial developments use sustainable drainage systems (SUDS) in accordance with best current practice, ensuring protection of the integrity of wetland sites in the adjoining area, including their hydrological regime.	
P- INW-4 Ensure that floodplains and wetlands within the Plan area are retained for their biodiversity and flood protection value.	

Sligo County Development Plan 2017 - 2023	
Key Policies/Issues/Objectives Directly Related to European Sites In The Zone of Influence	Assessment of Potential Impact on European Sites
<p>P- INW-5 Ensure that proposed developments do not adversely affect groundwater resources and groundwater-dependent habitats and species.</p>	<p>The Development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network and other natural heritage interests. No potential for cumulative impacts when considered in conjunction with the current proposal were identified.</p> <p>There will be no impact on designated sites as a result of deterioration in water quality. As outlined in section 5, and the CEMP accompanying this application, best practice/mitigation measures will be implemented to avoid effects on water quality. There will be no adverse effects on sensitive aquatic receptors listed as QIs/SCIs of European Sites, as a result of deterioration in water quality. There will be no adverse effects on ecological receptors listed as QIs/SCIs of European Sites, as a result of habitat loss, displacement or disturbance.</p>
<p>O- INW-2 Require that runoff from a developed area does not result in deterioration of downstream watercourses or habitats, and that pollution generated by a development is treated within the development area prior to discharge to local watercourses.</p>	

7.1.2 Other Projects

The online planning system for Sligo County Council was consulted on the 06/04/2021. Additional projects identified in the last 5 years for Ballincar comprised permissions for the following:

- Permission for the demolition of existing bay window and erection of a new enlarged bay window in the same location on the south facing facade, including associated site works (Planning reference: 14270)
- Permission for development consisting of construction of a single storey dwelling with integrated domestic garage, including installation of an effluent treatment unit and soil polishing filter together with all associated site works (Planning reference: 19127)
- Permission for development consisting of the replacement of the existing septic tank and percolation area which is currently a combined system serving the adjacent dwelling to the west with new proprietary effluent treatment unit and tertiary treatment system serving this dwelling only, together with all associated site works (Planning reference: 1722)
- Permission for development consisting of extensions and alterations to existing dwelling including the following: (a) single storey extension incorporating additional bedroom, interior alterations and granny flat accommodation to the east gable end of the existing dwelling (b) replacement of the existing septic tank and percolation area which is currently a combined system serving the adjacent dwelling to the east with a new septic tank and percolation area serving the dwelling only, together with all associated site works (Planning reference: 1721)
- Permission for development consisting of the construction of a single domestic dwelling, detached garage, on-site wastewater treatment system and percolation area and all associated site works (Planning reference: 17425)
- Permission for proposed works to existing dwelling consisting of (1) demolition of existing single storey flat roofed rear extension, (2) the erection of two new extensions, one to the west (side) & the other to the rear (north) elevations, (3) the reroofing of existing flat roofed extension to the east (side) elevation with a pitched roof to match all new additions and reduce the area of fenestration on the south elevation, (4) demolition of existing rear chimney on roof of main dwelling and its replacement with a Velux roof window, (5) erection of a new chimney stack to the east elevation of main dwelling, (6) raising the cill level of ground floor window on front elevation to the west of entrance porch, (7) relocation of existing first floor window on west elevation to rear (north) elevation, (8) increasing the height of front boundary wall to 1.5 meters and permission for retention of (9) existing front porch to main dwelling and retention of existing car port to existing rear garage, together with all associated site development works (Planning reference: 14113).
- Permission for development consisting of the following: relocation and upgrading of the existing onsite wastewater treatment system serving the dwelling house and demolition of glass house extension with all associated site works, together with alterations to existing site boundaries (Planning reference: 16487).
- Permission for development consisting of the following: construction of a new two-storey three bedroom dwelling house and onsite wastewater treatment system together with all associated site works including amendments to and retention of existing gateway (Planning reference: 16488).
- Retention permission for development consisting of the retention of a single storey entrance porch constructed to the front of detached single storey dwelling house (Planning reference: 20134).
- Permission for development consisting of the decommissioning of existing septic tank and percolation area and proposed Tricel Novo waste water treatment unit, pump sump, two Puraflo modules on a gravel distribution layer and associated site works (Planning reference: 2177).
- Development consisting of the following (1) upgrade of the existing Wastewater Pumping Station (PSE3) at Rosses Upper including: remedial works to existing underground pumping chamber, new underground stormwater storage tank with associated kiosks, pipelines, ducting and vent stack, new emergency overflow to connect to existing outfall pipeline, new

prefabricated welfare cabin, new gabion retaining wall structure and a 2.4m high weld mesh fence internal to the site, replace existing masonry front boundary with a new 2.4m high stone-faced boundary wall incorporating a railing and new vehicle access gates, together with all associated site development works (2) decommission existing wastewater treatment plant and construction of new Pumping Station (PS2) at Ballyweelin including: demolish existing single storey building, decommission existing septic tank, replace existing boundary fence with new 2.4m weld mesh fence. Construction of underground pumping chamber with associated valve chambers, manholes, kiosks, pipelines, ducting and vent stack, new emergency overflow to connect to existing outfall pipeline, together with all associated site development works. Upgrade works to existing access road together with replacement of existing access road fence with 1.2m high concrete post and chainlink fence, and all associated site development works. (3) construction of a new 90mm diameter rising main from Pumping Station PS2 at Ballyweelin to connect to the existing gravity sewer on Regional Road R291, overall length 250m approximately. (4) construction of new 225mm diameter sewer on Colmcille Drive in Rosses Upper to replace existing 150mm diameter sewer, overall length 150m approximately. (5) construction of new 375mm diameter foul sewer, overall length 115m approximately and new 450mm diameter foul sewer, overall length 590m approximately between Colmcille Drive and existing Pumping Station (PSE3) on the Main Street in Rosses Point. Decommissioning of approximately 460m of existing Cast Iron watermain and transfer of associated service connections to the existing uPVC watermain. (Planning Reference: 20408).

- Permission for development consisting of the construction of a new single storey dwelling and domestic garage, on-site wastewater treatment system and polishing filter, and all other associated site works and services (Planning reference: 20430).

The cumulative assessment has taken account of all the above projects but there are a number of other residential developments likely to be proposed on the adjacent sites. As the details of those potential applications are not currently known, they cannot be fully assessed. Any subsequent application should take account of this proposed development in its own cumulative assessment.

The currently proposed project does not have the potential to result in adverse effects on any European Site when considered on its own and taking into account the measures that are in place to avoid effects on these sites. It therefore, cannot contribute to any cumulative effect, when considered alongside any other permitted, planned or notional developments in the area.

Groundwater

The proposed development is located in an area of moderate groundwater vulnerability as per the Environmental Protection Agency mapping (<https://gis.epa.ie/EPAMaps/>) and the Geological Survey Ireland Spatial Resources mapping.

As fully described in section 3.2.1 of this report the proposed development wastewater treatment system will be designed and operated in accordance with the Environmental Protection Agency Code of Practice on Wastewater Treatment and Disposal Systems serving Single Houses (p.e.≤10).

The site suitability assessment noted that the proposed site is located in a Regionally Important Aquifer, with a Moderate Vulnerability Rating. Ground conditions indicate that a wastewater treatment system and polishing filter would be suitable to treat and dispose of the domestic wastewater generated by this development, however, the use of a proprietary wastewater treatment system, packaged tertiary treatment system and distribution area of 25m² is recommended. All tanks, filters, etc. will be installed in accordance with EPA Code of Practice.

The site assessment notes that Ground conditions are favourable on this site and there will be further treatment for the wastewater in the soil. The average "T" value is 17.03 which indicates that the retention time in the soil will provide satisfactory treatment. Section 6.3, Interpretation of

Percolation Test Results, of the EPA's publication "*Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. < 10)*" 2009 this states that when the "T" value is between 3 and 50 the site is suitable for the development of a septic tank system or a secondary treatment system discharging to groundwater.

The standard of domestic wastewater treatment proposed exceeds the recommendations contained in the EPA's publication "*Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. < 10)*" 2009 and there will be no risk to the environment from the proposed development. This system has I.S. EN-3 and SR.66 certification and a Treatment System Performance Standard of (mg/L) 1OBOD, 1OSS and 10NH₃ which indicates that the system is capable of providing a very high quality of wastewater.

The proposed development will not contribute to any effect on the hydrological regime in the area or to any water pollution effects. Following the detailed assessment provided in the preceding sections, it is concluded that, the proposed development will not result in any residual adverse effects on any of the European Sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the proposed development to contribute to any cumulative adverse effects on any European Site when considered in combination with other plans and projects.

Lighting

Due to the separation distance of the site from the shoreline and the shielding effect of the neighbouring properties there is no potential for visual disturbance of SCI bird species within the intertidal bird habitat, nor is there any potential for visual/lighting disturbance to Harbour Seal. The shoreline of the SAC/SPA will not be illuminated as a result of the proposed development. The lighting used during the operational phase will be directional, which will ensure that there is no light spill outside of the development footprint. There will be no upward tilt of any of the lighting. No hedgerows/treeline will be illuminated as part of the development. Any external security lighting will be set on motion-sensors and short (1 minute) timers, which will reduce the illumination time.

The proposed development will not contribute to any lighting disturbance effects on the nearby European Sites. It is concluded that, the proposed development will not result in any residual adverse effects on any of the European Sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the proposed development to contribute to any cumulative adverse effects on any European Site when considered in combination with other plans and projects.

7.1.3 Conclusion of Cumulative Assessment

Following the detailed assessment provided in the preceding sections, it is concluded that, the proposed development will not result in any residual adverse effects on any of the European Sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the proposed development to contribute to any cumulative adverse effects on any European Site when considered in-combination with other plans and projects.

In the review of the projects that was undertaken, no connection, that could potentially result in additional or cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the proposed development.

Taking into consideration the reported residual impacts from other plans and projects in the area and the predicted impacts with the current proposal, no residual cumulative impacts have been identified with regard to any European Site.

8. CONCLUDING STATEMENT

This NIS has provided an assessment of all potential direct or indirect adverse effects on European Sites

Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction, operation and decommissioning of the proposed development does not adversely affect the integrity of European sites.

Therefore, it can be objectively concluded that the proposed development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.

BIBLIOGRAPHY

Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. and Fuller, R.J. (2013). Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford, UK.

Birds Directive (2009/47/EC) – http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

Bowers Marriott, B. (1997) Practical Guide to Environmental Impact Assessment: A Practical Guide. Published by McGraw-Hill Professional, 1997, 320 pp.

Chandler, J.R. (1970) A Biological Approach to water Quality Management. Water Poll. Cont. 69:415-421.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive 79/409/EEC as amended) (Birds Directive) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011).

CIEEM (2016) Institute of Ecology and Environmental Management Draft Guidelines for Ecological Impact Assessment.

Crowe, O. (2005) Ireland's Wetlands and their Waterbirds: Status and Distribution. BirdWatch Ireland, Rockingham, Co. Wicklow.

DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. DEHLG, Dublin.

DoEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February, 2010. Department of the Environment, Heritage and Local Government.

EC (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.

EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2006) Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg.

EC (2007a) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2007b) Interpretation Manual of European Union Habitats. Version EUR 27. European Commission, DG Environment.

EPA (2002) Guidelines on the information to be contained in Environmental Impact Statements. Environmental Protection Agency.

EPA (2003) Advice Notes on current practice in the preparation of Environmental Impact Statements. Environmental Protection Agency.

EPA website: <http://www.epa.ie>.

European Communities (Conservation of Wild Birds) Regulations, 1985, SI 291/1985 & amendments – <http://www.irishstatutebook.ie>.

European Communities (Environmental Impact Assessment) Regulations, 1989 to 2001.

European Communities (Natural Habitats) Regulations, SI 94/1997, SI 233/1998 & SI 378/2005 – <http://www.irishstatutebook.ie>.

Fossitt, J. A. (2000). A Guide to Habitats in Ireland. Dublin: The Heritage Council.

Habitats Directive (92/43/EEC).

MKO (2021), Construction and Environmental Management Plan.

NPWS (2013) Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC Conservation Objectives Supporting Document for Marine Habitats and Species. Version 1, July 2013. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) Conservation Objectives: Cummeen Strand SPA 004035. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) Conservation Objectives: Cummeen Strand SPA 004035. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) Cummeen Strand SPA 004035, Conservation Objectives Supporting Document, Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2020) Conservation objectives for Lough Gill SAC [001976]. Generic Version 7.0. Department of Culture, Heritage and the Gaeltacht.

NPWS, 2013. The status of EU protected habitats and species in Ireland. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.

NPWS (2008) The Status of EU Protected Habitats and Species in Ireland. Conservation Status in Ireland of Habitats and Species listed in the European Council Directive on the Conservation of Habitats, Flora and Fauna 92/43/EEC.

NPWS of the DEHLG (2008) The Report on Status of Habitats and Species in Ireland: Technical Reports and Forms.

NPWS Protected Areas Site Synopses and maps available on <http://www.npws.ie/en/ProtectedSites/>.

Article 12 reporting (NPWS, 2021) Annex 2: Bird species' status and trends reporting format for the period 2008-2012 available online:

http://cdr.eionet.europa.eu/Converters/run_conversion?file=/ie/eu/art12/envuvesya/IE_birds_reports-14328-144944.xml&conv=343&source=remote#A082_B

NRA (2004) Environmental Impact Assessment of National Road Schemes – A Practical Guide, National Roads Authority, Dublin.

NRA (2004) Guidelines for the Treatment of Noise and Vibration in National Road Schemes (1 ed.). Dublin: National Roads Authority.

NRA (2005) Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes. Dublin: National Roads Authority.

NRA (2006) A Guide to Landscape Treatments for National Road Schemes in Ireland. Dublin: National Roads Authority.

NRA (2006) Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post-Construction of National Road Schemes. Dublin: National Roads Authority.

NRA (2009). Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. Dublin: National Roads Authority.

Therivel R. (2009) Workshop Material on the Habitats Directive Assessment of Plans Levett-Therivel Sustainability Consultants on behalf of the Heritage Council, Kilkenny.

Water status data available on <http://www.epa.ie> and <http://www.wfdireland.ie>

Wildlife Act 1976 and Wildlife (Amendment) Act 2000.