Tionscadal Éireann
Project Ireland
2040

N19 SHANNON AIRPORT ACCESS ROAD IMPROVEMENT SCHEME

APPROPRIATE ASSESSMENT SCREENING REPORT

Comhairle Contae an Chláir
Clare County Council

June 2025
Rev 01

An Roinn Iompair
Department of Transport

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

FEHILY TIMONEY

CLANDILLON
CIVIL CONSULTING

Mid West
National Road Design Office

REVISION CONTROL SHEET

Client:	Clare County Council
Project Name:	N19 Shannon Airport Access Road Improvement Scheme
Report Title:	Appropriate Assessment Screening Report
Report No:	N19SAAR-FTC-EBD-00-RP-EN-0001
TII Project Ref:	CL/17/16362
Project Phase:	Phase 3
Issued for:	Screening Determination
Revision:	01

Rev. No.	Description of Changes	Prepared by:	Checked by:	Approved by:	Date:
00	For Issue	ÉSS/NSC	RM	TR	25/09/2024
01	For Issue (Update for realignment)	ÉSS/NSC/RMD/KB	RM	TR	03/06/2025

Report Distribution:

Sheila Downes - Environmental Assessment Officer Clare County Council

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

1. INTRODUCTION

Fehily Timoney and Company (FT)[1] was commissioned by Clare County Council to prepare an Appropriate Assessment Screening Report (AASR) for the N19 Shannon Airport Access Road Improvement Scheme (N19 SAAR).

This report presents an examination of whether the proposed scheme is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report has been prepared to inform the competent authority in completing their statutory obligations in relation to Appropriate Assessment, as required by Article 6(3) under Council Directive 92/43/EEC (Habitats Directive).

1.1 Legislative Context

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) (European Commission, 1992) provides legal protection for habitats and species of European importance. The Directive requires that where a plan or project is likely to have a significant effect on a European Site, while not directly connected with or necessary to the nature conservation management of the site, it will be subject to 'Appropriate Assessment' to identify any implications for the European site in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

"6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

The competent authority must carry out a screening for appropriate assessment to assess, in view of best scientific knowledge, if the proposed project, individually or in combination with another plan or project is likely to have a significant effect on a European site. If it cannot be excluded, on the basis of objective information, that the proposed project, individually or in combination with other plans or projects, will have a significant effect on a European site, an appropriate assessment of its implications for the European Site(s) in view of the Site's conservation objectives is required to be carried out.

The provisions of Article 6(3) do not apply where the proposed plan or project is 'connected with or necessary to the management of the site'. In this case, the proposed project is not directly connected with or necessary to the management of any European site(s).

1 Details on the contributors to this report are provided in Appendix 1 - Statement of Authority.

1.2 Methodology

1.2.1 Guidance

The assessment was conducted in accordance with the following guidance:

- Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission Notice (2021) Brussels, 28.9.2021 C(2021) 6913 final (European Commission, 2021)
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin (2009, updated 2010) (Department of the Environment, Heritage and Local Government, 2010)
- Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. (European Commission, 2019)
- Interpretation Manual of European Union Habitats. Version EUR 28. (European Commission, 2013)
- OPR Practice Note PN01 Appropriate Assessment Screening for Development Management, (Office of the Planning Regulator, 2021)

1.2.2 Process

The process of determining the likelihood of significant effects from a proposed project on European sites is an iterative process centred around a Source-Pathway-Receptor model. In order for an effect to be established, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism is sufficient to conclude that a potential effect cannot occur.

- Source(s) – e.g., pollutant run-off, noise, removal of vegetation, etc.;
- Pathway(s) – functional link, or ecological pathway e.g., groundwater connecting to nearby qualifying wetland habitats; and,
- Receptor(s) – the qualifying habitats and species of European sites and ecological resources supporting those habitats/species.

In the context of this report, a source is any identifiable element of the proposed project that is known to interact with the receiving environment. A receptor is the Qualifying Interests (QI)[2] for an SAC or Special Conservation Interests (SCI)[3] for an SPA or an ecological feature that is known to be utilised by the QI/SCI. In practice, the term Qualifying Interests also applies to SCIs (and is used in this document for simplicity). A pathway is any connection or link between the source and the receptor.

2 SACs are areas designated under the Habitats Directive to conserve habitats listed in Annex I of the Directive and plant and animal species listed in Annex II. Collectively these are referred to as the 'Qualifying Interests' or 'QIs' of the SAC.
3 SPAs are sites classified under the Birds Directive to protect rare or vulnerable bird species listed in Annex I to the Directive as well as regularly occurring migratory species and wetlands. Wetland habitats that support internationally important populations of migratory birds may be coastal or inland. Collectively, these species and habitats are referred to as the 'Special Conservation Interests' of the SPA.

The assessment commences with a description of the project, along with a description of the receiving environment and the associated sources for impacts to the receiving environment. All elements of the project are presented including the project location and existing baseline environment. The type of impacts that are likely due to the project (Source) are identified having regard to the spatial and temporal scale of the project, resource requirements and likely emissions. These sources are then used to define the zone of influence (ZoI) of the project.

The guidance (European Commission, 2021)', states that in identifying European sites (Natural 2000 sites), which may be affected by the project, the following should be identified:

- Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- Any European sites within the likely zone of influence of the plan or project. European sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g., water) and various types of waste, discharge or emissions of substances or energy;
- European sites whose connectivity or ecological continuity can be affected by the plan or project.

The zone of influence of a proposed project is therefore the geographical area over which it could affect the receiving environment in a way that could have potential effects on the Qualifying Interests of a European site. The practice note (Office of the Planning Regulator, 2021)states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor (S-P-R) framework and not by arbitrary distances (such as 15 km). This report sets out the detailed rationale for the identification of relevant European sites within the ZoI based on the sources of impacts arising from the proposed project. Subsequently, an assessment is undertaken with respect to potential connectivity (Pathways) to European Sites and their qualifying interests/special conservation interests are identified. Further detail on defining the zone of influence can be found in Appendix 2 – Considerations in Defining the Zone of Influence.

The potential for in-combination effects with other plans and projects is examined in Section 2, having regard to the identified impacts of the project along the ecological pathways identified to European sites.

The likelihood of significant effects of the European Sites within the ZoI is examined having regard to the sensitivity of the site with pathways for impacts associated with the project on its own and in combination with other plans and projects.

Having regard to the European Commission Communication on the Precautionary Principle (European Commission, 2000) the:

“absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved.”

Where significant effects are determined to be likely, or where there is uncertainty regarding the likelihood of significant effects, the project will be required under law to be subjected to Appropriate Assessment (AA).

This AA screening is based on best scientific knowledge and has utilised ecological expertise. In addition, a detailed online review of published scientific literature was conducted. This included a detailed review of the National Parks and Wildlife Services (NPWS) Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives.

2. PROJECT DESCRIPTION

The proposed scheme is located on the existing N19 Shannon Airport Access Road (N19 SAAR), between Drumgeely Roundabout and Knockbeagh Point Roundabout, on approach to Shannon Airport, Co. Clare. The proposed scheme is approximately 2.3 km in length and comprises primarily of single carriageway cross section. The existing N19 SAAR does not have formal dedicated facilities for cyclists, and facilities for pedestrians require significant improvement to meet current design standards. Gaps in street lighting are evident on approach to the airport, presenting significant safety and security concerns for vulnerable road users. There are bus stops but no dedicated bus lanes. The road is used predominantly by private vehicles.

The N19 National Primary Road, part of which is the N19 SAAR, extends from M18 Junction 9 to Knockbeagh Point Roundabout, approximately 5 km. The route provides access to Shannon Airport, the Shannon Free Zone (SFZ) industrial area, and a northern access to Shannon Town. The N19 SAAR is an emergency route for incidents diverted to Shannon Airport from Western Atlantic airspace.

Generally, the landform along and immediately adjacent to the existing N19 SAAR is flat and gently falling towards the River Shannon Estuary which is designated as River Shannon and River Fergus SPA (004077), Lower River Shannon cSAC (site code: 002165) and Fergus Estuary and Inner Shannon, North Shore pNHA. There is a pronounced hill to the south east of Drumgeely Roundabout known as Drumgeely Hill. The western perimeter consists predominately of built environment including Shannon Airport and the SFZ. The landscape is generally managed grassland and some ornamental planting at SFZ and at Drumgeely Hill residential area.

The area is reclaimed swamp/estuarine land circa (c.) 1940-50s and is enclosed by an embankment with drainage collected in two channels, the Airport Drainage Channel and the Urlan Beg stream with culverts under the existing road. Initially the Airport Drainage Channel and the Urlan Beg stream flow in a broadly north west to south east direction as they cross under the N19 SAAR as they travel towards the River Shannon Estuary. The northern channel (Urlan Beg stream) continues in the same direction and discharges directly to the River Shannon Estuary through a sluice gate non-return valve, whilst the southern channel turns approximately 90 degrees and travels parallel to the existing road and discharges through a pump station maintained by Shannon Airport into the Estuary. The two drainage channels are referred to locally as the ‘canals’. There is a third waterbody, the Clonloghan Stream, it is culverted under sections of the SFZ, under the N19 SAAR and discharges to the River Shannon Estuary just north of the Urlan Beg outfall.

On the eastern side of the N19 SAAR there is a significant residential area consisting of terraced and semi-detached houses and several apartment blocks. Included in this area are neighbourhood services, schools and recreation areas. Access to these residential areas can be made from the N19 SAAR at Drumgeely Roundabout onto Drumgeely Road and a separate junction at Drumgeely Hill and via Fergus Road. Shannon Town can be accessed further north along Drumgeely Road.

Shannon Town is located north east of the existing N19 SAAR. It is the second largest town in County Clare.

To the south and east of the existing N19 SAAR and outside the proposed scheme boundary, there is an existing flood protection embankment which is currently the subject of a Flood Protection Improvement Scheme which will likely consist of raising the existing embankments and hence increasing its footprint as well as provision of coastal protection works in the form of rock amour (subject to development consent).

3. SCREENING FOR APPROPRIATE ASSESSMENT

3.1 Introduction

Consideration is given to whether the proposed scheme is likely to have a significant effect upon any European sites, either alone or in combination with other plans or projects. The approach to identifying European sites which have potential for significant effects due to the scheme follows the approach set out in the AA screening practice note (Office of the Planning Regulator, 2021).

3.2 Identification of relevant European sites using Source-Pathway-Receptor model

The practice note (Office of the Planning Regulator, 2021) states that the Zone of Influence (ZoI) must be established on a case-by-case basis using the Source-Pathway-Receptor model. In this regard, consideration is given to the nature and extent of the proposed scheme and the characteristics of the immediate environment along with the consideration of potential pathways for connectivity to European sites, which are assessed having regard to available Geographic Information System (GIS) mapping and described in Table 3-1.

Table 3.1: Source-Pathway-Receptor Assessment

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
River Shannon and River Fergus Estuaries SPA (004077)	Lapwing (*Vanellus vanellus*) [A142], Cormorant (*Phalacrocorax carbo*) [A017], Light-bellied Brent Goose (*Branta bernicla hrota*) [A046], Whooper Swan (*Cygnus cygnus*) [A038], Black-tailed Godwit (*Limosa limosa*) [A156], Curlew (Numenius *arquata*) [A160], Knot (*Calidris canutus*) [A143], Golden Plover (*Pluvialis apricaria*) [A140], Black-headed Gull (*Chroicocephalus ridibundus*) [A179], Redshank (*Tringa totanus*) [A162], Wigeon (*Anas penelope*) [A050], Ringed Plover (*Charadrius hiaticula*) [A137], Bar-tailed Godwit (*Limosa lapponica*) [A157], Pintail (*Anas acuta*) [A054], Grey Plover (*Pluvialis squatarola*) [A141],	0.04	The SPA at its nearest point to the scheme is located 40m away, at the construction compound location. However, generally, the scheme boundary is greater than 50m from the SPA. Having regard to iWeBS data, all SCI species are documented to utilise the coastal habitats adjacent to the proposed scheme, most notably the mudflats and tidal areas. The construction phase will involve the use of heavy machinery and vehicles, that will generate noise. Therefore, it is considered, in the absence of a construction stage noise assessment, that there is potential for noise effects on these SCI birds.	Y

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
	Teal (*Anas crecca*) [A052], Scaup (*Aythya marila*) [A062], Dunlin (*Calidris alpina*) [A149], Shoveler (*Anas clypeata*) [A056], Shelduck (*Tadorna tadorna*) [A048], Greenshank (*Tringa nebularia*) [A164], Wetland and Waterbirds [A999]		Instream works and works adjacent to the Urlan-beg Stream crossing, the Airport Drainage Channel and Clonloghan Stream have potential to result in contaminated runoff into these drains/watercourses. These ultimately flow to the SPA, and as such there is a potential for degradation of wetland habitat in the SPA. Lighting effects are uncertain during the construction phase however it is noted that there is natural screening provided by the treelines and OPW flood embankment along the coast. New lighting will be implemented as part of the operational phase of the proposedscheme, in the absence of detailed design, it is uncertain as to whether lighting could splay onto habitats used by bird species. Therefore, a pathway for effect is assumed.	
Lower River Shannon SAC (002165)	Mediterranean salt meadows (*Juncetalia maritimi*) [1410], Coastal lagoons [1150], Sandbanks which are slightly covered by sea water all the time [1110], River lamprey (*Lampetra fluviatilis*) [1099], Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330], Atlantic salmon (*Salmo salar*) [1106], Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260], Large shallow inlets	0.05	Instream works and works adjacent to the Urlan-beg Stream crossing, the Airport Drainage Channel and Clonloghan Stream have potential to result in contaminated runoff into these drains/watercourses. These ultimately flow to the SAC, and as such there is a potential for degradation of wetland habitat in the SAC.	Y

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
	and bays [1160], Reefs [1170], Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], Brook lamprey (*Lampetra planeri*) [1096], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410], Freshwater pearl mussel (*Margaritifera margaritifera*) [1029], Otter (*Lutra lutra*) [1355], Estuaries [1130], Bottlenose dolphin (*Tursiops truncatus*) [1349], Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], Sea lamprey (*Petromyzon marinus*) [1095], Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonising mud and sand [1310], Perennial vegetation of stony banks [1220]		The Urlan-beg Stream crossing, the Airport Drainage Channel and Clonloghan Stream are sub-optimal to support salmonids and lamprey species. However, field surveys indicate there is suitable habitat upstream of the proposed scheme in the Urlan Beg stream (noting that the channel is not part of the SAC). Proposed culvert replacement has potential to impede fishery passage in the Urlan-beg Stream. The implications for salmonid and lamprey populations in the SAC are uncertain and should be considered further. FPO species opposite-leaved pondweed occurs in the Clonloghan Stream and is an indicator species for Annex I habitat 'Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]'. However, the Clonloghan Stream is not within the SAC boundary and is not functionally connected to the areas of opposite-leaved pondweed within the SAC, i.e., Shannon (New) Bridge and the Limerick (Park) Canal in Limerick City. There is no pathway for effects. Otter are likely to use the coastal habitats for foraging and may utilise the local streams to maintain their coat.	

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
			There is a possibility for construction stage activities to disturb commuting / foraging otter from the locality of the works. As such, there is a pathway for effects. There is no pathway for effects on any of the other qualifying interests of the SAC not mentioned above due to the absence of these species or habitats from the locality / ZoI of the proposed scheme.	
Lough Gash Turlough SAC (000051)	Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation [3270], Turloughs [3180]	5.43	The waterbodies that flow through the proposed scheme - the Urlan beg stream, Clonloghan stream, and Shannon Airport Drainage Channel (SADC) - flow in a southerly direction towards the Upper Shannon estuary. There is no hydrological connectivity between the scheme and the Lough Gash Turlough SAC. Therefore, there is no pathway for effects via surface water on the QIs rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation [3270] or Turloughs [3180]. Additionally, the scheme is situated within the Tulla-Newmarket on Fergus groundwater body (GWB), whilst this SAC is located within the GWDTE-Lough Gash Turlough GWB. As they are situated within different GWBs, there is no pathway for effects on the QI turloughs via groundwater. No pathways for effects exist.	N

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
Askeaton Fen Complex SAC (002279)	Alkaline fens [7230], Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]	6.32	The waterbodies within the ZoI of the proposed scheme do not connect to this SAC, and as such no pathway via surface water for effects exist. Additionally, this SAC and the proposed scheme are located within two different groundwater bodies. Therefore, there is no pathway via groundwater for effects. As the proposed scheme is situated 6.32km from this SAC. No pathways for effects exist.	N
Curraghchase Woods SAC (000174)	*Taxus baccata* woods of the British Isles [91J0], Alluvial forests with *Alnus glutinosa* and Fraxinus excelsior (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0], Desmoulin`s whorl snail (*Vertigo moulinsiana*) [1016], Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	8.20	The scheme is located at a distance of 8.20km from this European site. Due to the small scale of the proposed scheme and distance between from this SAC, there is no pathway for effects on the QI *Taxus baccata* woods of the British Isles [91J0]. Additionally, the streams within the ZoI of the scheme do not flow into this SAC. There is no hydrological connectivity to this European site. Therefore, the QI Alluvial forests will not be effected by the proposed scheme as no pathway exists. Due to the separation distance of 8.20km from the SAC, there is no potential for QI Desmoulin`s whorl snail to be within the ZoI of the proposed scheme. As such, there is no pathway for effects. The migratory range between summer and winter roosting sites for the QI Lesser horseshoe bat is 10km (Collins, J., 2003).	N

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
			As the scheme is located 8.20km from this European site, the scheme is situated within the migratory range. However, the habitats within and surrounding the proposed scheme are unsuitable and will not support this species. Therefore, there is no pathway for effects on lesser horseshoe bat. No pathways for effects exist.	
Ratty River Cave SAC (002316)	Caves not open to the public [8310], Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	10.04	The scheme is located at a distance of 10.04km from this European site. Due to the small scale of the scheme and distance between from this SAC, there is no pathway for effects on the QI Caves not open to the public. Additionally, the migratory range between summer and winter roosting sites for the QI Lesser horseshoe bat is 10km (Collins, J., 2003). As the scheme is located 10.04km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. No pathways for effects exist.	N
Barrigone SAC 000432)	Caves not open to the public [8310], Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	12.21	The scheme is located at a distance of 12.21km from this European site. Due to the small scale of the scheme and distance between from this SAC, there is no pathway for effects on the QI. Caves not open to the public.	N

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
			Additionally, the migratory range between summer and winter roosting sites for the QI Lesser horseshoe bat [1303] is 10km (Collins, J., 2003). As the scheme is located 12.21km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. No pathways for effects exist.	
Poulnagordon Cave (Quin) SAC (000064)	Marsh Fritillary (*Euphydryas aurinia*) [1065], *Juniperus communis* formations on heaths or calcareous grasslands [5130], Limestone pavements [8240], Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) * important orchid sites [6210]	12.34	The proposed scheme does not contain habitats suitable for QI Marsh Fritillary. Additionally, according to the Northern Ireland Environment Agency[4], this species has the ability to colonise sites within a range of 10km. As the proposed scheme and surrounding environment is unsuitable for marsh fritillary, and as it is located outside of their natural range, there is no pathway for effects. The watercourses within the proposed scheme do not connect to this SAC. Additionally, the proposed scheme is situated within a different groundwater body to this SAC. As such, there is no pathway for effects via surface water or groundwater to the remaining QIs. No pathways for effects exist.	N

[4] Northern Ireland Environment Agency. (2017). Marsh Fritillary Butterfly Surveys NIEA Specific Requirements. Available at: https://niopa.qub.ac.uk/bitstream/NIOPA/7191/1/marsh-fritillary-butterfly-survey-specifications.pdf. [Accessed: 24/09/2024]

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
Newhall and Edenvale Complex SAC (002091)	Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303], Caves not open to the public [8310]	12.89	The migratory range between summer and winter roosting sites for QI Lesser horseshoe bat is 10km (Collins, J., 2003). As the scheme is located 12.89km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. Additionally, the scheme is located at a distance of 12.89km from this European site. Due to the small scale of the scheme and distance between from this SAC, there is no pathway for effects on the QI Caves not open to the public. No pathways for effects exist.	N
Knockanira House SAC (002318)	Caves not open to the public [8310], Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	13.67	The scheme is located at a distance of 13.67km from this European site. Due to the small scale of the scheme and distance between from this SAC, there is no pathway for effects on the QI Caves not open to the public. Additionally, the migratory range between summer and winter roosting sites for the QI Lesser horseshoe bat is 10km (Collins, J., 2003). As the scheme is located 13.67km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. No pathways for effects exist.	N

European Site (code)	List of Qualifying Interest/Special Conservation Interest	Distance from scheme (km)	Source - Pathway - Receptor Assessment	Considered further in screening Y/N
Kilkishen House SAC (002319)	Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	13.92	The migratory range between summer and winter roosting sites for QI Lesser horseshoe bat is 10km (Collins, J., 2003). As the scheme is located 13.92km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. No pathways for effects exist.	N
Old Domestic Building (Keevagh) SAC (002010)	Lesser horseshoe bat (*Rhinolophus hipposideros*) [1303]	14.14	The migratory range between summer and winter roosting sites for QI Lesser horseshoe bat is 10km (Collins, J., 2003). As the scheme is located 14.14km from this European site, the scheme is situated outside of the migratory range. Therefore, there is no pathway for effects on lesser horseshoe bats. No pathways for effects exist.	N

3.3 Assessment of Likely Significant Effects

The guidance (European Commission, 2021) notes that the significance of the effects will vary depending on factors such as the magnitude of impact, the type, extent, duration, intensity, timing, probability, in-combination effects and the vulnerability of the habitats and species concerned. European site(s) identified are now examined for the potential for likely significant effects.

Table 3.2: Assessment of Likely Significant Effects

(a) Identify all potential direct and indirect impacts that may have an effect on the conservation objectives of a European site, taking into account the size and scale of the project under the following headings:	
Impacts:	**Possible Significance of Impacts: (duration/magnitude etc.)**
Construction phase	Regarding the River Shannon and River Fergus Estuaries SPA: Significant effects on Special Conservation Interest (SCI) wetlands and waterbirds due to disturbance by noise are uncertain, and may have a negative effect on the Conservation Objective" to maintain the favourable conservation condition of the SCI species of the SPA." The temporary noise disturbance of SCI species from roosting and feeding areas close to the proposed scheme during the construction works would temporarily reduce range of habitat available to these species within the SAC. While the disturbance effect would be temporary, the potential knock-on effect on bird morbidity can have a longer-term effect on population dynamics and as such could be considered a significant effect. The significance of lighting effects during the construction phase is uncertain, as lighting may splay onto adjacent habitats used by SCI species and alter usage patterns by birds. Localised degradation in mudflat and saltmarsh habitats as might be caused by accidental pollution during instream works and works adjacent to watercourses can have an indirect effect on available feeding resource for SPA birds. Regarding the Lower River Shannon SAC: Localised degradation in mudflat and saltmarsh habitats might be caused by accidental pollution during instream works and works adjacent to watercourses. Habitat degradation can effect community distribution within mudflat habitat and can affect vegetation structure in saltmarsh habitat, which would be a likely significant effect on the conservation objectives to restore these habitats due to effects on their natural range and zonation / structure. The Conservation Objectives of these habitats which are to: • To maintain the favourable conservation condition of Mudflats and sandflats. • To restore the favourable conservation condition of Atlantic salt meadows. • To maintain the favourable conservation condition of Salicornia.

	Impediment of fishery movement within the Urlan-beg Stream during in-stream works will be temporary in nature. The magnitude of the effect will correlate with the timing of the works, with the most potential for effect coinciding with migratory season and therefore resulting in restriction on access to upstream suitable habitat. The Conservation Objectives are to: • To maintain the favourable conservation condition of River Lamprey. • To restore the favourable conservation condition of Sea Lamprey. • To restore the favourable conservation condition of Salmon. Potential for temporary disturbance of commuting / foraging otters is not likely to have a significant effect. given available alternative habitat. The conservation objectives for this species: to restore the favourable conservation condition of Otter.
Operational phase	<u>Regarding the River Shannon and River Fergus Estuaries SPA:</u> The significance of any lighting effects during the operational phase of the proposed scheme is uncertain, as lighting may splay onto habitats used by SCI species. Such an effect could disturb SCI species from roosting and feeding areas adjacent to the proposed scheme. There are no other potential effects during the operational phase of the proposed scheme. <u>Regarding the Lower River Shannon SAC:</u> There are no likely significant effects on the Qualifying Interests (QIs) of this SAC during the operational phase of the scheme.
In-combination/Other	Land use in the immediate surrounding area to the north and west is predominantly industrial and commercial, with the presence of the Shannon Airport and Shannon Free Zone (SFZ). Shannon Airport has potential for impacts to birds due to noise and bird strikes. Additionally, Smithstown Industrial Estate and Shannon Town are located in the vicinity of the proposed scheme. The Shannon Embankments North arterial drainage, while it does not include the Urlan-beg Stream crossing, the Airport Drainage Channel or the Clonloghan Stream, it does encompass most of the other watercourses draining to the inner Shannon Estuary. The drainage scheme is subject to a rolling maintenance programme. There is potential for in-combination effects to quality in the estuary water from combined pressures from the drainage scheme and N19 scheme.

	Areas in the greater surrounds are agricultural and urban in nature, and include the Shannon Wastewater Treatment Plant c. 3.9km to the east of the proposed scheme. Agriculture, urban, industrial, commercial and transport practices have negative impacts to the environment, in terms of emissions to surface waters, as well as impacts due to noise and disturbance. There is potential for in-combination effects to water due to pollution of the river due to agriculture and existing pressures with run-off. Therefore, existing usage of the land has potential to cause combination effects with the proposed scheme. The Shannon Town and Environs Flood Relief Scheme (SFRS) is currently in "Stage 2: Option Assessment, Scheme Development and Design," and has not yet submitted for adoption. The SFRS proposes to enhance the flood defence system within Shannon town, which may involve the enhancement of the existing embankment adjacent to the existing N19 SAAR, at the Shannon Estuary. It is uncertain if there will be in-combination effects in the absence of further information on the Shannon Flood Relief Scheme (SFRS).
(b) Describe any likely changes to the European sites:	
	<u>Regarding the River Shannon and River Fergus Estuaries SPA:</u> During construction, there is potential for the disturbance of wetlands and waterbirds. This would likely result in a reduction in the availability of suitable roosting and feeding habitat for these species. <u>Regarding the Lower River Shannon SAC:</u> During construction, there is potential for contaminated runoff from the scheme which could negatively impact water quality and the mobile aquatic QIs of this SAC.
(c) Are 'mitigation' measures necessary to reach a conclusion that likely significant effects can be ruled out at screening?	
☒ **Yes** ☐ **No**	Pathways for likely significant effects on the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC have been identified or are uncertain. Therefore, it can be concluded in view of best scientific knowledge on the basis of objective information and in light of the Conservation Objectives of the relevant European sites, that the proposed scheme, individually and in combination with other plans and projects, will have likely significant effects on the European sites, or that likely significant effects are uncertain.

3.4 Screening Conclusion

In the absence of mitigation measures (which have not been considered at this screening stage), likely significant effects on the Qualifying Interests (QI) of the River Shannon and River Fergus Estuaries SPA and the Lower River Shannon SAC cannot be excluded on the basis of objective scientific information.

4. BIBLIOGRAPHY

An overview of fish bioacoustics and the impacts of anthropogenic sounds on fishes. **Popper, A and Hawkins, D. 2019.** s.l. : Journal of Fish Biology, 2019, Vol. 94.

ASA S3 s-1C1. 4 TR-2014 sound exposure guidelines for fishes and sea turtles: a technical report prepared by ANSI-accredited standards committee S3 s-1C1 and registered with ANSI. **Popper, A, et al. 2014.** New York : Springer, 2014.

Department of the Environment, Heritage and Local Government. 2010. *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.* 2010.

Disturbance distances review: An updated literature review of disturbance distances of selected bird species. **Goodship, N M and Furness , R W. 2022.** s.l. : NatureScot, 2022, Vol. Research Report 1283.

European Commission. 2021. *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* 2021.

—. 2000. *Communication from the Commission on the Precautionary Principle .* 2000.

—. 2009. *Council Directive 2009/147/EC on the Conservation of Wild Birds.* 2009.

—. 1992. *Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.* 1992.

—. 2013. *Interpretation Manual of European Union Habitats.* 2013.

—. 2019. *Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC.* 2019.

Foraging behaviour and feeding ecology of the otter Lutra lutra: A selective review. **Carss, David N. 1995.** s.l. : Hystrix, 1995, Vol. 7.

Holman, Claire. 2014. *IAQM Guidance on the assessment of dust from demolition and construction.* London : Institute of Air Quality Management, 2014.

How to calculate range and population size for the otter? The Irish approach as a case study. **Marnell, F; Ó'Néill, L; Lynn, D. 2011.** s.l. : IUCN Otter Spec Group Bull, 2011, Vol. 28.

Institute of Air Quality Management. 2024. *Guidance on the assessment of dust from demolition and construction v2.2.* 2024.

National Roads Authority. 2008. *Guidelines for the treatment of otters prior to the construction of national road schemes.* Dublin : National Roads Authority, 2008.

Office of the Planning Regulator. 2021. *OPR Practice Note PN01 Appropriate Assessment Screening for Development Management.* 2021.

SEPA. 2017. *Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems, Land Use Planning System Guidance Note 31.* 2017.

The spatial organization of otters (Lutra lutra) in Shetland. **Kruuk, H; Moorhouse, A;. 1991.** London : Journal of Zoology, 1991, Vol. 224.

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 1

Statement of Authority

Surveyor	Surveys Completed	Biography
Éimear Stephenson	Report Author	Éimear is a Project Ecologist with 3 years' experience in the environment sector. She has experience producing a multitude of reports, including Appropriate Assessment and Environmental Impact Assessment reports. She has also undertaken a number of field surveys, including habitat, mammal, bat, and otter surveys. She has also held licenses under the Wildlife Act to survey for freshwater pearl mussel and white clawed crayfish. Éimear graduated with a 1:1, and was first in her class during her BSc in Marine Science degree. She also received a scholarship to attend the University of Dublin, Trinity College Dublin where she received a 1:1 in her MSc in Biodiversity and Conservation.
Rita Mansfield	Report Reviewer	Rita is a Principal Ecologist and Project Manager with 20 years' previous experience as a technical lead within the environmental and planning services sector. She specialises in statutory consent and environmental assessment for large scale public infrastructure projects in the energy, water (including flood relief schemes) and transport sectors. She is a qualified ecologist with experience in environmental impact assessment, planning applications (conventional and strategic infrastructure development), climate adaptation, Appropriate Assessment, foreshore licensing, Water Framework Directive, integrated catchment management, and stakeholder engagement. Rita has held numerous licences under the Wildlife Act and Habitats Directive for disturbance to species which included mitigation (e.g. construction of artificial otter holt, bat exclusion). Rita has provided advice on ecological / environmental design to various private and public sector clients, which included the development of contract requirements for Transport Infrastructure Ireland (TII) for contracts tendered using both the PPP and D&B.

FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

APPENDIX 2

Considerations in Defining the Potential Zone of Influence of the Proposed Scheme

1. Release of pollutants and sedimentation to watercourses with hydrological connectivity to European sites;

As a precautionary approach in defining the ecological receptors that may be affected, all European sites hydrologically connected (i.e. whereby there is potential for surface water from the project site to runoff directly into a watercourse or drain which flows into a European Site) to the proposed scheme were examined using Geographic Information System (GIS) mapping. The aquatic QI's/SCI's of these European sites were assessed to identify potential physical or ecological response due to runoff from the proposed scheme.

2. Potential effects to groundwater / hydrogeology

In accordance with the Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems, Land Use Planning System (SEPA, 2017) a 250m potential zone of influence from the proposed development was imposed in assessing the potential for interaction with Groundwater Dependent Terrestrial Ecosystems (GWDTE).

3. Potential effect to mobile QI species (terrestrial)

The potential effects to aquatic QI species (e.g. Lamprey sp. Atlantic Salmon, etc) is considered relative to hydrological connectivity.

Otter

Otter home ranges can vary greatly and can cover stretches of rivers of over 20km but often territories are much smaller depending on habitat condition and food density (How to calculate range and population size for the otter? The Irish approach as a case study, 2011)In coastal areas otters will generally stay within 80m of the shore (The spatial organization of otters (Lutra lutra) in Shetland, 1991). Each adult otter has its own territory which it marks with spraint at prominent locations. When several otters are present within one territory it is usually occupied by a female and her young (National Roads Authority, 2008).Otter are largely nocturnal and crepuscular mammals and are most active in catching prey during dawn and dusk(Foraging behaviour and feeding ecology of the otter Lutra lutra: A selective review, 1995).

As a precautionary approach in defining the ecological features that may be affected, all SAC's designated for otter within 20 km was first examined using Geographic Information System (GIS) mapping and the conservation interests of these European sites were examined in order to ascertain whether there could be potential physical or ecological connectivity to the project and the associated impacts from the proposed scheme.

4. European sites geographically overlapping or adjacent to any of the actions or aspects of the proposed project (noise, lighting and dust)

There are no European sites geographically overlapping or adjacent to the proposed development. The closest European sites is River Shannon and River Fergus Estuaries SPA located 0.04km away (direct distance). However, there could be effects beyond the boundary of the site due to sources such as noise, light, dust, etc.

The Institute of Air Quality Management 'Guidance on the Assessment of dust from demolition and construction (Institute of Air Quality Management, 2024) states that for high sensitive ecological receptors, sensitivity to dust is 'High' up to 20m from the source and reduces to 'Medium' over 50m from the source. For medium sensitive ecological receptors, sensitivity to dust is medium up to 20 m from the source and sensitivity to dust is low up to 50 m from the source. The IAQM guidance also stipulates that trackout[5] causing a large potential dust emission may occur from sites with more than 50 HDV outward movements in any one day. The proposed traffic movements during construction are expected to be 28 outward HDVs a day.

Disturbance due to noise impact varies between species and is dependent on the nature of the noise source and sensitivity of the species in question e.g., the potential effects of anthropogenic sound on fish can range from direct mortality to no obvious behavioural responses and are dependent on the class of sound i.e., either continuous or impulsive (An overview of fish bioacoustics and the impacts of anthropogenic sounds on fishes, 2019). Where the proposed project includes in-stream or bank-side works a 500m disturbance zone of influence for the aquatic environment is adopted (this does not consider the potential zone for other pollution effects e.g. sedimentation).

Similarly, the disturbance response of birds (e.g., becoming alert or a flight response) can vary depending on season, species sensitivity, and weather. (Disturbance distances review: An updated literature review of disturbance distances of selected bird species, 2022) provides estimates of species-specific buffer zones to protect birds from human disturbance during breeding and non-breeding seasons. Therefore, a disturbance Zone of Influence of 1 km is adopted on the basis of the disturbance distances review.

Other emission sources are likely to be more localised than the distances stated for noise impacts and are assessed on a case-by-case basis.

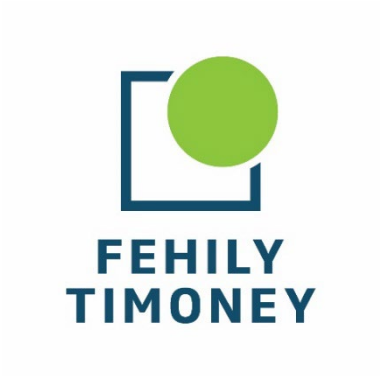
Considering the actions or aspects of the proposed project, a precautionary ZoI of 2 km has been adopted.

5. Disturbance and potential spread of invasive species during the proposed works.

Invasive species can spread to other habitats by the transportation of plant fragments or soil containing seeds / plant material. This typically can occur during excavation and vegetation clearance. Machinery, vehicles and personnel coming into contact with infected areas can spread these species outside of the site. The ZOI of this potential impact requires the consideration of European sites in close proximity to the footprint of works. As a precautionary approach a ZoI of 2 km has been adopted.

Hydrologically connected European sites will also need to be considered e.g. soil containing invasive species material washing downstream to a European site.

[5] The movement of dust and dirt from a construction/demolition site onto the public road network.


FEHILY
TIMONEY


CLANDILLON
CIVIL CONSULTING