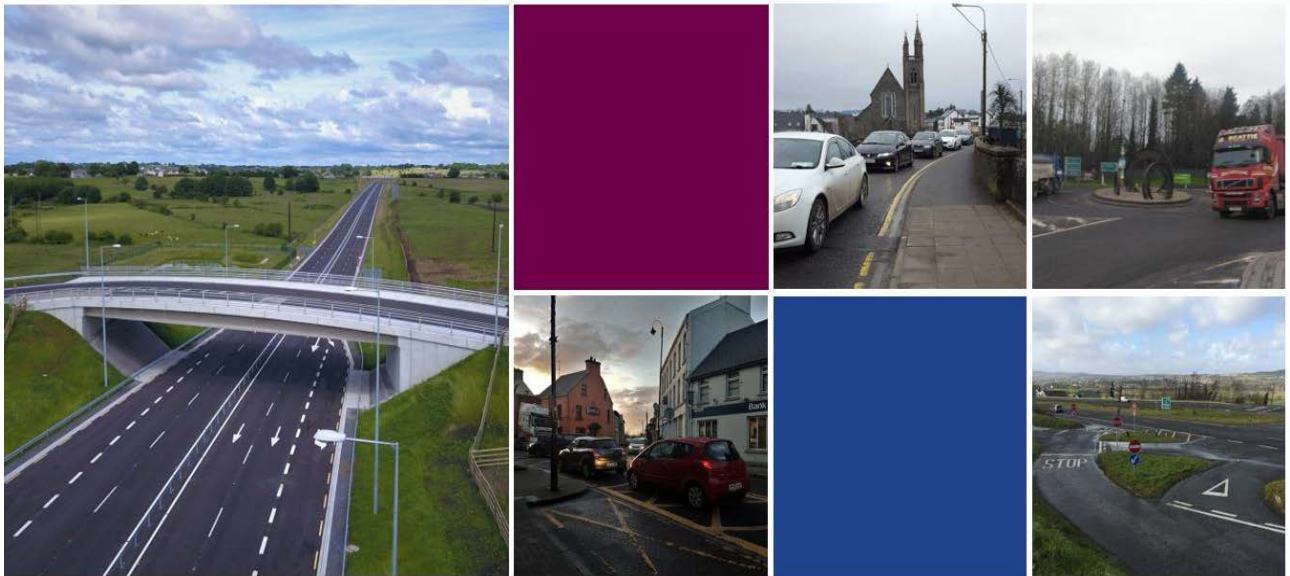


# NATURA IMPACT STATEMENT

## TEN-T Priority Route Improvement Project, Donegal



TT\_MGT0337-RPS-P3-ZZ-RP-E-EN2113

NIS

March 2026



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## List of Abbreviations

The following list of common abbreviations applies to text within the Natura Impact Statement.

List of Abbreviations	
A5-WTC	A5 Western Transport Corridor
AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ABP	An Bord Pleanála
ACP	An Coimisiún Pleanála
AEP	Annual Exceedance Probability
ASM	Atlantic Salt Meadows
BBS	Breeding Bird Survey
BoCCI	Birds of Conservation Concern in Ireland
BTO	British Trust for Ornithology
CBS	Countryside Bird Survey
CCA	Climate Change Allowance
CIRIA	Construction Industry Research and Information Association
CPO	Compulsory Purchase Order
CSO	Central Statistics Office
DAERA	Department of Agriculture, Environment and Rural Affairs (Northern Ireland)
DAFM	Department of Agriculture, Food and the Marine
DAHG	Department of Arts, Heritage and the Gaeltacht
DCC	Donegal County Council
DCEE	Department of Climate, Energy and the Environment
DEHLG	Department of the Environment, Heritage and Local Government
DHLGH	Department of the Housing, Local Government, and Heritage
DPER	Department of Public Expenditure and Reform
DTTAS	Department for Transport, Tourism and Sport
ECow	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ELV	Emission Limit Values
EOP	Environmental Operating Plan
EPA	Environmental Protection Agency
FRS	Flood Relief Scheme
HEWRAT	Highways England Water Risk Assessment Tool
HGV	Heavy Goods Vehicle
HLT	Holt (otter)
IAPS	Invasive Alien Plant Species
IAS	Invasive Alien Species
IEF	Important Ecological Feature

## List of Abbreviations

IFI	Inland Fisheries Ireland
IROPI	Imperative Reasons of Overriding Public Interest
ITM	Irish Transverse Mercator
JNCC	Joint Nature Conservation Committee (UK)
KER	Key Ecological Receptor
LBAP	Local Biodiversity Action Plan
NBDC	National Biodiversity Data Centre
NDP	National Development Plan
NIEA	Northern Ireland Environment Agency
NIFTI	National Investment Framework for Transport in Ireland
NIS	Natura Impact Statement
NPF	National Planning Framework
NPO	National Policy Objective
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
NSO	National Strategic Outcome
OPR	Office of Planning Regulator
OPW	Office of Public Works
PAH	Polycyclic Aromatic Hydrocarbons
pNHA	proposed Natural Heritage Area
QI	Qualifying Interest
RBMP	River Basin Management Plan
RHAT	River Hydromorphology Assessment Technique
ROI	Republic of Ireland
RSNI	Road Service Northern Ireland
SAC	Special Area of Conservation
SCI	Special Conservation Interest
SEA	Strategic Environmental Assessment
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SSCO	Site Specific Conservation Objective
TEN-T PRIPD	Trans-European Network - transport Priority Route Improvement Project, Donegal
TII	Transport Infrastructure Ireland
TSS	Total Suspended Solids
VP	Vantage Point
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZOI	Zone of Influence

# 1 INTRODUCTION

## 1.1 Purpose and Scope of Document

This document is a Natura Impact Statement (NIS) to inform the Competent Authority's Appropriate Assessment (AA) with respect to the proposed Trans-European Network – Transportation (TEN-T) Priority Route Improvement Project, Donegal (PRIPD) (hereafter referred to as “the Proposed Development”), which consists of three sections and is detailed in full at Chapter 3:

- **Section 1:** N15/N13 Ballybofey/Stranorlar Urban Region.
- **Section 2:** N56/N13 Letterkenny to Manorcunningham.
- **Section 3:** N14 Manorcunningham to Lifford/Strabane/A5 Link.

The NIS comprises a report of the scientific examination of evidence and data to determine whether the Proposed Development will result in adverse effects on the integrity of European Sites in view of best scientific knowledge and with reference to the Conservation Objectives (COs) of those Sites. With reference to Article 6(3) of the EU Habitats Directive, the Proposed Development, as documented at Chapter 3, is considered the “Project” subject to consideration by the NIS and which will be subject to Appropriate Assessment by the Competent Authority.

This NIS is structured as follows:

- **Chapter 1: Introduction** provides a brief overview of the project, structure of the NIS and the authors.
- **Chapter 2: Legislative Context and Guidance** sets out the guidance and approach which has been used to complete this Natura Impact Statement (NIS). The assessment was completed with reference to the legal context outline in Chapter 2.
- **Chapter 3: Project Description** sets out the Proposed Development which has been subject to consideration within this Natura Impact Statement (NIS). The NIS has been prepared due to likely significant effects being identified following the completion of the AA Screening of the Proposed Development; as documented under separate cover.
- **Chapter 4: Consultations** summarises the key consultations completed which informed the Proposed Development and related assessments, including the preparation of this NIS.
- **Chapter 5: Ecological Surveys to Inform NIS** summarises the methodology and findings of the ecological survey work which has been completed to inform this NIS.
- **Chapter 6: Natura Impact Assessment** assesses the Proposed Development and determines, taking into account direct and indirect effects and cumulative and in-combination effects, whether, in light of the development and the mitigation measures proposed it can be established beyond reasonable scientific doubt that there will be no adverse effects on the integrity of any European Site.
- **Chapter 7: Mitigation** sets out the mitigation proposed as part of the Proposed Development to avoid adverse effects on the European sites.
- **Chapter 8: Conclusion Of Assessment Of Adverse Effects On Integrity (With Mitigation)** provides a concluding statement and the findings of this NIS.

For the avoidance of doubt, any references to “European Site” within this document is used collectively for both those SPA and SAC designations which are identified as part of the Natura 2000 network (to which the EU Habitats Directive, including Article 6(3), applies) and the former Natura 2000 designations of the United

Kingdom and Northern Ireland. The latter no longer form part of the Natura 2000 network<sup>1</sup> to which the EU Habitats Directive applies; however, they are included within this NIS on a precautionary basis and to ensure that a holistic approach to the assessment documented within this report has been taken.

It is acknowledged that there are differences in terminology used between the current and former Natura 2000 designations with respect to how designated features are named etc. For the purposes of this NIS, a consistent terminology has been applied which aligns to the EU Habitats Directive and the guidance arising from that Directive.

## 1.2 Statement of Authority

The lead author of this NIS was Will Lishman BSc (Hons), CSci, MCIEEM, MEnvSc. Will is a Principal Ecologist with RPS; holding a BSc (Hons) in Ecology and is a Chartered Scientist (CSi). He is a full member of CIEEM (MCIEEM) and has c. 18 years' experience in ecological assessment including assessment of projects with reference to Article 6 of the EU Habitats Directive. In leading the authorship of the NIS, Will has worked collaboratively on technical and assessment matters with Paul Murphy and Lauren Williams.

Paul Murphy MSc, CEnv, MCIEEM. Paul is a Director of Eireco Environmental Consultants with 30 years of professional practice. Paul holds an MSc in Environmental Science and a Diploma in Aquatic Biology. He is a Chartered Environmentalist (CEnv), a full member of CIEEM (MCIEEM) and a member of the Institute of Fisheries Management. Paul is the lead ecological assessor with respect to Section 3 of the Proposed Development.

Lauren Williams BSc. PGDIP Env Eng MCIEEM. Lauren is an aquatic ecologist with over 25 years' professional experience. Lauren is the lead assessor on all aquatic ecology matters for the Proposed Development.

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<sup>1</sup> <https://natura2000.eea.europa.eu/>

## 2 LEGISLATIVE CONTEXT AND GUIDANCE

### 2.1 Legislative Context

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, hereafter referred to as “the Habitats Directive”, provides protection for habitats and species of European importance: as transposed into national legislation. The NIS has been prepared with respect to the provisions of both the Directive and transposed legislation.

Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of a European Union (EU) wide network of sites known as Natura 2000 (hereafter referred to as ‘European Sites’).

As stated earlier and given the spatial context of the Proposed Development, for the avoidance of doubt, any references to “European Site” within this document is used collectively for both those SPA and SAC designations which are identified as part of the Natura 2000 network (to which the EU Habitats Directive, including Article 6(3), applies) and the former Natura 2000 designations of the United Kingdom and Northern Ireland. The latter no longer form part of the Natura 2000 network to which the EU Habitats Directive applies; however are included within this NIS on a precautionary and holistic basis.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests as they relate to Appropriate Assessment (AA). This NIS has been prepared with reference to Article 6(3) and has been applied equally with respect to both current and former Natura 2000 designations identified as relevant to the Proposed Development and, therefore, the NIS.

Articles 6(3) states:

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

Article 6(4) states:

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

Each European Site has assigned conservation objectives (COs) and a list of Qualifying Interests (QI’s) and/or Special Conservation Interest (SCI) species. The CO concept appears in the eighth recital of the Habitats Directive which reads: “whereas it is appropriate, in each area designated, to implement the necessary measures having regard to the conservation objectives pursued.” Article 1 then explains that “conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status.”

With regard to COs for the Natura 2000 designations of the Republic of Ireland, the National Parks and Wildlife Service (NPWS) publish COs for European Sites on their website<sup>2</sup>. These have been referred to during the preparation of this NIS. As identified with the AA Screening, no transboundary likely significant

<sup>2</sup> <https://www.npws.ie/protected-sites/conservation-management-planning/conservation-objectives>

effects on other Natura 2000 designations of other Member States have been identified and therefore no other published CO references have been sought from other Member States.

COs of the former Natura 2000 designations in Northern Ireland are published by the Department of Agriculture, Environment and Rural Affairs (DAERA)<sup>3</sup>. These have been referred to during the preparation of this NIS.

## 2.2 Guidance and Approach

The principal national and European guidelines have been followed in the preparation of the NIS. The following non-exhaustive list identifies these and other pertinent guidance documents:

- European Commission (EC, 2021) Assessment of Plans and Proposed Developments in relation to Natura 2000 Sites – Methodological Guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- Office of the Planning Regulator (OPR, 2021) Practice Note (PN01) 'Appropriate Assessment Screening for Development Management'.
- European Commission Notice C (EC, 2018) 7621 '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, 2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission.
- Department of Environment, Heritage and Local Government (DEHLG, 2010a) Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin.
- (DEHLG, 2010b) DEHLG Government Circular - National Parks and Wildlife Service (NPWS) 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities. Department of Environment, Heritage and Local Government.
- (NRA, 2009) *Guidelines for Assessment of Ecological Impacts of National Roads Schemes. Revisions 2, 1st June 2009*. National Roads Authority.
- TII (2025) Water Impact Assessment for National Roads, Light Rail, Metro and Rural Cycleways – Overarching Technical Document.
- European Commission (EC, 2000) Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg.

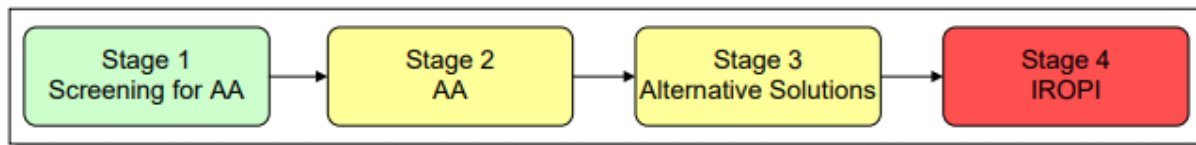
The Commission's 2018 Notice (EC, 2018), and European and national case law have been reviewed and have informed the approach and content of this document in relation to key issues including the interpretation of concepts of site integrity, the absence of lacunae and the use of mitigation measures among others.

## 2.3 Stages of Appropriate Assessment

The Department of the Environment Heritage and Local Government guidance for planning authorities (DEHLG, 2010a) outlines a potential four-stage process to complete the AA and outlines the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines

<sup>3</sup> <https://www.daera-ni.gov.uk/protected-areas>

whether a further stage in the process is required. The four stages are summarised diagrammatically in Figure 2-1 below, and an outline of the steps and procedures involved in completing each stage follows.



**Figure 2-1: Potential Four Stages of Appropriate Assessment (as per DEHLG (2010a))**

### 2.3.1 Stage 1: Screening for AA

This process identifies whether the Proposed Development is directly connected to or necessary for the management of a European Site(s) and identifies whether the Proposed Development, in the absence of mitigation, is likely to have significant effects upon a European Site(s) either alone or in combination with other plans or projects.

The screening for AA of the Proposed Development is documented under separate cover. For the avoidance of doubt, it is confirmed that no measures intended to mitigate any potential effects of the Proposed Development on any European Site have been considered when carrying out the screening for AA.

The output from this stage is a determination of not significant, significant, potentially significant, or uncertain effects; invoking the precautionary principle as deemed necessary. The latter three determinations will cause the project to be taken forward to Stage 2 Appropriate Assessment as informed by the conclusions of a Natura Impact Statement (NIS) prepared to inform that assessment.

With respect to this Proposed Development, the screening for AA (as referenced above) identified likely significant effects, which triggered a requirement to complete Stage 2, as summarised below.

### 2.3.2 Stage 2: Appropriate Assessment

This stage considers whether, with reference to their Conservation Objectives, the Proposed Development will result in adverse effects on the integrity of European Sites, either alone or in combination with other projects or plans. This assessment is completed with consideration of any mitigation measures capable of preventing those adverse effects. This assessment is completed by the Competent Authority. The Competent Authority's assessment and determination is typically informed by a Natura Impact Statement (NIS) plus any additional information it deems necessary to complete its assessment and determination. This document is the NIS for the Proposed Development and has been prepared to inform the Competent Authority's appropriate assessment and determination of adverse effects on the integrity of European Sites as a result of implementing the Proposed Development.

In the event that the Competent Authority is unable to conclude no adverse effect on the integrity of European Sites, then it can trigger Stage 3 and 4 (as summarised below) or the project should be refused/abandoned. The need to trigger Stage 3 and 4 will be determined by the Competent Authority following the completion of the Appropriate Assessment of the Proposed Development; as informed by this NIS.

### 2.3.3 Stage 3: Assessment of Alternatives

If adverse effects on integrity remain following the completion of Stage 2 and if the project is not refused/abandoned at that stage, Stage 3 examines any alternative solutions or options that could enable a project to proceed without adverse effects on the integrity of the European Site(s) in question. If same are identified, then the process must return to Stage 2 as alternatives will require AA in order to proceed. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least

damaging option has been selected, it is necessary to progress to Stage 4. If no alternatives exist or all alternatives would result in adverse effects to the integrity of the European Sites, then the process either moves to Stage 4 or the project is abandoned.

#### **2.3.4 Stage 4: Assessment where Adverse Impacts Remain**

Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a European Site to proceed in cases where it has been established that no less damaging alternative solution exists. This stage includes the proposal and assessment of compensatory measures which must be shown to be practical, implementable, likely to succeed, proportionate and enforceable and they must be approved by the relevant body. If Annex I priority habitats as listed in the Habitats Directive are present in the European Site whose integrity is adversely affected, then approval will only be issued following the obtaining of an opinion from the European Commission. In any event the European Commission must be informed of the compensatory measures.

## 3 PROJECT DESCRIPTION

### 3.1 Project Overview

The N13, N14 and N15 (part of) national primary roads form part of the TEN-T in Donegal, which is a selection of strategic transport corridors throughout the European Union (EU) that have been identified to play a key role in the mobility of goods and passengers through the EU. *Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013*, sets the requirements for the TEN-T network.

Letterkenny, the largest town in Donegal (22,549 (CSO, 2022)), is connected to Derry via the N13, to Lifford (the County Town) via the N13-N14 and to Ballybofey/ Stranorlar via the N13-N15. The TEN-T routes in Donegal are broadly described below:

**N13:** A strategic route that connects Letterkenny with Derry City, Northern Ireland, to the north and via the N15 Ballybofey/ Stranorlar to Sligo and Galway/Limerick (via N17) to the south. The N13 connects with three other national routes including: the N14 to Lifford, the N56 (national secondary route) to Letterkenny and north Donegal and the N15 in Ballybofey/Stranorlar.

**N14:** A strategic route that connects Letterkenny to Lifford and links via the Lifford bridge over the River Foyle to the existing A5 and Strabane in County Tyrone, Northern Ireland. The existing A5 in Northern Ireland, on the Derry City to Dublin route, passes to the west of Strabane, adjacent to the county boundary with Donegal, and is the key route linking the northwest of Ireland and Donegal via the N14 and N15 to the N2 in Monaghan and on to Dublin.

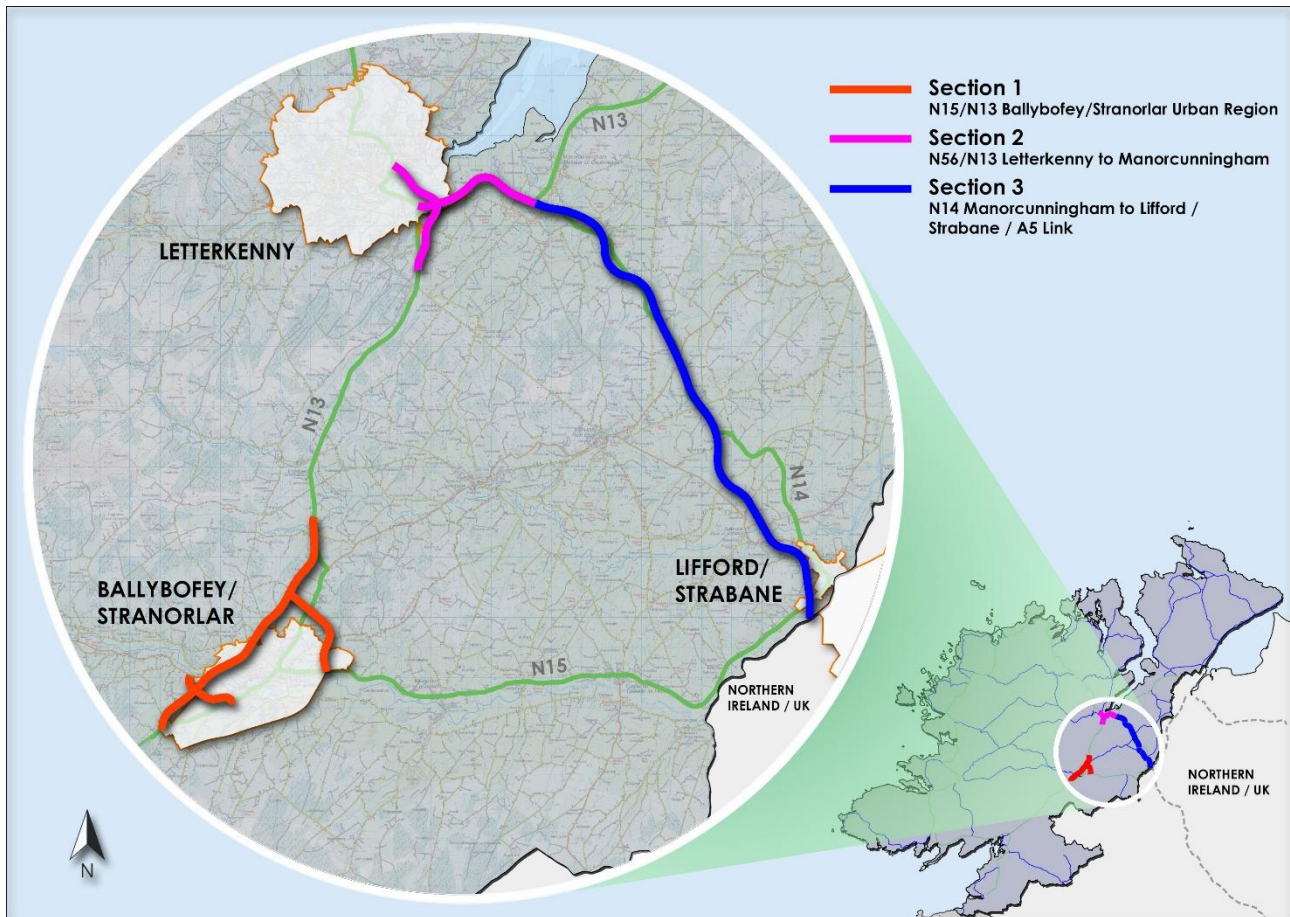
**N15:** A strategic route that connects from Sligo to Donegal Town and continues north easterly through Ballybofey/ Stranorlar to Lifford where it connects to the N14 and links to Strabane in County Tyrone, Northern Ireland. The section between Stranorlar and Lifford does not form part of the TEN-T network.

These TEN-T strategic routes in Donegal connect to the principal road network north and eastward in Northern Ireland and southeast to Dublin (via the A38 crossing of the River Foyle and the current A5) and south to Limerick/Galway (via the N17 and N15 to Sligo). The routes are core strategic and critical economic infrastructure. They are particularly important for both tourism and industry and are the only access to regional and international hubs. The routes provide the only available transport option to the northwest due to the lack of rail infrastructure (with Sligo and Derry being rail passenger only) or access to Tier 1 ports or airports within 100 km of the region.

The Proposed Development, and therefore the “Project” considered and assessed by this NIS, consists of the following sections of road network in Donegal (see Figure 3-1):

- **Section 1** – N15/N13 Ballybofey/ Stranorlar Urban Region (9.7 km of mainline)
- **Section 2** – N56/N13 Letterkenny to Manorcunningham (9.0 km of mainline)
- **Section 3** – N14 Manorcunningham to Lifford/Strabane/A5 Link (17.5 km of mainline)

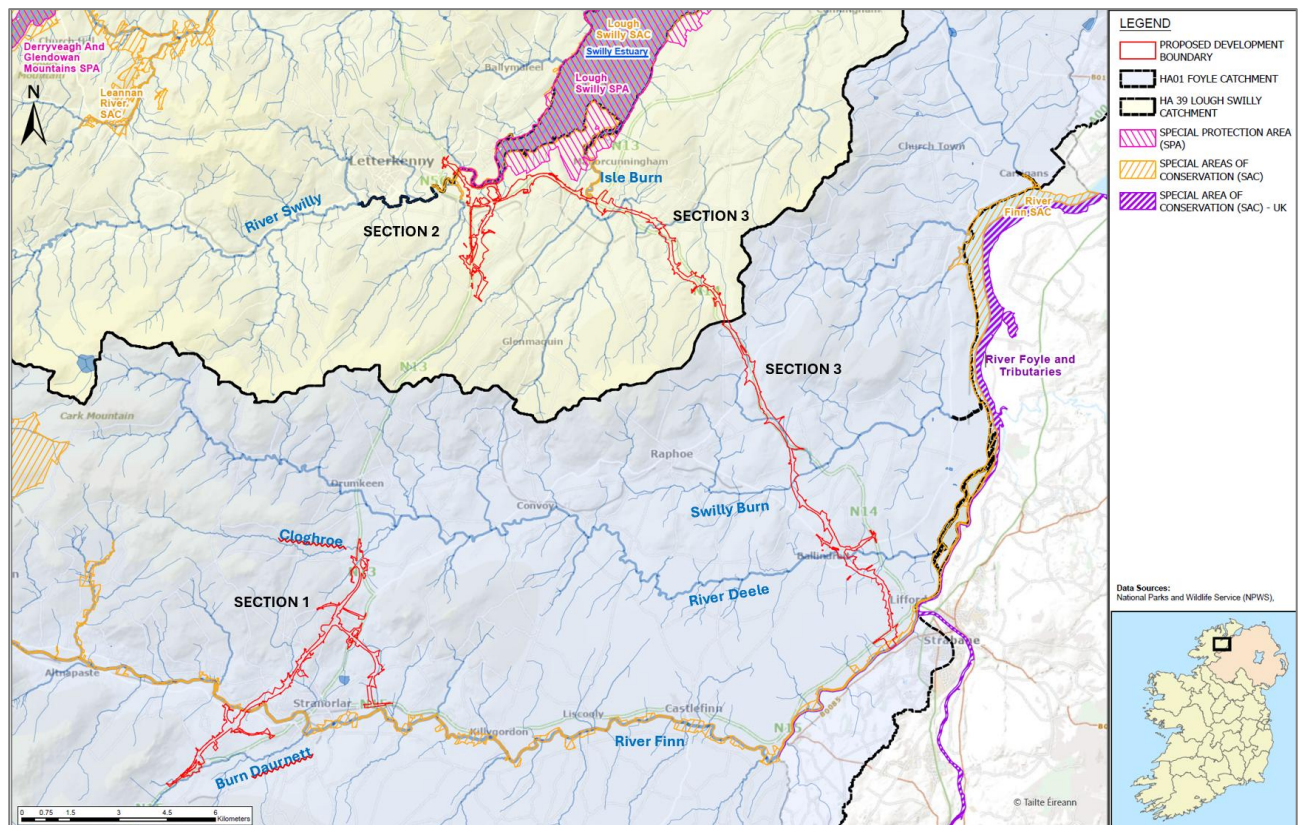
For the avoidance of doubt, the Proposed Development and, therefore, the “Project” for the purposes of this NIS, constitutes collectively all three sections.



**Figure 3-1: Proposed Development Location**

As illustrated in Figure 3-2 below and Appendix 2 NIS Drawings: Drawing 4 Overview of Major River Catchments, the Proposed Development occurs in two distinct Hydrometric Areas (HA) comprising the major river catchments within which the Proposed Development is set. This is important in terms of understanding hydrological linkages and potential impact pathways between the road Sections and the European Sites in a wider context:

- **HA 01 Foyle:** Drainage from all of Section 1 and the southern 2/3rds of Section 3 via the River Finn and River Foyle, ultimately reaching the sea at Lough Foyle; and
- **HA 39 Lough Swilly:** Drainage from all of Section 2 and the northern 1/3rd of Section 3 via small tributaries of Lough Swilly, and the Leslie Hill Stream (Isle Burn) and estuarine River Swilly.



**Figure 3-2: Hydrological Connectivity Across Two Separate Water Catchments and European Sites**

Drawings showing the General Arrangements for the Proposed Development are presented in Appendix 2: NIS Drawings. The drawings for the three sections are numbered as follows:

- Section 1: Drawing 1, Sheet 1 though 8;
- Section 2: Drawing 2, Sheet 1 though 5;
- Section 3: Drawing 3, Sheet 1 though 10.

The following sections provide a brief description of the Proposed Development for each individual section, highlighting areas that are of most relevance to this report. The full Project Description can be found at Appendix 1: Project Description. The full Project Description has been assessed within this NIS.

It is expected that the Proposed Development will be constructed under a Design & Build Contract pursuant to which the contractor will undertake the detailed design stage in accordance with the terms and conditions of any planning consent for the Proposed Development. The design of the Proposed Development has been developed to the point where all the potential environmental impacts and effects can be identified and assessed and feeds into the requirements for detailed design. Donegal County Council will be required to ensure that the Proposed Development is constructed and operated in accordance with the conditions of any Order that may be granted by An Coimisiún Pleanála for the Proposed Development.

## 3.2 Section 1 N15 Ballybofey/Stranorlar Urban Region

### 3.2.1 Overview

The Proposed Development boundary of Section 1 commences in the townland of Meencaragh (Mainline Section 1.1) to the southwest of Ballybofey on the existing N15 and extends northeast to the townland of Callan (Mainline Section 1.3) where it joins with the existing N13.

In the townland of Capry, the Ballybofey Link Road North/South extends from the Mainline Section 1.2 to tie-in with the existing R252 (existing Glenfin Road) and the existing N15 in the townland of Capry (Graham).

At Tevickmoy, the N15 Primary Road Connector will be constructed linking Mainline Section 1.2 with the existing N15 east of Stranorlar at Treanamullin.

Section 1 is bounded to the north by uplands comprising Liskeran Hills and to the south by the foothills of the Bluestack Mountains, including Croagharierin and Lough Hills. The River Finn flows through the middle of the mainline of Section 1 and is crossed by a proposed new seven-span bridge that involves a clear-span of the River Finn and its floodplain c. 2.2km upstream of Ballybofey/ Stranorlar. The River Finn is a Special Area of Conservation (SAC) for most of its length from the headwaters to where it joins Lough Foyle, including at the crossing point of the Proposed Development.

An illustration of the Proposed Development boundary and relevant European sites is provided in Figure 3-3.

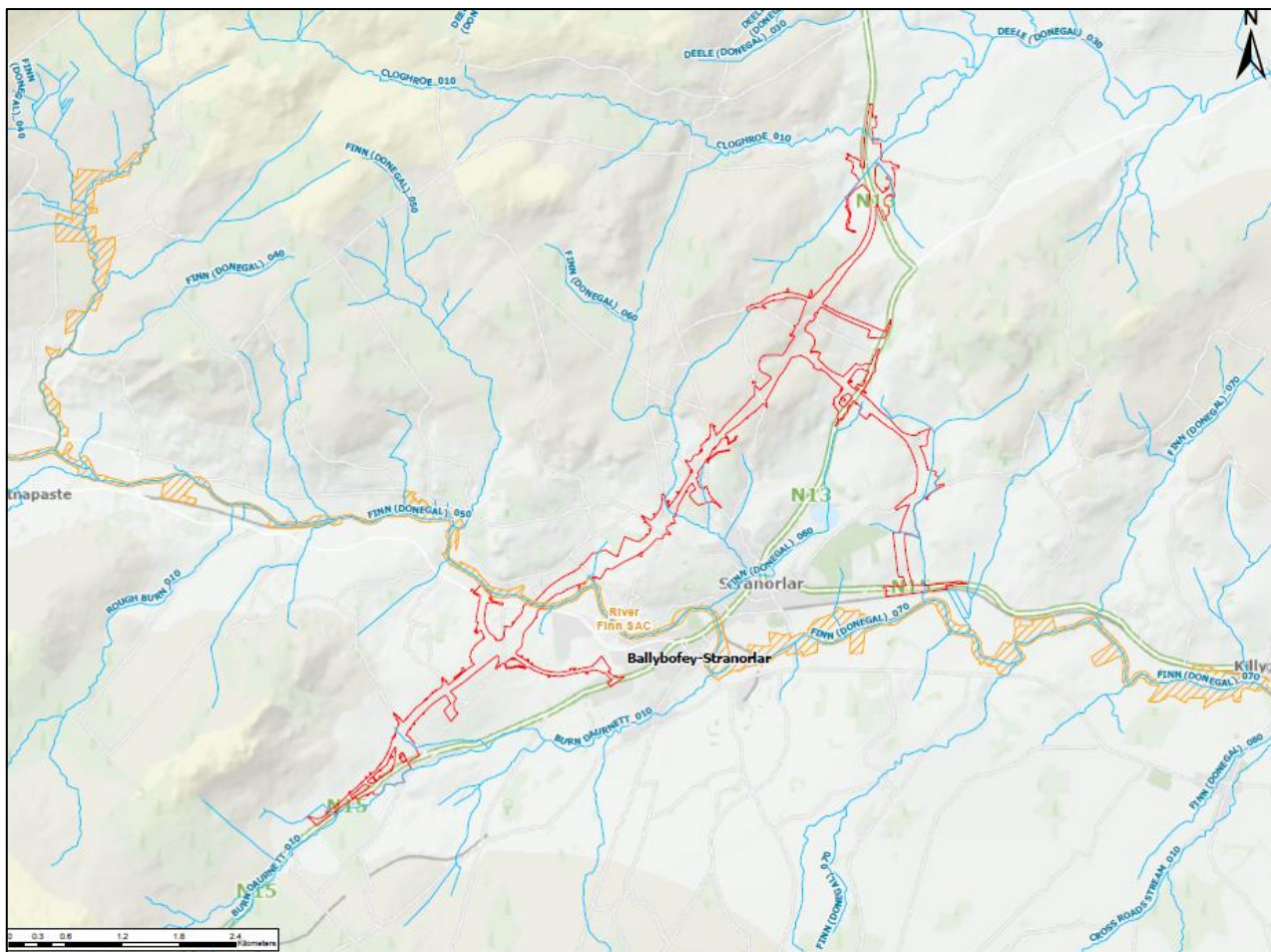


Figure 3-3: Section 1 and European Sites

### 3.2.2 Design

The Section 1 mainline is approximately 9.7 km long and runs from south to north and to the west of Ballybofey/ Stranorlar. Additionally, there are two link roads located to the south and the north of the towns providing connections from the Proposed Development to the existing N15 and R252 (Ballybofey), N13 (north of Stranorlar) and N15 (to Lifford) respectively.

The interfaces with the existing roads include:

- Tie-in to N15 south of Dooish.
- Tie-in to R252 Glenties Road at Cappry from Ballybofey Link Road North.
- Tie-in to N15 Ballybofey/ Cappry (Graham) from Ballybofey Link Road South.
- Tie-in to N13 north of Meenavoy.
- Tie-in to N13 at Tircallan.
- Tie-in to N15 at Treanamullin

An illustration of Section 1 including the nomenclature given to its major components is illustrated below in Figure 3-4. For more detail on Section 1 including the alignment please refer to Drawing 1 General Arrangement Drawings, sheets 1-8, in Appendix 2: NIS Drawings and the Project Description in Appendix 1.

The Proposed Development in Section 1 can be summarised under the following elements. The lengths of the individual sections are approximate and rounded up or down to the nearest one decimal place.

#### Roads

- Mainline Section 1.1 which is 0.5 km of Type 1 Single Carriageway cross section between the existing N15 southern tie in and Dooish Junction (Drawing 1, sheet 1 of 8).
- Mainline Section 1.2 which is 8.6 km of Type 2 Divided Road bypassing Ballybofey/ Stranorlar between Dooish Junction and Meenavoy Junction (Drawing 1, sheets 1, 2, 4, 5, 6 and 7 of 8).
- Mainline Section 1.3 which is 0.6 km of Type 1 Single Carriageway cross section between Mainline Section 1.2 (Meenavoy Junction) and the existing N13 to the north of the Proposed Development (Drawing 1, sheet 7 of 8).
- Ballybofey Link Road (north and south sections) which is 2.1 km Type 2 Single Carriageway connecting Mainline Section 1.2 to the local road network at Ballybofey (Drawing 1, sheets 2 and 3 of 8).
- N15 Primary Road Connector which is 3.1 km of Type 3 Divided Road connecting Mainline Section 1.2 to the existing N15 Lifford Road (Teevickmoy Junction to Treanamullin Junction) (Drawing 1, sheets 6 and 8 of 8).
- Provision of approximately 10.6 km of additional Type 1, Type 2 and Type 3 Single Carriageway roads not already mentioned above (includes new and realigned).

#### Junctions

- Three compact grade-separated junctions, one each at Cappry (Drawing 1, sheet 2 of 8), Teevickmoy, and Tircallan/ Dunwiley (both shown on Drawing 1, sheet 6 of 8), including structures, link roads and roundabouts.
- Three at-grade roundabout type junctions at tie-in transition points at Dooish (Drawing 1, sheet 1 of 8), Meenavoy (Drawing 1, sheet 7 of 8), and Treanamullin (Drawing 1, sheet 8 of 8).

## Structures

- 360 m long, seven span bridge (ref: N15R024) over the River Finn and flood plain at Ballybofey/ Stranorlar (two abutments, six piers with clear span over the river channel). The River Finn is designated an SAC at this location. However, there are no construction works within the SAC and the clear-span section of the bridge crosses over the SAC (see Figure 3-3 and Figure 3-4 below and Appendix 2 NIS Drawings: Drawing 22-24 River Finn Crossing-Section 1).
- Two river/stream bridges (Backlees and Cloghroe rivers).
- Seven overbridges.
- Five underbridges.
- Three underpasses (including active travel / mammal underpass).
- Culverts, gantries and environmental barriers.

## Active Travel

- Provision of active travel infrastructure. This includes connections to existing infrastructure and three new Park and Share / Cycle facilities, one each near Dooish, Cappry, and Meenavoy as illustrated in Appendix 2 NIS Drawings: Drawing 1 General Arrangement Drawings. The active travel route utilises the same watercourse crossing structures as the Proposed Development.

## Other Works

- Access roads.
- Provision of attenuation ponds, flood compensation measures, watercourse diversions and associated drainage infrastructure.
- Provision of existing utility diversions and new utility infrastructure.
- Provision of landscape planting, signage, lighting, safety barrier, and other works ancillary to the construction and operation of the Proposed Development.

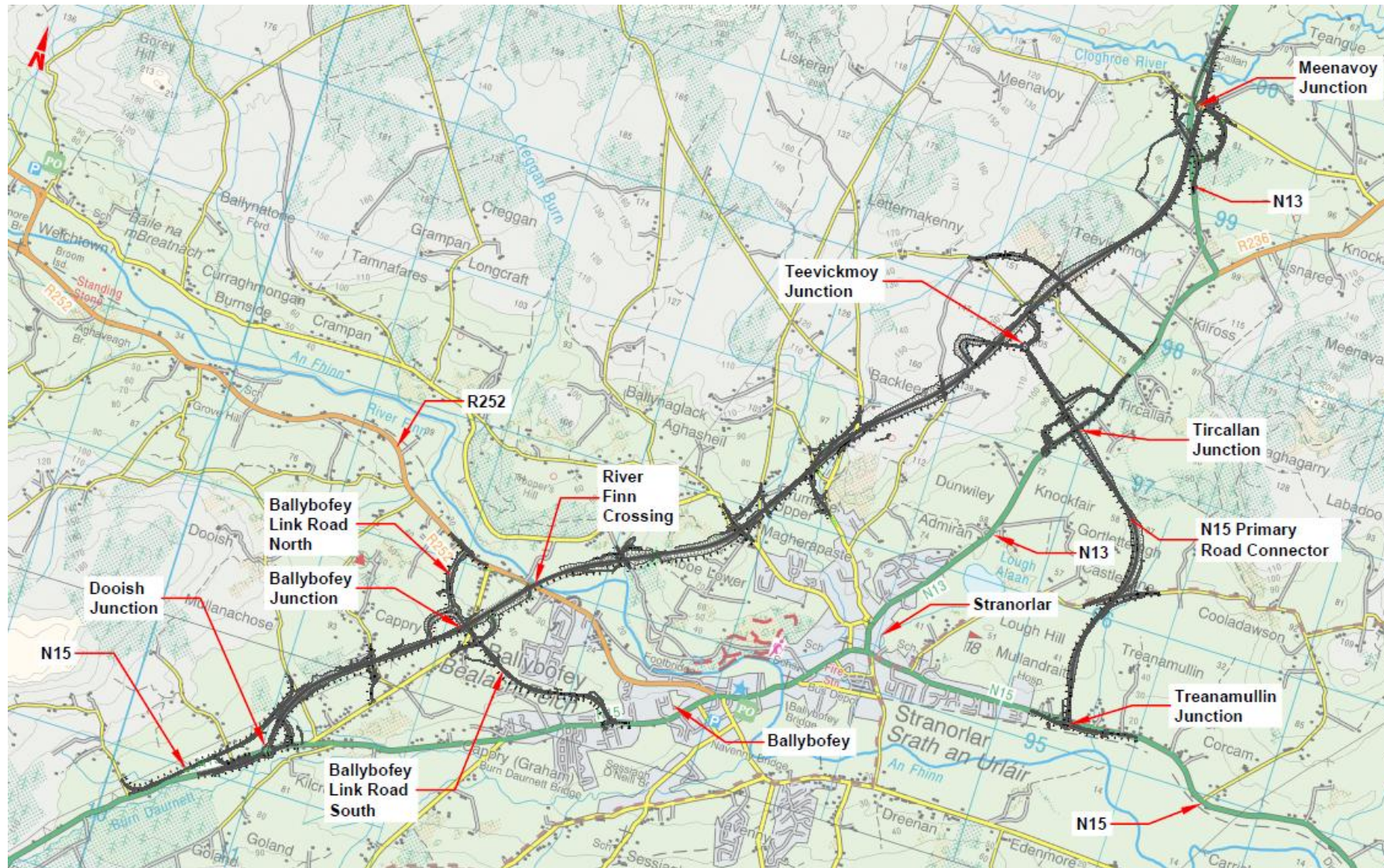


Figure 3-4: Section 1 Proposed Development

### 3.3 Section 2 N56/N13 Letterkenny to Manorcunningham

#### 3.3.1 Overview

The Proposed Development boundary of Section 2 commences in the townland of Listellian (Mainline Section 2.1) to the south of Letterkenny on the existing N13 and extends north to Dromore (Mainline Section 2.2) before crossing through Bonagee (Mainline Section 2.5), crossing the River Swilly (Mainline Section 2.6) and tying in with the existing roundabout on the N56/ R245 at Ballyrairie (known locally as the Creamery Roundabout). Additionally, Section 2 includes an upgrade and improvement of the existing dual carriageway between Dry Arch Roundabout to Dromore (Mainline Section 2.3), continuing east (Mainline Section 2.4) to the existing Pluck Roundabout where the N13 (to Derry) and N14 (to Lifford) roads meet. This is the tie-in between Section 2 and Section 3 of the Proposed Development.

The River Swilly flows through Letterkenny becoming the Swilly Estuary transitional water body from Ballymacool downstream. Mainline Section 2.6 crosses the estuarine reaches of the river just east of Ballyrairie. The estuarine River Swilly is part of the Lough Swilly SAC at this point. The proposed new bridge is three span and includes a clear span over the river channel and the SAC. The bridge structure has no footprint within the SAC. An existing (N13) triple-barrel culvert crossing of the Leslie Hill Stream (local names: 'Isle Burn' and 'Corkey River') is located just west of the existing Pluck Roundabout. The Lough Swilly SAC boundary commences on the northern side of this existing N13 crossing, i.e., on the immediate downstream side, and follows the estuarine reaches of the Leslie Hill Stream to Lough Swilly. The Lough Swilly Special Protection Area (SPA) is located immediately north of the Proposed Development.

An illustration of the Proposed Development boundary and relevant European sites is provided in Figure 3-5.

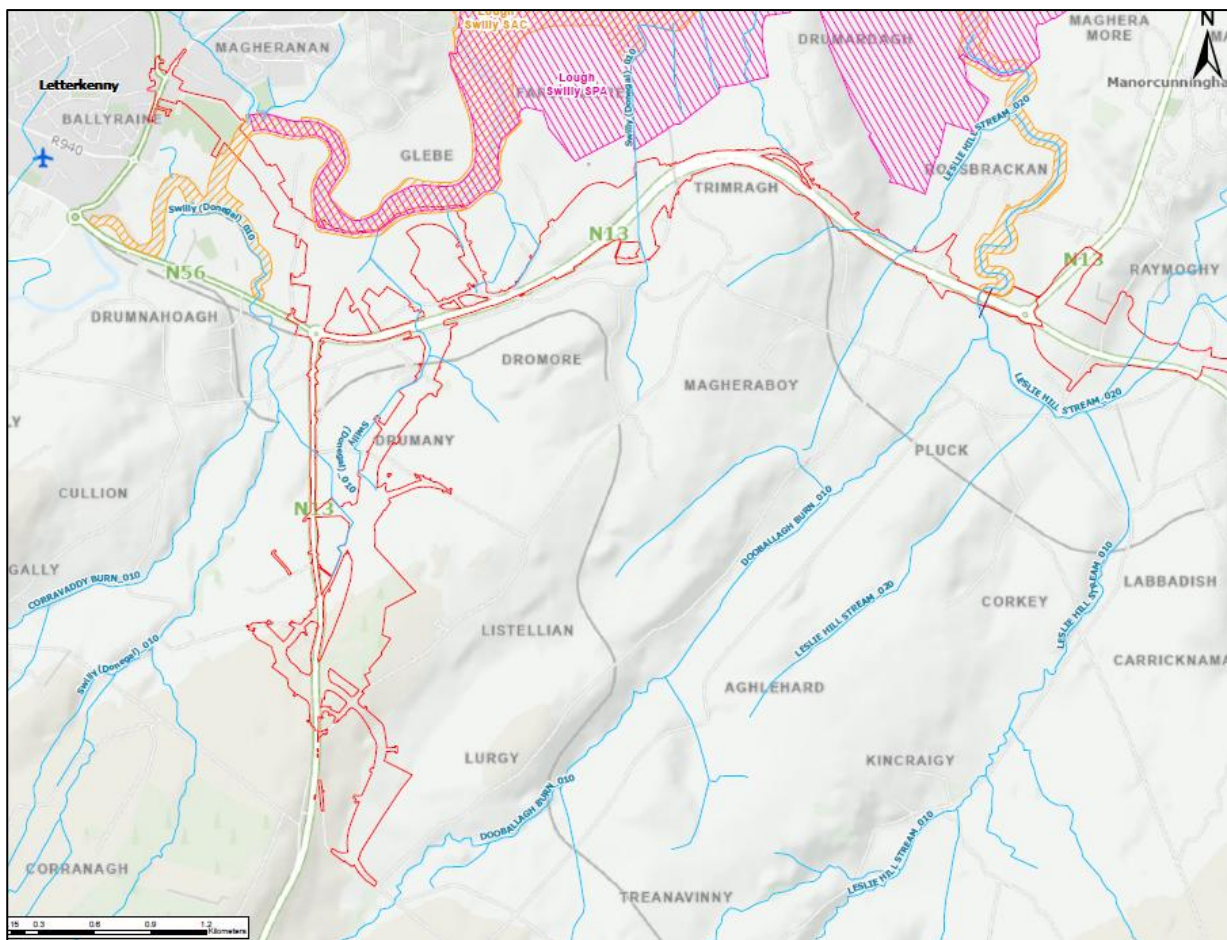


Figure 3-5: Section 2 and European Sites

### 3.3.2 Design

Section 2 is located to the south and east of Letterkenny and comprises three distinct arms from the proposed Dromore junction as follows:

- South from the proposed new Dromore Junction to meet the existing N13 at Listellian.
- Northwest from the proposed new Dromore Junction through Bonagee Junction, a new bridge over the River Swilly, and meeting the existing N56 at the proposed new Ballyraine Junction. The existing roundabout on the N56 is known locally as the Creamery Roundabout at Ballyraine.
- East from the proposed new Dromore Junction along the existing N13 to the N13/ N14 Pluck Roundabout at Raymoghly (Section 3 interface).

The existing N13 from the proposed Dromore Junction west to the Dry Arch Junction and the proposed link road from the Dry Arch Junction north to the proposed Bonagee Junction also form the corridor.

The Section 2 mainline is approximately 9.0 km long and connects with the existing national road network as follows:

- Tie-in to existing N13 at Listellian (proposed online junction).
- Tie-in to existing N13/N56 at Bonagee (existing Dry Arch roundabout to be improved).
- Tie-in to existing N56/R245 at Ballyraine (existing roundabout to be improved).
- Tie-in to the existing N13 dual carriageway at Dromore (proposed online junction).
- Tie-in to the existing N13/N14 in proximity to Pluck roundabout at Raymoghly (Section 3 interface).

An illustration of Section 2 including the nomenclature given to its major components is illustrated below in Figure 3-6. For more detail on Section 2 including the alignment please refer to Drawing 2 General Arrangement Drawings, Sheets 1-5, in Appendix 2: NIS Drawings and the Project Description in Appendix 1.

The proposed works can be summarised under the following elements. The lengths of the individual sections are approximate.

#### Roads

- Mainline Section 2.1 which is 0.3 km of Type 1 Single Carriageway extending from the N13 southern tie-in to the Listellian Junction (Drawing 2, sheet 1 of 5).
- Mainline Section 2.2 which is 2.1 km of Type 2 Divided Road extending from the Listellian Junction to the Dromore Junction (Drawing 2, sheets 1 and 2 of 5).
- Mainline Section 2.5 which is 0.6 km of Type 2 Divided Road extending from the Dromore Junction to the Bonagee Junction (Drawing 2, sheet 2 of 5).
- Mainline Section 2.6 which is 1.4 km of Type 2 Divided Road extending from the Bonagee Junction to Ballyraine junction (Drawing 2, sheets 2 and 3 of 5).
- Mainline Section 2.3 which is 0.7 km of Type 1 Dual Carriageway (realigned and improved) extending from Dry Arch Junction to Dromore Junction (Drawing 2, sheet 2 of 5).
- Mainline Section 2.4 which is 3.5 km of Type 1 Dual Carriageway (realigned and improved) extending from Dromore Junction to the interface with Section 3 west of the existing N13/N14 Pluck Roundabout (Drawing 2, sheets 4 and 5 of 5).

- Bonagee Link which is 0.4 km of Type 2 Divided Road extending from the Dry Arch Junction to the Bonagee Junction (Drawing 2, sheet 2 of 5).
- Provision of approximately 12.1 km of additional Type 1, Type 2 and Type 3 Single Carriageway roads not already mentioned above (includes new and realigned).

## Junctions

- One grade-separated junction at Trimragh (Drawing 2, sheet 4 of 5): this includes an overbridge structure, two roundabouts, slip roads and connections to realigned local roads. This junction replaces the existing at grade legacy junction with a collision history.
- Five new at-grade roundabout junctions at:
  - Listellian (Drawing 2, sheet 1 of 5).
  - Dromore (Drawing 2, sheet 2 of 5).
  - Bonagee (Drawing 2, sheet 2 of 5).
  - Modified and upgraded roundabout at the existing Dry Arch roundabout (Drawing 2, sheet 2 of 5) and
  - Modified and upgraded roundabout at the existing Creamery roundabout (townland of Ballyraine) (Drawing 2, sheet 3 of 5).
- The tie-in at the Pluck Roundabout (interface between Section 2 and Section 3 is addressed in Section 3).

## Structures

- One signature three-span bridge crossing over the River Swilly at Letterkenny (235 m long, two abutments, two piers, with clear span over the estuarine River Swilly). The Swilly at this location is designated as Lough Swilly SAC. However, there are no construction works within the SAC and the clear span section of the bridge crosses over the SAC (see Figure 3-6 below and Appendix 2 NIS Drawings: Drawing 28 – 29 River Swilly Crossing).
- Three overbridges.
- Three underbridges.
- One active travel road overbridge.
- One active travel river bridge at the Isle Burn (EPA name: Leslie Hill Stream). The clear span structure is proposed on the upstream (southern) side of an existing triple-barrel culvert for the existing N13 dual-carriageway, just to the west of the existing Pluck Roundabout. At this location, the northern side of the dual carriageway and culvert forms the boundary of the Lough Swilly SAC. There are no temporary construction works or permanent footprint within the SAC associated with this crossing.
- Two active travel underpasses near Dromore Junction.
- Modifications to an existing accommodation underpass east of Trimragh Junction
- Various culverts, gantries, environmental noise barriers and retaining wall structures.

## Active Travel

- Provision of active travel infrastructure: this includes connections to existing infrastructure and a new Park and Share / Cycle facility located at Dry Arch Junction as illustrated in Appendix 2 NIS Drawings: Drawing 2 General Arrangement Drawings.

## Other Works

- Access roads.
- Provision of attenuation ponds, flood compensatory measures, watercourse diversions and associated drainage infrastructure.
- Provision of existing utility diversions and new utility infrastructure.
- Provision of landscape planting, signage, lighting, accommodation works ancillary to the construction and operation of the Proposed Development.

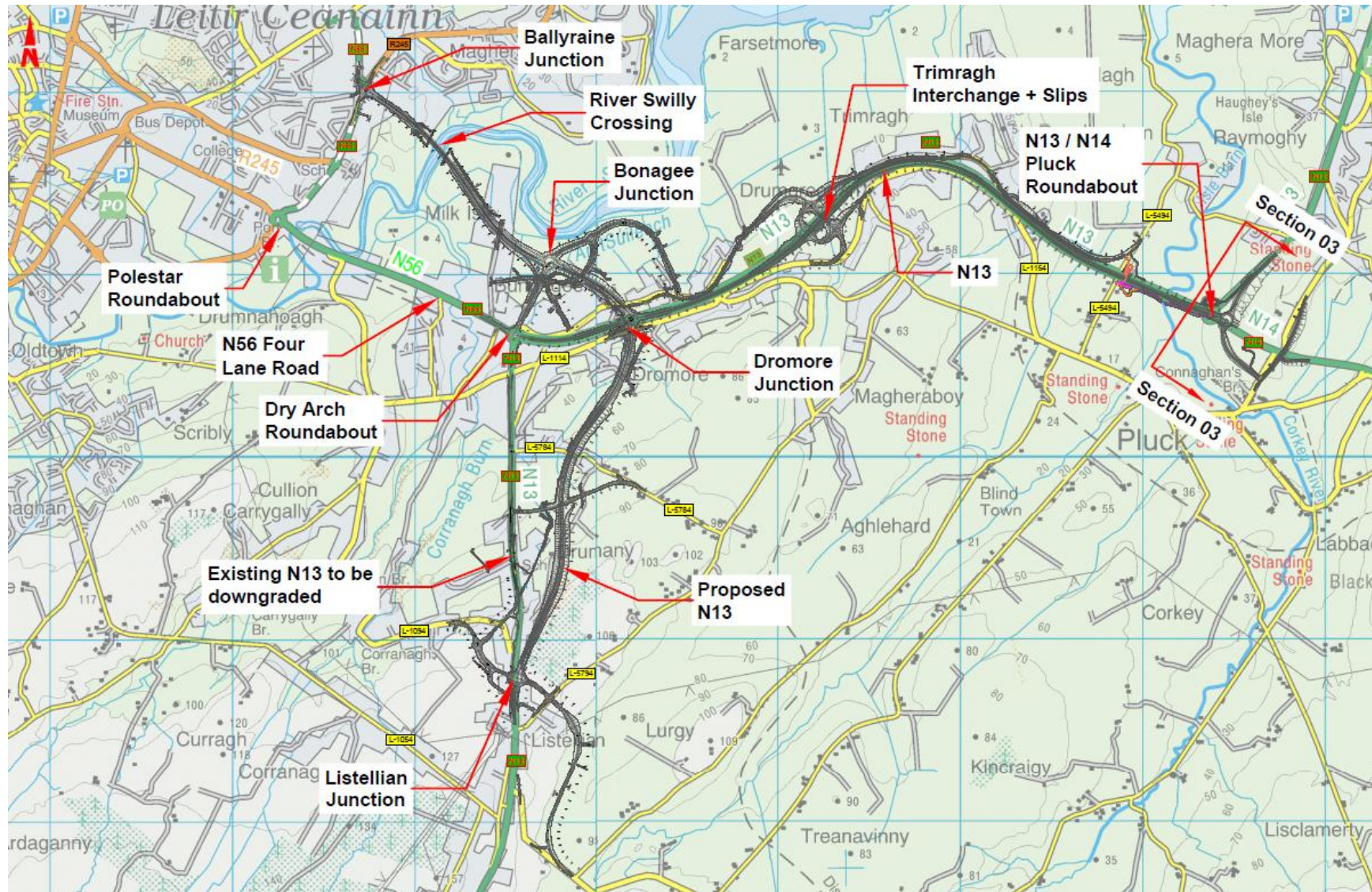


Figure 3-6: Section 2 Proposed Development

### 3.4 Section 3 N14 Manorcunningham to Lifford/Strabane/A5 Link

#### 3.4.1 Overview

Section 3 extends from the Pluck Roundabout (N13/N14 junction at Manorcunningham, interface with Section 2) to Lifford. It will replace the existing N14 linking Letterkenny to Lifford/ Strabane. The existing Pluck Roundabout in the townland of Raymoghly, where the existing N13 and N14 meet, will be replaced by a new roundabout and link to the proposed Section 2 approximately 0.3 km to the west. Section 3 will meet the existing N15 to the south of Lifford at a new roundabout, the N14/N15 Lifford Junction, in the townland of Curragalane. This junction will facilitate a proposed new cross border link with the A5 (N14/N15 to A5 Link), that will connect to a proposed Trunk Road T3 in Northern Ireland which in turn connects to the proposed A5 Western Transport Corridors (WTC) in Strabane, Co. Tyrone.

In the northern one-third of Section 3, small tributaries of the Pluck stream are crossed, which connect to the Leslie Hill Stream which in turn flows into Lough Swilly. In the southern two-thirds of Section 3, small tributaries of the Swilly Burn and Deele River, and the main channels themselves are crossed. These main channels flow eastwards to meet the tidal River Foyle north of Lifford. The proposed N14/N15 to A5 Link over the River Finn is located 1.45 km upstream of Lifford. The River Finn at this crossing location, and the downstream River Foyle are SACs, designated under the two jurisdictions of the Republic of Ireland and Northern Ireland as the River Finn SAC (Site Code: 002301) and the River Foyle and Tributaries (Reference: UK0030320), respectively.

An illustration of the Proposed Development boundary and relevant European sites is provided in Figure 3-7.

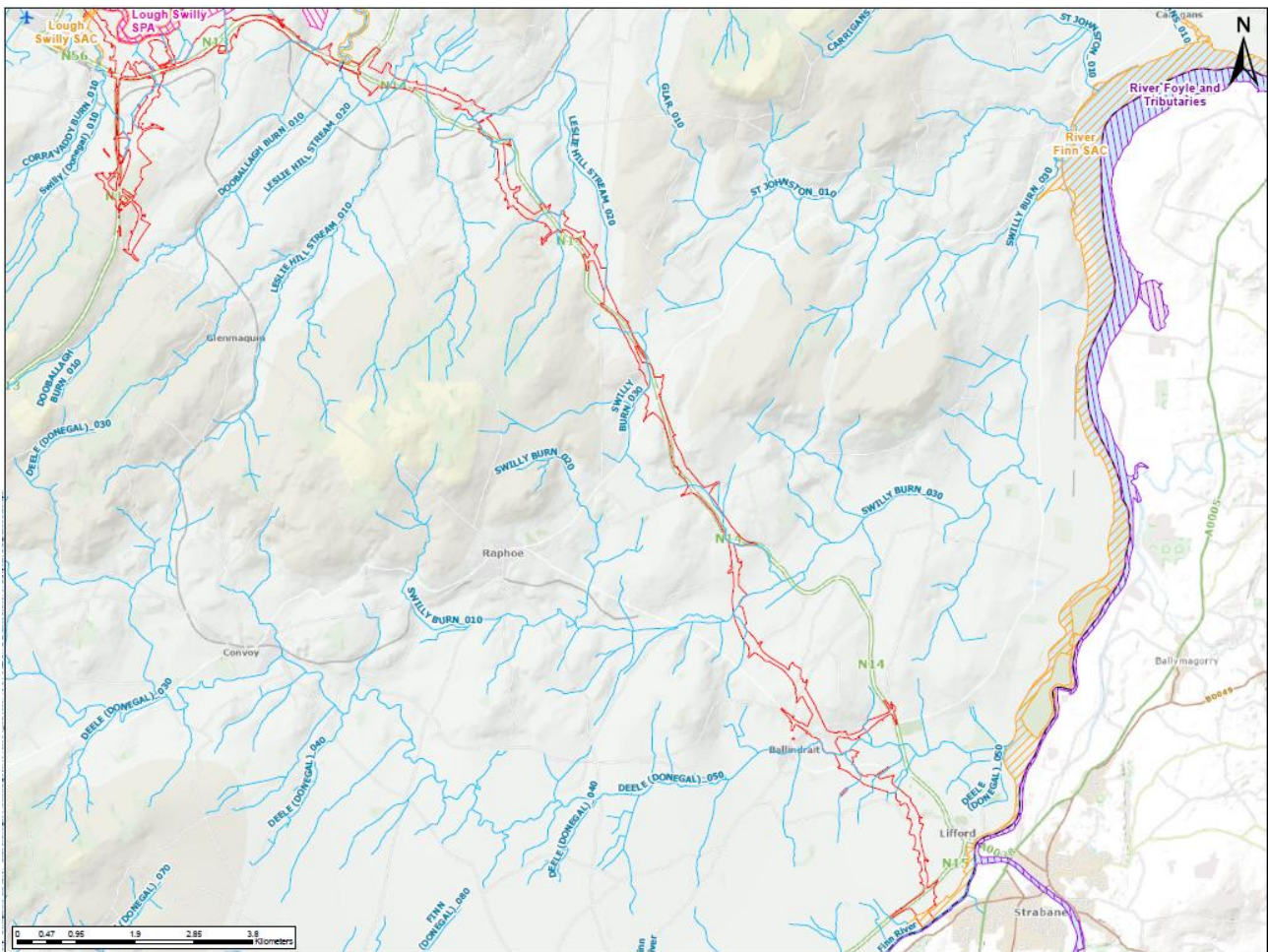


Figure 3-7: Section 3 and European Sites

### 3.4.2 Design

The Section 3 mainline route corridor is approximately 17.5 km long and extends from the Pluck Roundabout (Manorcunningham junction to the east of Letterkenny, interface with Section 2) to Lifford. Additionally, there is a cross border link with the proposed A5 WTC (N14/N15 to A5 Link), that will connect to a proposed Trunk Road T3 in Northern Ireland which in turn connects to the A5 WTC to be constructed by the Department for Infrastructure in Northern Ireland.

The interfaces with the existing road network include:

- N13 at Manorcunningham (interface with Section 2) (N13/N14 Pluck Roundabout).
- “Left-in Left-out” northbound connection to existing N14 Local Road at Drumoghill (Drumoghill Junction).
- “Left-in Left-out” southbound connection to existing N14 at Doorable (Drumoghill Junction).
- R236 / existing N14 east of Raphoe (R236 Ballinalecky Junction).
- Existing L2444 local road, to be upgraded to the R264 at Ballindrait and existing N14 at Rossgeir (Ballindrait Junction).
- Tie-in to N15.

An illustration of Section 3 including the nomenclature given to its major components is illustrated below in Figure 3-8. For more detail on Section 3 including the alignment please refer to Drawing 3 General Arrangement Drawings, sheets 1-10, in Appendix 2 and the Project Description in Appendix 1.

The Proposed Development can be summarised under the following elements. The lengths of the individual sections are approximate.

#### Roads

- 0.3 km of Type 1 Dual Carriageway (realigned and improved) extending from the proposed N13/N14 Pluck Roundabout westwards to the interface with Section 2 (Drawing 3, sheet 1 of 10).
- 17.5 km of Type 2 Divided Road Road extending from Manorcunningham (N13/N14 Pluck Roundabout) to Lifford (Lifford Junction) (Drawing 3, sheets 1 to sheet 10 of 10).
- 0.3 km of Type 2 Divided Road extending from Lifford (Lifford Junction) to the Northern Ireland Border (N14/N15 to A5 Link) (Drawing 3, sheet 10 of 10).
- 16.0 km of Type 1, Type 2 and Type 3 Single Carriageway roads being realigned as part of the Proposed Development.

#### Junctions

- N13/ N14 Pluck Roundabout.
- Drumoghill Junction (northbound left in/left out at Drumoghill and southbound left in/left out at Doorable).
- R236 Ballinalecky Junction.
- Ballindrait Junction.
- N14/N15 Lifford Junction.

## Structures

- 1 No. 287 m long, clear-span bridge over the River Finn, south of Lifford (the N14/N15 to A5 Link; two abutments, seven piers, with a clear span over the main channel). The River Finn at this location is designated as the River Finn SAC on the County Donegal (ROI) side and the River Foyle and Tributaries SAC on the County Tyrone (NI) side. Six bridge piers are located within the River Finn SAC boundary on the floodplain on the County Donegal side of the river. These piers will be located in an area of wet grassland that is not a Qualifying Interest (QI) of the SAC. To construct the bridge a temporary floating road is required within the County Donegal (ROI) side within the River Finn SAC boundary, this floating road will also be in areas of wet grassland. There are no instream works proposed within the River Finn SAC. There is no construction work within the River Foyle and Tributaries SAC and the clear span section of the bridge crosses over the SAC (See Figure 3-8 below and Appendix 2 NIS Drawings: Drawings 25-27 River Finn Crossing Section 3).
- Two river bridges.
- Seven road overbridges.
- Eight road underbridges.
- Two active travel underpasses.
- Four accommodation underpasses.
- One active travel overbridge.
- One bat house in the vicinity of Ballindrait.
- One deer / mammal underpass.
- Various culverts, gantries, and environmental noise barriers.

## Active Travel

- Provision of active travel infrastructure: this includes connections to existing infrastructure and four new Park and Share / Cycle facilities located at Pluck Roundabout, R236 Ballinalecky Junction, Ballindrait Junction and N14/N15 Lifford Junction. as illustrated in Appendix 2 NIS Drawings: Drawing 3 General Arrangement Drawings.

## Other Works

- Access roads and accommodation roads.
- Provision of attenuation ponds, flood compensatory measures, watercourse diversions and associated drainage infrastructure.
- Provision of existing utility diversions and new utility infrastructure.
- Provision of landscape planting, signage, lighting, accommodation works ancillary to the construction and operation of the Proposed Development.

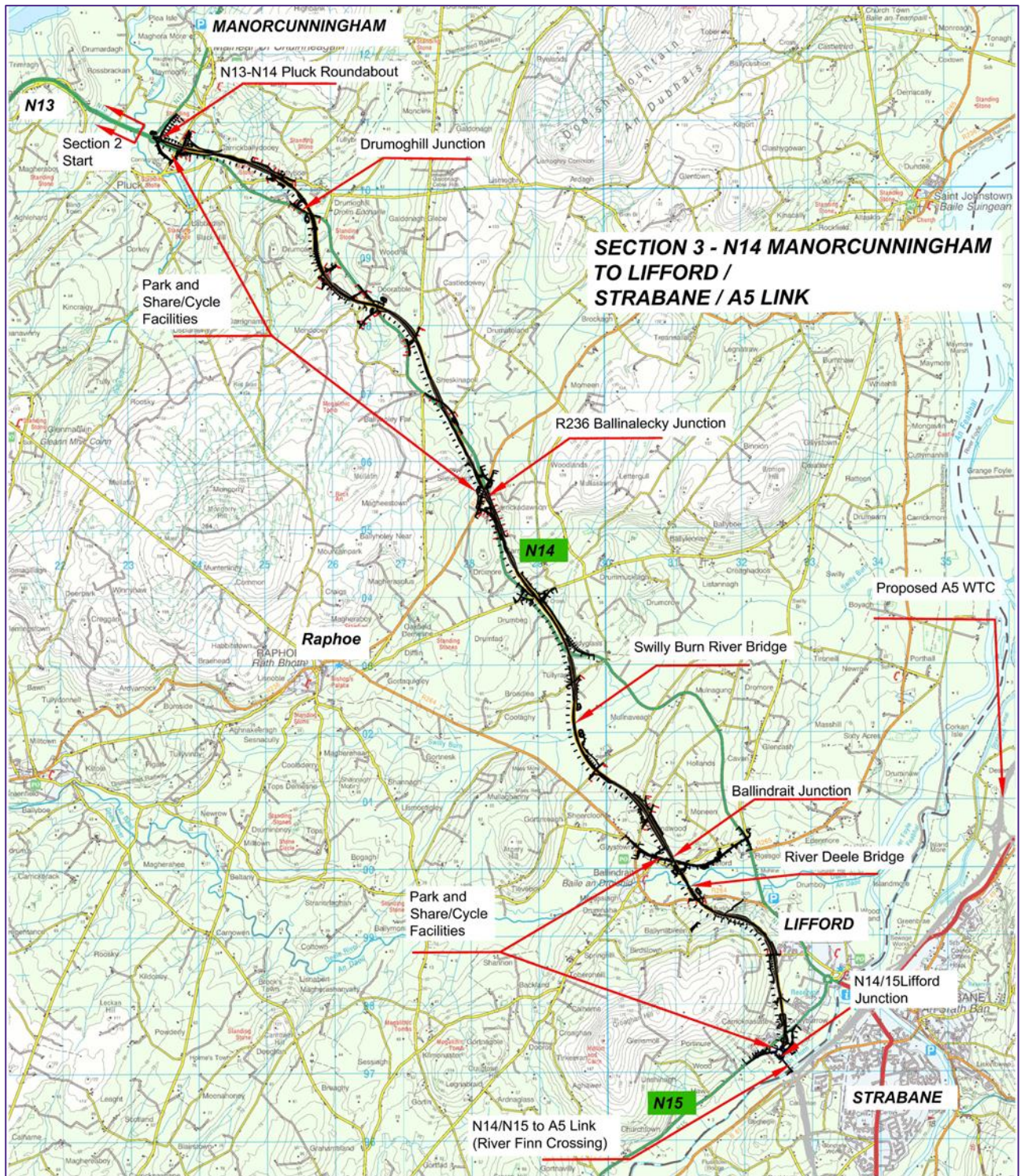


Figure 3-8: Section 3 Proposed Development

## 4 CONSULTATIONS

The following consultees were contacted to ascertain any commentary or observations in relation to the Proposed Development and its environmental assessment, including with respect to its assessment with reference to Article 6(3) of the EU Habitats Directive. The following consultation meetings were held:

- **National Parks and Wildlife Services (NPWS):** (5 February 2019, 23 October 2019, 15 September 2020, 4 February 2025, and 22 May 2025). The meetings set out the elements of the Proposed Development at the various stages of development and ecological features within the study area. In the meeting of 5 February 2019, the discussion focused on appropriate setback from riverbanks, appropriate methodologies and documents to consider, barn owl (*Tyto alba*) presence and other details to consider during the preferred route corridor. In the meeting of 23 October 2019, the discussion focussed on mitigation through avoidance, impacts of EU sites, methodologies to use, potential whooper swan sites, and recommendation to consult IFI/Loughs Agency and EPA, as well as local and national experts. The meeting of 10 September 2020, focussed on licenses for protected species, SCI bird species, non-native invasive species Asian clam, and importance of scientifically supported rationale for mitigation. The meeting on 4 February 2025 provided the NPWS with an update on the Proposed Development with further detail provided at the follow-on meeting on 22 May 2025. At this meeting the final alignment of the Proposed Development was confirmed and updates provided on the assessments that had been carried out and the approach to finalising the EIAR and the NIS. Mitigation measures were discussed and questions raised with regards to advanced planting, collision risk, lighting and monitoring of water quality.
- **Loughs Agency:** (15 November 2018, 10 July 2020, 7 August 2025, and 30 March 2026): The meetings clarified the approach taken by designers regarding structures within the catchments relevant to the Loughs Agency, i.e. the Foyle catchment system. This includes all of Section 1 and approximately two-thirds of Section 3, southeast of the townlands of Ballyholey Far/ Sheskinapoll. The 28 July 2020 meeting discussed general quality and fisheries value of affected watercourse rivers within Section 1 and southern Section 3 of the Proposed Development. Permit requirements under the Foyle Fisheries Act 1952 (as amended) Section 47 (in respect of bed material disturbance/removal for in-stream works) and Section 70 (in respect of fish removals during construction) of that Act were also discussed. Further written consultation was conducted, which resulted in Loughs Agency staff corroborating field data and proposed watercourse crossing types (bridges, culvert types) at locations where small tributaries with fisheries significance are subject to proposed culverting. The 7 August 2025 meetings clarified the approach taken by designers regarding structures within the River Finn/Foyle system and confirmed requirements for Section 47 and Section 70 permits, as above. Further, a formal data request was made to Loughs Agency who provided Foyle catchment electrofishing and consolidated salmon redd count data for the years 2020-2024 (Appendix 8: Loughs Agency Fisheries Data 2020 -2024) which underpins the baseline and impact assessments made in this NIS. The meeting of 30 March 2026, confirmed no further changes from the information presented in August 2025, and the process for applying for an Approval in Principle from the Loughs Agency.
- **Inland Fisheries Ireland (IFI)** (14 November 2018, 16 September 2020 and 4 September 2025): The meetings discussed interactions with the watercourses relevant to the IFI, i.e. the Lough Swilly catchment system. This includes all of Section 2 and approximately one-third of Section 3, northwest of the townlands of Ballyholey Far/ Sheskinapoll. This includes the crossing of the River Swilly in Section 2 (which is estuarine), attenuation ponds and hydrocarbon interceptors, culvert designs and Asian clam in the Swilly Burn (Section 3).

All proposed watercourse structures have been designed in accordance with Loughs Agency and IFI Guidelines (Loughs Agency, 2011; IFI, 2016) for fisheries protection during development works. Details of all proposed Loughs Agency watercourse crossing locations, crossing and culvert types and specifications (height, width, length, slope) have been submitted to the Loughs Agency as part of consultation. The Loughs Agency has agreed in principle with the design approach applied as to watercourse crossing type with respect to fisheries value of the watercourse in question, i.e., bridge or culvert type (box, pipe). Highly sensitive fisheries waters, including SAC watercourses, are bridged, while pipe culverts are only used on channels (drains) with low or no fisheries sensitivity.

The structures and works required within the Foyle catchment system, including the construction of bridges and culverts, any fish removals during construction and operation phase fish passage considerations, have

been fully considered and assessed throughout this NIS, and as set out in Section 6.6 below, and detailed in Appendix 11 - Construction Phase Impact Assessment (Culverts) and Appendix 12 – Operational Phase Impact Assessment (Culverts). The full range of potential construction methodologies that could be employed by the appointed contractor (which methodologies will be selected at the detailed design stage) have been assessed and a comprehensive suite of mitigation measures as set out in Section 7, below, addressing all potential construction methodologies, has been applied.

Further, the Loughs Agency have provided a copy of the usual conditions attached to Section 47 and Section 70 permits, and those conditions have been incorporated into the mitigation measures set out in Chapter 7 below, so as to ensure that the standard conditions attached to such Loughs Agency permits are fully reflected and incorporated into the Proposed Development.

It was agreed between Donegal County Council and the Loughs Agency that Donegal County Council will apply to the Loughs Agency for an “approval in principle” for the works to watercourses within the remit of the Loughs Agency which are proposed as part of the Proposed Development. That application has been submitted to the Loughs Agency, and when the approval in principle is issued Donegal County Council will place it on <https://www.donegal-ten-t.ie/>. Permits under sections 47 and 70 of the Foyle Fisheries Act 1952 (as amended) will be obtained from the Loughs Agency in the usual way.

All of the potential construction methodologies that will be employed for in-stream works have been considered and assessed in this NIS, and detailed mitigation measures are set out that address any potential impacts on watercourses (Section 6.6), which includes all of the typical conditions generally attached to Loughs Agency Section 47/70 permits. In those circumstances, notwithstanding that formal permits will be required from the Loughs Agency in order to ensure that the carrying out of works to watercourses as part of the Proposed Development will not constitute an offence under the Foyle Fisheries Act 1952 (as amended), the authors of this chapter of the NIS are satisfied that all potential impacts to watercourses have been fully considered and assessed as part of this NIS.

Details regarding consultations are provided in Appendix 3: Consultations.

## 5 ECOLOGICAL SURVEYS TO INFORM NIS

In order to inform the NIS, the following project-specific ecology surveys were completed. The methodology and findings of those surveys set out within this document and a full account of all surveys to inform the environmental assessment of the Proposed Development overall are included in Appendix C9A.01 of the EIAR for the Proposed Development.

### 5.1 Ecology Survey Methodologies

#### 5.1.1 Desk Study

A desk study was completed to identify relevant information from published or publicly accessible sources regarding the European Sites brought forward from the AA Screening and into this NIS. This included information regarding the European Sites, their QIs/SCIs, Conservation Objectives etc. The exercise collated information available from the following sources summarised in Table 5.1. The latest update of the desktop study baseline was carried out in 2025 with relevant information extracted from these sources referenced within the NIS.

**Table 5.1: Summary of Desktop Resources**

Title	Publication Year	Author/Source
<i>Map of Irish Wetlands</i>	2025	<i>Wetlands of Ireland</i> <sup>4</sup>
<i>Fish monitoring data for the Water Framework Directive (WFD)</i>	2025	<i>Inland Fisheries Ireland</i> <sup>5</sup>
<i>Current and Historical mapping</i>	2025	<i>Tailte Éireann</i> <sup>6</sup>
<i>Bedrock, subsoil and groundwater data and mapping</i>	2025	<i>Geological Survey of Ireland</i> <sup>7</sup>
<i>Surface and ground water quality status, and river catchment boundaries</i>	2025	<i>EPA</i> <sup>8</sup>
<i>NPWS designated areas spatial data</i>	2025	<i>National Parks and Wildlife Services (NPWS)</i> <sup>9</sup>
<i>NIEA designated areas spatial data</i>	2025	<i>Department of Agriculture, Environment and Rural Affairs (DAERA)</i> <sup>10</sup>
<i>Distribution records for protected species and habitats (including suitability index for bats) held online by the National Biodiversity Data Centre (NBDC)<sup>11</sup>, NPWS, UCD, and the Heritage Council.</i>	2011-2025	NBDC NPWS Heritage Council Lundy et al. (2011).

<sup>4</sup> Available at <http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands--/>. Accessed October 2025.

<sup>5</sup> Available at <http://wfdfish.ie/>. Accessed October 2025.

<sup>6</sup> Available at <https://www.geohive.ie/>. Accessed October 2025.

<sup>7</sup> Available at <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>. Accessed October 2025.

<sup>8</sup> Available at <https://gis.epa.ie/EPAMaps/>. Accessed October 2025.

<sup>9</sup> Available at <https://www.npws.ie/maps-and-data/designated-site-data/sac-and-spa-datasheets-downloads>. Accessed November 2025.

<sup>10</sup> Available at <https://gis.daera-ni.gov.uk/arcgis/apps/experiencebuilder/experience/?id=7ed27d1df5c3451da04b18057b6d48bf>. Accessed November 2025

<sup>11</sup> Accessed October 2025. The records for 10 km grid squares that the Proposed Development overlaps were consulted to investigate the likelihood of the presence of rare, protected, and threatened species within the CPO boundary of such species (mammals, fish, invertebrates, amphibians, birds, reptiles, plants, etc.). The following records were excluded from this assessment:

- Plant records greater than 25 years old;
- Mobile animal species records greater than 10 years old (bird species greater than 15 years old);
- Records of species identified as Extinct in the Wild (EW), Regionally Extinct (RE), or Extinct (EX) in national red lists and records of birds;

Title	Publication Year	Author/Source
Checklists of protected and threatened species in Ireland	2019	Nelson <i>et al.</i> (2019)
Red Lists	2006, 2009, 2010, 2011, 2012, 2016, 2019, 2020, 2021	Fitzpatrick <i>et al.</i> (2006); Marnell <i>et al.</i> (2009); Regan <i>et al.</i> (2010); King <i>et al.</i> (2011); Clarke <i>et al.</i> (2016); Wyse Jackson <i>et al.</i> (2016); Marnell <i>et al.</i> (2019); Gilbert <i>et al.</i> (2021).
Status of EU Protected Habitats and Species in Ireland, Volume 1, 2, and 3	2025	NPWS (2025a, b, c)
Interpretation Manual of European Union Habitats	2013	European Commission <sup>12</sup>
Ireland's 4 <sup>th</sup> National Biodiversity Action Plan 2023-2030	2024	Department of Housing, Local Government and Heritage (DHLGH)
Donegal Development Plan 2024-2030	2024	Donegal County Council (DCC, 2024a) <sup>13</sup>
Donegal County Council Climate Action Plan 2024-2029	2024	Donegal County Council (DCC, 2024b) <sup>14</sup>
County Donegal Heritage Plan (2023-2030)	2024	Donegal County Council (DCC, 2024c) <sup>15</sup>
Ramsar Sites	2023	Irish Ramsar Wetlands Committee <sup>16</sup>
Protected Sites in Ireland (National Heritage Areas (NHA), proposed National Heritage Areas (pNHA), Nature reserves, wildfowl sanctuaries, and OSPAR sites)	2019	NPWS <sup>17</sup>

## 5.1.2 Field Survey

In order to establish the baseline conditions for the existing environment, relevant multidisciplinary and taxon-specific surveys were undertaken between 2017 and 2025 during optimum seasons for the habitats and species in question. Mindful that ecological baselines are dynamic, a number of the surveys were completed to ensure that an up-to-date baseline was available at various stages of the evolution of the Proposed Development, including with respect to its environmental assessment. This is consistent with CIEEM's Advice Note<sup>18</sup>.

The surveys are summarised in the subsections below, and the findings are provided in Section 4.2.

- Preliminary ecology surveys to inform Constraints Study - December 2017 (RPS and EirEco).
- Ecological surveys to inform Option Selection - October to March 2017/2018, June and July 2018 (RPS and EirEco).
- Otter surveys - December 2017, July 2018, December 2019, February and March 2020, August 2020, May 2021, July - August 2023 and September - October 2025 (RPS, EirEco and Nelson Ecology).

<sup>12</sup> Accessed at [Document - Interpretation Manual of European Union Habitats, version EUR 27](#). Accessed April 2025.

<sup>13</sup> Available at <https://www.donegaldevplan.ie/>. Accessed in April 2025.

<sup>14</sup> Available at <https://www.donegalcoco.ie/media/s2cpk5y5/climate-action-plan-english-web-version-v2-1.pdf>. Accessed in April 2025.

<sup>15</sup> Available at <https://www.donegalculture.ie/media/4wxnwcur/gh61-county-donegal-heritage-plan-2023-2030-final-1.pdf>. Accessed in October 2025.

<sup>16</sup> Available <https://www.irishwetlands.ie/irish-ramsar-sites/> (2019).

<sup>17</sup> Available at <https://www.npws.ie/protected-sites>. Accessed October 2025.

<sup>18</sup> <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

- Habitat surveys consisting of:
  - Section 1 and 2 - December 2017; July and August 2018; July and August 2019; August 2020; May and August 2021; and August and September 2022; June-July 2023 and August 2025.
  - Section 3 - July 2019, August 2021, August 2023 and September 2025. (RPS and EirEco).
- During the most recent habitat survey in August 2025 and September 2025, habitats within and immediately adjacent to the Proposed Development boundary were resurveyed and/or validated with reference to CIEEM Advice Note<sup>19</sup>; particularly with respect to any material changes compared to earlier survey findings.
- Aquatic Surveys comprising habitat description, fisheries habitat assessment and Biological Water Quality sampling; July 2018, June 2020, September 2024 and September 2025 (Lauren Williams Ecology and EirEco).
- Winter bird surveys consisting of:
  - Section 1 - Winter 2017/ 2018; with survey baseline validity verification check completed during September/October 2025 (RPS).
  - Section 2 – Winters of 2017/ 2018, 2018/ 2019, 2019/2020, 2021, 2022/2023, and September – January 2026 (RPS).
  - Section 3 – Winters of 2018/ 2019, 2019/ 2020, and 2020/21; and October 2025- January 2026 (EirEco, Kendrew Colhoun (Ornithologist) & RPS).
- Breeding bird surveys: May - June 2020 and May and June 2023.
- Swilly estuary habitat characterisation and follow-up walkovers - July 2018, June 2020, September 2024 (Lauren Williams Ecology).
- Invasive alien plant species (IAPS) surveys:
  - Section 1 and 2 - July and September 2018; July and August 2019; August 2020; October 2021, July 2023 and August to October 2025 (RPS and Murphy Geospatial).
  - Section 3 - July 2019, August 2021, October 2021, August 2023 and September 2025. (EirEco, RPS and Murphy Geospatial).

A comprehensive ecological evidence base has been collated and, where necessary, updated over a period of c. 8 years to inform both the evolution of the design and environmental assessment of the Proposed Development. The evidence base has been collated with reference to best practice methodological guidance.

Seasonal factors that affect habitat characteristics or species' distribution patterns were considered when conducting the surveys as was the potential of the geographical area encompassing, and extending away from, the Proposed Development to support certain types of habitats and/or populations.

### 5.1.3 Habitat Surveys

The habitat mapping, categorisation and descriptions had regard to the national standards, as outlined in Smith *et al.* (2011) and Fossitt (2000). The Fossitt classification is a standard method for identifying, describing and classifying habitats; including identifying affinities with Annex 1 habitats.

<sup>19</sup> <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Further publications were used to supplement and refine Fossitt (2000) classifications included, *inter alia*, classification schemes derived from Perrin *et al.* (2008) and O'Neill *et al.* (2013). The classification of semi-natural woodlands and scrub took cognisance of categories and criteria outlined in Native Woodland Scheme publication Cross *et al.* (2010). The relevant NPWS Irish Wildlife Manuals for National Survey and Conservation Assessment Guidelines for woodlands, grasslands and upland habitats were also consulted. Each of these habitat classification systems was used to point to affiliations with annexed habitat and, if/where an affiliation was identified, further detailed survey was conducted to establish if the habitat pertained to a relevant annexed type. Where they were encountered, the presence and distribution of invasive species listed in the Third Schedule of the European Union (Birds and Natural Habitats) Regulations 2011, as amended, were also recorded.

#### 5.1.4 Invasive Alien Plant Species

During the habitat surveys detailed above, any incidental evidence of Invasive Alien Plant Species (IAPS) and Invasive Alien Animal Species (IAAS) was recorded<sup>20</sup>. In addition, a dedicated IAPS survey was undertaken between 8 and 15 October 2021 by a qualified ecologist in conjunction with a qualified topographical surveyor with reference to TII guidance (TII, 2020a, 2020b). The baseline information was checked for any material changes most recently during 2025 and any additional locations mapped. The approximate perimeter of each IAPS infestation was identified and mapped. Where IAPS were found, the species, exact location, number of individuals, and approximate extent was recorded.

#### 5.1.5 Otter

Based on the desk study information, QI species otter is recorded from within the Proposed Development boundary and is likely to be active on all suitable watercourses relevant to the Proposed Development and its assessment. In addition, multi season surveys for evidence of otter activity were undertaken between 2017 and 2025. The survey methodology (based on Lenton *et al.* (1980), Bailey & Rochford (2006) and Reid *et al.* (2013)) consisted of surveying the riverbanks 600 m upstream and downstream of proposed water crossing locations. There was a focus on the detection of activity through identifying evidence of otter activity such as spraint, tracks, and searches for slides, couches or holts along the survey corridor at each location.

Camera trapping was undertaken in Sections 1 and 2 to supplement findings from the walkover surveys. Camera traps were deployed at three possible holt locations: one in Section 1 and two in Section 2 (Table 5.2). Footage was recorded under NPWS license [137/2023]. No holts were recorded as potentially being active in Section 3 and therefore camera trap surveys were not conducted.

**Table 5.2: Trail Camera Number, Location, Operational Period and Duration for Which Cameras Were Deployed**

Camera ID	Section	ITM (X)	ITM (Y)	Operational Period	Time (Days)
TC1	2	619127	911374	03/08/2023 – 18/08/2023	16
TC2	2	618988	911647	02/08/2023 – 10/08/2023	9
TC3	1	613073	895229	06/08/2023 – 18/08/2023	13

In Section 2, a trail camera (TC1) was erected on the western bank of the River Swilly within the townland Ballyrairie and a second trail camera (TC2) was set up along a drainage ditch adjacent to the River Swilly at Milk Isle. In Section 1, the camera was deployed at a potential holt on the bank of the River Finn within the townland of Drumboe Lower. The camera traps were set up to confirm if the possible holts were actively in use by otter.

<sup>20</sup> With cognisance of the species listed in the Third Schedule to the European Communities (Birds and Natural Habitats) Regulations, as amended, and the species classified as high or medium impact by Kelly *et al.* (2013).

### 5.1.6 Breeding Bird Surveys

The Lough Swilly SPA is designated for 3 species with regards to their breeding populations, black-headed gull (*Chroicocephalus ridibundus*), Sandwich Tern, (*Sterna sandvicensis*) and Common Tern (*Sterna hirundo*). The breeding bird surveys detailed below were carried out with cognisance of these facts and the presence of these species or likelihood of these species being present was a key focus of the surveys being undertaken.

The Lough Foyle SPAs, within the Republic of Ireland and Northern Ireland respectively, are not designated for any breeding populations of SCI bird species.

A comprehensive breeding bird survey has been undertaken with reference to the guidance set out in Bibby et al. (2000) and the Breeding Bird Survey (BBS) methodology as described by the British Trust for Ornithology (BTO). These surveys identified a typical range of species that would be associated with agricultural land and urban edge habitats. No notable populations of one or more species or a notable assemblage of breeding bird species was identified as a result of the breeding bird surveys. The habitats present within the CPO boundary have been regularly surveyed and updated with the final survey undertaken in 2025 to verify that the habitats had not significantly changed. The only changes to habitat value were noted in a negative trend, with further intensification of management or habitat loss. Given that the habitats have not changed significantly and in a negative assessment of value the breeding bird assemblage, and potential for notable populations will not have changed over time and the results of the breeding bird surveys can be regarded as comprehensive and valid for the assessment of value.

#### 2020 Breeding Bird Survey

Given the linear nature of the Proposed Development, predetermined transects, focused on the footprint of the Proposed Development, were used to complete the breeding bird survey with reference to the guidance set out in Bibby *et al.* (2000). Transects aim to provide an indication of the assemblage of breeding birds within the survey area, but it is recognised that the transects completed during 2020 do not cover the entirety of the Proposed Development footprint.

Line transects involve surveying the predetermined routes and recording breeding bird species seen or heard on either side (up to approximately 100 m) of the selected transect. In Sections 1, 2, and 3 the locations and routing of the transects were informed by the findings of the habitat surveys, targeting areas which potentially had greater opportunity for the assemblage of breeding birds. The transect lengths and segments were selected according to the particular habitat composition and homogeneity along a given transect. Along some localised sections, where vegetation cover was very dense (such as that associated with thicket woodland or scrub), point counts were completed to allow birds to settle and to allow recording to take place. The species, their numbers, and their behaviour were recorded and mapped.

Bird counts at any transect were undertaken during two visits, whereby each transect was walked once on each visit. The first visit was carried out in the early part of the breeding season (late May) and the second visit was carried out four weeks later (late June). This reflects the abundance of residents and early migrants which tend to be more easily detected during the first visit, and late migrants which are more abundant during the second visit. The surveys were carried out between 05:30 hrs and 11:00 hrs to coincide with maximum bird activity. Most of the identified bird species displayed the behavioural criteria necessary to suggest possible or probable breeding or to confirm breeding. Non-breeders were also recorded.

Within Sections 1, 2, and 3, eighteen, seven, and eight transects were completed, respectively. Each transect was surveyed once in May and once in June 2020, with the timings, locations, and durations of each survey set out in Appendix C9A.01 of the EIAR and mapped in Appendix 2 NIS Drawings: Drawings 6 and 7 Breeding Bird Surveys.

#### 2023 Breeding Bird Survey

Further breeding bird surveys along pre-defined transects were undertaken between late May and late June 2023 for Sections 1 and 2. These surveys utilised a generic breeding bird survey methodology as has been

developed and employed for the United Kingdom (UK) Breeding Bird Survey<sup>21</sup> and the Irish Countryside Bird Survey (CBS)<sup>22</sup> and as fully described by Bird Survey Guidelines<sup>23</sup>.

Transects were pre-defined by RPS ecologists (see Appendix 2 NIS Drawings: Drawings 6 and 7 Breeding Bird Surveys) and walked slowly in the early morning period, recording all species on or adjacent to the transect by sight/sound, searching particular features/habitats of interest. Windy (>F5), wet (constant precipitation), or low visibility conditions were avoided, as this might have negatively influenced detectability. The location, number, and activity of all species encountered was recorded using standard BTO species codes and CBS activity codes. The 2023 breeding bird surveys in Sections 1 and 2 are further detailed in Appendix C9A.01 of the EIAR.

### 5.1.7 Over-Wintering Surveys

Section 1 does not overlap with any European Site, however the potential of land intersected by Section 1 to support an ex-situ function for SCI species of European Sites was investigated through a full wintering bird survey completed during the Winter 2018/19. Based on the findings of that survey, no subsequent seasons of wintering bird surveys were completed. However, a verification survey was completed during September 2025 to January 2026 to identify any material changes that could have invalidated the 2018/19 survey baseline. No such material changes were identified.

Given the proximity of Section 2 and 3 to Lough Swilly SPA (004075) (see Appendix 2 NIS Drawings: Drawing 5 European Designated Sites), winter surveys were conducted annually between 2017 to 2023, inclusive, with verification surveys undertaken in September 2025 to January 2026, within and adjacent to the footprint of Sections 2 and 3 of the Proposed Development.

The aim of the 2017-2023 surveys was to ascertain the levels of activity of the populations of SCI species for which SPAs are designated as relevant for the Proposed Development and its environmental assessment. The aim of the verification survey completed during September 2025 to January 2026 was to determine whether there were material changes since 2023 which could have resulted in material changes to the over-wintering bird populations since the 2023 survey was completed.

The survey design was cognisant of observations recorded during consultations with NPWS on 5 February 2019. During the meeting it was recommended the following bird surveys are to be carried out during high/low tide, walkovers, transects and vantage points (VP). NPWS advised that there should be a standardised VPs watch incorporated into the survey methodology for the proposed Swilly crossing point at high and low tide. NPWS representatives noted, specifically with regard to the River Swilly in Section 2, that geese and swans would be the most significant bird constraints to be considered. Counts of 30 whooper swan (*Cygnus cygnus*), for a location approximately 200-300 m north of the route corridor, were made available by NPWS and a recommendation suggesting that surveys (standardised methodology) should be undertaken to provide further detail on the locations and movement through the area by the species and to determine whether and to what extent members of populations for which the Lough Foyle and/ or Lough Swilly SPA are designated utilise the areas surveyed.

#### 5.1.7.1 Section 1

The Proposed Development boundary of Section 1 does not overlap with any designated SPA. However, one season of wintering bird surveys was carried out during October to March 2018/19. The survey consisted of a Vantage Point (VP) survey at three locations as summarised in Table 5.3 and mapped in Appendix 2 NIS Drawings: Drawing 8 Section 1 2017-2018 Wintering Bird Survey Vantage Points. The aim of the survey was to ascertain the level of usage within the vicinity of each location and their potential of land within Section 1 to support an ex-situ function of over-wintering SCI species of European Sites.

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<sup>21</sup> Available at <https://www.bto.org/our-science/projects/breeding-bird-survey/research-conservation/methodology-and-survey-design>. Accessed December 2025.

<sup>22</sup> Available at [https://birdwatchireland.ie/app/uploads/2019/03/CBS\\_Manual\\_June2012\\_web\\_resolution.pdf](https://birdwatchireland.ie/app/uploads/2019/03/CBS_Manual_June2012_web_resolution.pdf). Accessed December 2025.

<sup>23</sup> Available at <https://birdsurveyguidelines.org/methods/survey-method/>. Accessed December 2025.

The VP survey was completed on six separate dates (22/10/2018, 20/11/2018, 11/12/2018, 30/01/2019, 28/02/2019, and 28/03/2019) for each of the three VP areas. Due to the lack of wintering bird activity associated with SCI species, the lack of suitable habitat to support significant numbers of wintering birds (including SCI species) and no receptors, such as SPAs, within or adjacent to Section 1, no further seasons of wintering bird surveys were completed for Section 1. As documented, a verification check was completed during 2025 to confirm that there were no material changes which could invalidate the reasoning for not completing further wintering bird surveys for Section 1. No such material changes were identified.

**Table 5.3: 2018/2019 Section 1 Vantage Point Locations**

VP	Location	Coordinates (ITM)
VP1	Dooish	610651 894837
VP2	Backlees	614629 897385
VP3	Lough Alaán	615741 895831

## 5.1.7.2 Section 2

### 5.1.7.2.1 2017 to 2020 Surveys

The Section 2 survey design used NPWS's Low Tide Waterbird Survey guidance (Lewis *et al.*, 2014); in particular, the recommendation that no count was undertaken within ten days of a previous count. Surveys also adopted the standard line transect approach (Bibby *et al.*, 2000) to document any birds present within field systems adjacent to the estuarine habitat.

Systematic surveys of waterbirds in the area of the Swilly Estuary and its hinterland were undertaken over three winters (Monthly site visits; October to March - 2017/18, 2018/19 and 2019/2020) to assess the significance of the site in the context of Lough Swilly and over a broader area extending beyond the area of the Proposed Development. On each occasion, the location and number of birds seen feeding in fields from suitable VPs (see Appendix 2 NIS Drawings: Drawing 9 Section 2 2017-2020 Wintering Bird Study Area) were recorded to ascertain the level of usage within these areas and their importance to the bird populations associated with nearby areas of Lough Swilly SPA.

The surveys were completed on 11 separate dates for the four VP areas (VP2.1 to VP2.4), three transects, and the Airfield/ Farsetmore (VP2.9) and Manorcunningham/Big Isle (VP2.10) areas, as outlined in Table 5.4 and mapped in Appendix 2 NIS Drawings: Drawing 9 Section 2 2017-2020 Wintering Bird Study Area. Surveys were undertaken around the high-water period and on days when this was close to midday to maximise daylight observation periods in the three-hour period before and after high-water. Surveys were conducted in six one-hour blocks either side of high water, during which all areas were visited by driving road transects and viewing the areas from the vantage points (used in 2018/19 and 2019/20). Surveys at low tide were scheduled to coincide with low tide times between 9.30 am and 11.00 am, to allow the surveyor to attend the site at least an hour before low tide and thereafter undertake the VP and line transect surveys of the estuary/tidal channel throughout the low tide cycle. Surveys of geese and swans feeding at the Airfield/ Farsetmore and Big Isle areas at both dusk and dawn were conducted from VPs prior to and following the estuary surveys.

**Table 5.4: Section 2 2017 to 2020 Vantage Point and Transect Locations**

VP	Coordinates (ITM)	Length
VP2.1 (Golf Course)	620822 912729	NA
VP2.2 (Pontoon Area)	620275 912430	NA
VP2.2 (Supplemental)	620324 911928	NA
VP2.3	619976 911429	NA
VP2.4 (Bridge Crossing)	619391 911817	NA
VP2.9 (Goose Site)	621588 911630	NA
VP2.10 (Manorcunningham/Big Isle)	624198 912367	NA

VP	Coordinates (ITM)	Length
T1	619705 911276 - 619156 911837	1037 m
T2	618973 911319 - 618315 911224	1077 m
T3	621744 910861 - 621504 909436	1446 m

The number and behaviour of all waterbirds using the terrestrial sites of interest (especially in the vicinity of the Wastewater Treatment Plant (WWTP) (see Appendix 2 NIS Drawings: Drawing 9 Section 2 2017-2020 Wintering Bird Study Area) were recorded, classifying behaviour as foraging or non-foraging. The activities which may have had a bearing on the presence of birds were also recorded (e.g. shooting, human disturbance, farming activities, etc.) to gain a better understanding of the relative importance of the area.

Surveys initially followed the methodology outlined above. However, after a meeting with NPWS, it was agreed that the February/March 2019 counts should follow a standardised 1-hour VP approach. In the preceding surveys before this date, observations (approximately 15 to 30 minutes) were carried out to determine snapshots of site use, following completion of line transects. For the 2019/2020 season, it was decided to conduct dawn and dusk counts along with this 1-hour VP at high and low tide to determine bird usages of the crossing footprint. Additionally, following the 2018/2019 season, Line Transect 3 was no longer utilised as part of the survey protocol following the selection of the emerging preferred corridor which resulted in Transect 3 becoming obsolete.

The survey design was cognisant of observations recorded during consultations with NPWS on 5 February 2019. During the meeting it was recommended that the following bird surveys be carried out during high and low tide: walkovers, transects, and VPs. NPWS advised that there should be a standardised VPs watch incorporated into the survey methodology for the proposed Swilly crossing point at high and low tide. NPWS representatives noted, specifically with regard to the River Swilly in Section 2, that geese and swans would be the most significant bird constraints to be considered. Counts of 30 whooper swans (*Cygnus cygnus*), for a location approximately 200 m to 300 m north of the route corridor, were made available by NPWS. It was recommended that surveys (standardised methodology) should be undertaken to provide further detail on the locations and movement through the area by whooper swan and to determine whether, and to what extent, members of populations for which the Lough Foyle and/or Lough Swilly SPA are designated utilise the areas surveyed.

#### 5.1.7.2.2 2020/2021 Survey

Surveys were undertaken to investigate the potential usage of terrestrial sites within and adjacent to the Proposed Development corridor at the proposed Swilly crossing. Of particular interest was the degree to which terrestrial sites were being used by SCI species, in particular Eurasian curlew (*Numenius arquata*) and other waterbirds including whooper swan (*Cygnus cygnus*), geese (*Anser* spp. and *Branta* spp.), oystercatcher (*Haematopus ostralegus*), and redshank (*Tringa tetanus*). The VP locations are outlined in Table 5.5 and the surveyed areas are mapped in Appendix 2 NIS Drawings: Drawing 10 Section 2 2020-2021 Wintering Bird Study Area – encompassing the primary terrestrial foraging/resting opportunities by the range of SCI waterbirds in the vicinity of Section 2.

**Table 5.5: Section 2 2020/2021 Vantage Point Locations**

VP	Coordinates (ITM)
VP2.5	619621 911882
VP2.6	619380 911563
VP2.7	619793 911764
VP2.8	620176 911997
VP2.9 (Goose site)	621588 911630
VP2.9 (backup goose site)	620635 911757

Surveys at low tide were scheduled to coincide with low tide times occurring between 9.30 and 11.00 am, to allow the surveyor to attend the site at least an hour before low tide, and thereafter, undertake the VP and line transect surveys of the estuary/tidal channel throughout the low tide cycle. Surveys of geese and swans feeding at Airfield and Big Isle at both dusk and dawn were conducted from VPs prior to and following the estuary surveys.

### 5.1.7.2.3 2022/2023 Survey

To assess the use of the Proposed Development boundary by wintering birds, a combination of vantage point surveys and windscreen surveys were carried out over the wintering season between 2022/2023. This was to further understand the usage of the fields adjacent to the Proposed Development to better understand what areas hold the most function for the SCI species.

### Vantage Point Surveys

Because there is no guidance on VP survey protocols for the Republic of Ireland, guidance developed by Scottish Natural Heritage (SNH) for onshore wind farm ornithology surveys was followed (SNH, 2017). The protocol followed during surveys was a systematic 180° scan (including overhead) for birds in flight. Surveys were not undertaken in unfavourable weather conditions. The VP locations are outlined in Table 5.6 and the Proposed Development boundary is mapped in Appendix 2 NIS Drawings: Drawing 11 Section 2 2022-2023 Wintering Bird Study Area.

**Table 5.6: Section 2 2022/2023 Vantage Point Locations**

VP	Coordinates (ITM)
VP2.9 (Goose site)	621588 911630
VP2.10 (Manorcunningham/Big Isle)	624198 912367

The primary target species were whooper swan, mute swan (*Cygnus olar*), and all species of goose. However, secondary target species were noted, which included waders, ducks, cormorants, herons, and all birds of prey.

Data collected for each primary target observation included:

- Time of observation
- Species
- Flock size
- Details of flights were recorded to determine if the species flew towards or in the vicinity of the Proposed Development

From November to March, inclusive, each location was visited twice monthly, at low and high tide. All species encountered during the surveys were mapped and coded using standard BTO species codes.

### Windscreen Survey

The methodology employed was based on the BTO's Wetland Bird Survey (WeBS) Core Counts which use the so-called 'look-see' method (Bibby *et al.*, 2000), whereby the observer, familiar with the species involved, surveys the whole of a predefined area. The survey area was the northern portion of Section 2, excluding the most southern portion south of the townland of Lurgybrack, given that the habitats that were located in this area and the topography of the land did not offer opportunities for ex-situ foraging or roosting for SCI for the European designated sites.

Counts were made via a windscreen survey, driving slowly on all roads within the survey area and stopping to count target species when identified. Numbers of all waterbird species, as defined by Wetlands International (Rose and Scott, 1997), were recorded. Target species for the purposes of this survey were

swans and geese. However, all identifiable birds of prey, gulls, divers, grebes, cormorants, herons, ducks, rails, cranes, waders, and kingfisher were also noted.

Data collected for each primary target observation included:

- Date of observation
- Species
- Flock size

The entire survey area was driven through once monthly. All species encountered during the surveys were mapped and coded using standard BTO species codes.

#### 5.1.7.2.4 2025/2026 Survey

Surveys were undertaken in September 2025 to January 2026 to verify, compared to earlier surveys, the potential usage of terrestrial sites within and adjacent to the Proposed Development corridor in and around the Swilly Estuary and especially the Swilly crossing. Of particular interest was the degree to which terrestrial sites were being used by SCI species, in particular Eurasian curlew, whooper swan, geese, duck and other water birds. Aside from SCI species all identifiable birds of prey, gulls, divers, grebes, cormorants, herons, rails, waders, and kingfisher were also noted.

To assess the use of the study area by wintering birds from September 2025 to January 2026, a combination of vantage point surveys and windscreen surveys were carried out. This was to further supplement the information gained from earlier surveys and to identify any material difference to either habitat usage or species distribution compared to the suite of earlier surveys completed (see Appendix 2 NIS Drawings: Drawing 12 Section 2 2025-2026 Wintering Bird Study Area).

##### 5.1.7.2.4.1 Vantage Point Surveys (Wintering Birds)

Vantage point surveys, outlined in Table 5.7, were carried out following NatureScot 2017 (formerly SNH 2017) guidance. Four vantage point survey locations were selected to provide adequate survey coverage of the areas where the Proposed Development closely approached the Lough Swilly SPA. The protocol followed during surveys was a systematic 180° scan from each selected vantage point location. Surveys were not undertaken in unfavourable weather conditions.

Each vantage point was surveyed for three hours twice per month, once at high tide, and once at low tide. Surveys were timed so that the lowest or highest point of the tide would occur at midpoint of the vantage point survey. Whenever possible, surveys were conducted starting no more than 30 minutes before sunrise and finishing no more than 30 minutes after sunset.

All target species observations were recorded and mapped precisely. Data collected for target species observations included:

- Date and time of observation
- Species
- Flock size
- Activities of note, e.g., foraging, roosting, travelling
- The height above the ground at which birds were flying (where applicable).
- Location, weather and tidal conditions at the time of the observation.

Surveys were undertaken throughout the winter season, the survey scope and timing was considered entirely satisfactory.

**Table 5.7: Section 2 Vantage Point Locations**

VP	Coordinates (ITM)
VP1	619007 911806
VP2	621164 911707
VP3	623087 910883
VP4	619846 911353

#### 5.1.7.2.4.2 Windscreen Survey

The methodology employed was based on the BTO's Wetland Bird Survey (WeBS) Core Counts which use the so-called 'look-see' method (Bibby *et al.*, 2000), whereby the observer, familiar with the species involved, surveys the whole of a predefined area. The survey area was the northern portion of Section 2, excluding the most southern portion south of the townland of Lurgybrack.

Counts were made via a windscreen survey, driving slowly on all roads within the survey area and stopping to count target species when identified. Numbers of all waterbird species, as defined by Wetlands International (Rose and Scott, 1997), were recorded. Target species for the purposes of this survey were the SCI species associated with the Lough Swilly SPA. However, all identifiable birds of prey, gulls, divers, grebes, cormorants, herons, ducks, rails, waders, and kingfisher were also noted.

Data collected for each target observation included:

- Date and time of observation
- Species
- Flock size.
- Activity of note

The entire survey area was driven through once monthly. All species encountered during the surveys were mapped and coded using standard BTO species codes.

#### 5.1.7.3 Section 3

Lough Swilly SPA lies approximately 600 m north-west from the Section 3 CPO boundary (See Appendix 2 NIS Drawings: Drawing 5 European Designated Sites). The surveys associated with Section 2 cover the area in proximity to Section 3 that could support SCIs for Lough Swilly and Lough Foyle SPAs (Appendix 2 NIS Drawings: Drawings 9–12). The majority of the habitat and topography within Section 3 were not suitable to support populations of SCI species, where these habitats were present targeted surveys were undertaken as described below.

Areas of whooper swan activity had been identified during the winter season 2018/2019 by EirEco. The surveys for the 2019/2020 season (monthly from October to March), carried out by RPS, followed Scottish Natural Heritage (SNH) (2017). Important areas for birds within the vicinity and in the Proposed Development boundary were identified from the BirdWatch Ireland and the NBDC databases, as well as from the NPWS Lough Swilly SPA site synopsis NPWS (2014).

Survey approach for the 2019/2020 season involved the following:

1. Dawn surveys were conducted one hour before and up to one hour after dawn.
2. Transect of the Proposed Development boundary driven/walked where identified several times throughout the day.

3. VP on Manorcunningham viewpoint area to record any patterns in swan/geese flight lines that may have intersected with the study area.
4. Identification of any swan sites around the southern area of Section 3 in the Lifford/Saint Johnston area.
5. Close to dusk observations of swan activities to determine flight lines at Manorcunningham.
6. Dusk surveys were conducted one hour before dusk to one hour after dusk, where visibility allowed.

Wintering bird feeding areas surveys were undertaken monthly during the over-wintering survey months (December – April inclusive) of 2020-2021. On each occasion, the location and number of birds seen feeding in fields from suitable VPs (see Appendix 6: Lifford Whooper Swan Report) were recorded by surveyors to ascertain the level of usage within these areas.

Apart from the Swilly Burn floodplain, there are no important bird areas identified within the Proposed Development boundary and the habitats present are unsuited to supporting significant aggregations of wintering birds or likely flyways for wintering species. Small numbers of wintering waterbirds (including mallard (*Anas platyrhynchos*), teal (*Anas crecca*), wigeon (*Anas penelope*) and redshank (*Tringa totanus*)) are also likely to occur along the river Deelee in the vicinity of the Proposed Development where the tidal variation in the river provides a limited area of intertidal habitat for foraging by birds.

The Lough Swilly SPA is designated, *inter alia*, for the protection of Greenland white-fronted goose (*Anser albifrons flavirostris*) and whooper swan populations. The main areas of the site used by these species are at Big Isle, Farsetmore, Blanket Nook, Ballylawn and Inch Levels. The flock sizes for both species are among the highest in the country. Considerably higher numbers of whooper swan (peak of 1,946) have been recorded, especially early in the season, as this is the area where the swans make their Irish landfall in autumn on their return from breeding grounds in Iceland.

During the 2020/2021 winter (Appendix 6: Lifford Whooper Swan Report) a number of road transects combined with vantage counts were used to identify occupied areas by whooper swan and to record flight-lines which, for example, could reveal the location of additional flocks or flight-lines associated with commuting to and from roosts. During each survey all areas within the 20 km<sup>2</sup> were visited at least twice. The only exception being the eastern side of River Foyle (Grange) where visits were not made on every occasion.

Surveys were conducted for periods of around six hours at least once per month from November through to April. The positions of each flock of swans, geese, ducks or waders encountered was recorded on a field map to land management units (field parcels Irish Transverse Mercator (ITM) co-ordinates). In addition to the location, habitat type, flock size and composition (distinguishing first winter/adult swans and noting family unit sizes) were noted. For each visit, survey methodology consisted of site observations of the established swan site one hour before dawn to one hour after dawn (or until the roost is vacated if necessary), and one hour before dusk to one hour after dusk. In between dawn and dusk surveys, transects (driven/walkovers) of the emerging preferred route corridor were carried out to establish potential sites being utilised by geese or swans – including observations of flocks and/or droppings which would indicate site usage.

The 2025/2026 surveys also undertook road transects combined with vantage count Surveys, these are described as windscreen surveys, undertaken from October 2025 to January 2026. The driven transect routes are shown in Appendix 2 NIS Drawings: Drawings 20 Section 3 Windscreen Survey – Survey Effort. Surveys were undertaken at least twice per month. The positions of each flock of swans, geese, ducks, gulls or waders encountered was recorded on a field map to land management units (field parcels Irish Transverse Mercator (ITM) co-ordinates). In addition to the location, habitat type and flock size were also recorded.

### 5.1.8 Aquatic QI Receptors

Aquatic surveys were completed at locations in Sections 1, 2 and 3 identified in Appendix 7: Aquatic Field Survey Results and illustrated in Appendix 2 NIS Drawings: Drawings 13–15 Watercourse Survey Locations Sections 1–3) to characterise instream habitats and biological water quality in terms of presence/absence or potential for QI aquatic Annex II species, their habitats and Annex I habitats. The focus of aquatic ecological surveys for the NIS was on instream QIs, noting that otter is covered separately (see above). The survey

locations are each on water courses that are either within or hydrologically connected to SACs and SPAs to which the potential for likely significant effects could not be ruled out. Fieldwork was conducted in good weather conditions in all cases, across multiple survey efforts (2018 to 2025) with low water levels and generally good water clarity. All intersections between surface waters and the proposed route corridors were subject to survey.

The examined Zone of Influence (Zol) was established using the Source-Pathway-Receptor model (OPR, 2021), which is a standard tool used in environmental assessment. For an effect to be likely, all three elements of this mechanism must be in place. The Zol for aquatic ecological field surveys was considered using expert judgement and taking account of existing watercourse morphology, size and flow types primarily in terms of potential for downstream export of potential pollutants. All watercourses were investigated at select locations for up to 500m downstream of the Proposed Development, while aquatic habitats of the main river channels were investigated over greater distances where applicable (1 km or more) depending on the types of interventions proposed and the nature of the channel, e.g., spate river with diverse instream habitats or uniform/drained and tidal. The desk study accounted for catchment level hydrological connectivity, e.g., available fisheries data, downstream EPA biological water quality data and connectivity to sites designated for nature conservation within the hydrological catchments of the Proposed Development.

### 5.1.8.1 Aquatic Habitat Descriptions

Aquatic sites were visually assessed by accessing the watercourse as part of the kick-sampling (Q-value sampling) and fisheries habitat assessment; recording the in-channel and bankside habitats. Site habitat characteristics recorded included: substrate and flow types, depth and width, shading, surrounding land-use and general morphological character. The latter were assessed and recorded based on criteria for river hydromorphology using the principles of the River Hydromorphology Assessment Technique (RHAT) (NIEA, 2014).

### 5.1.8.2 Fisheries Habitat Assessment

A field-based fisheries habitat assessment was undertaken, recording the principle in-channel and bank-side habitats (e.g., substrates, flow types, instream vegetation, sedimentation), and their suitability as potential spawning, nursery, holding and residential sites for fish (primarily salmonids, lampreys and eel). The surveys were undertaken using a combination of wading using a bathyscope (where accessible) and bankside walkovers, entering the channel where possible to observe substrates. The assessment used expert judgement arising from many years of electrofishing and Q-value kick-sampling experience and observations, backed up by evidence from the scientific literature as to the suitability of channel morphology in relation to fisheries habitat (e.g., Armstrong *et al.* 2003). In the case of fisheries habitats, where a qualifying term, i.e., “Excellent”, “Good”, “Fair”, “Poor” or “None”, is used for spawning, nursery or holding habitat, it is based on the method of the Salmonid Life Cycle Unit Score (O'Connor & Kennedy 2002, Loughs Agency 2009). The descriptors for each qualifying term are shown in Table 5.8.

**Table 5.8: Salmonid Life Cycle Unit Score and Expert Judgement Qualification**

Habitat Quality	Life Cycle Unit Habitat Score	Expert Judgement Qualification
<b>Excellent</b>	1	Watercourse is ideal habitat for the species owing to high quality and diversity of habitats (flow types, substrate types, bed profiles, riparian habitat) that support relevant salmonid life stages
<b>Good</b>	2	Likely and certain that the watercourse supports the species owing to good quality of habitat conditions
<b>Fair</b>	3	Possible that the stream section could support the species but it there is sub-optimal diversity of flow, bed profile, substrate diversity and/or instream water quality and physical conditions
<b>Poor</b>	4	Possible, but unlikely, that the stream could support the species owing to impaired habitat conditions such as drainage, lack of flow, bed profile and substrate diversity and/or instream water quality and physical conditions
<b>None</b>	0	No possibility that the watercourse could support the species in question in the relevant life stage owing to completely unsuitable habitat and conditions.

### 5.1.8.3 Biological Water Quality Assessment

In Ireland, biological water quality is assessed using the Q-value metric. The system is based on field sampling and observations, which evaluates habitat quality and macroinvertebrate diversity and abundance to interpret ecological status as set out in Table 5.9. Potentially affected watercourses were also sampled during field studies to determine Q-value and water quality implications, in accordance with EPA protocols. This involved taking a two-minute, travelling kick-sample of macroinvertebrate fauna from a fast flowing (riffle) area of the river using a long-handled sampling net (250 mm width, mesh size 0.25 mm). Riffle areas of streams received preference in sampling, as riffle fauna tends to be more sensitive to pollution impacts. Stone washing was employed to ensure 'clinging' species, e.g. leeches and gastropods, were adequately collected. The relative abundance and sensitivity of aquatic organisms to pollution was then assessed at the bankside using the Q-rating system as published in Toner *et al.* (2005).

In addition, EPA Q-value data was reviewed for all relevant channels. This data is useful in characterising water and habitat quality for impact assessment purposes because water quality is a primary determinant of habitat quality for aquatic organisms.

**Table 5.9: EPA Biological Water Quality & Ecological Status Summary**

Biotic Index	EQR	Quality Status	Water Quality	WFD Status
Q5	1.0	Unpolluted	Good	High
Q4-5	0.9	Unpolluted	Fair-to-Good	High
Q4	0.8	Unpolluted	Fair	Good
Q3-4	0.7	Slightly Polluted	Doubtful-to- Fair	Moderate
Q3	0.6	Moderately Polluted	Doubtful	Poor
Q2-3	0.5	Moderately Polluted	Poor-to-Doubtful	Poor
Q2	0.4	Seriously Polluted	Poor	Bad
Q1-2	0.3	Seriously Polluted	Bad-to-Poor	Bad
Q1	0.2	Seriously Polluted	Bad	Bad

### 5.1.8.4 Swilly Estuary Habitat Characterisation

The River Swilly at the proposed crossing location in Section 2 is part of Lough Swilly SAC (Site Code 002287). The Qualifying Interest (QI) habitat is classified as 'Estuaries' (1130) in the Site-Specific Conservation Objective (SSCO) mapping of marine habitats (NPWS, 2011b). It was unclear from NPWS mapping of the marine communities within the estuary as to whether 'Mud Community Complex' extended into the upper estuary where the new bridge is proposed. Therefore, to establish the intertidal habitat community type, a walkover and benthic habitat survey of the River Swilly crossing area near Milk Isle was undertaken on 11 July 2018. This was an early design-stage habitat verification study to underpin subsequent bridge design considerations. A set of five replicate samples and a 0.25 m<sup>2</sup> dig through were collected and checked for infauna at two locations within the river crossing area. Samples were also collected for granulometric and loss on ignition analyses at these stations. Sample site locations are shown in Table 5.10. Sampling methodology followed the methods outlined in the Marine Monitoring Handbook (Davies *et al.*, 2001). The results of those surveys fed into the design of the proposed clear span bridge that does not impinge on the intertidal habitat. Subsequent walkovers were conducted in June 2020 and September 2024 as a habitat re-verification exercise.

**Table 5.10: Location of River Swilly Estuarine Sampling Sites (ITM)**

Site	Easting	Northing
Swilly - S1	619086	911690
Swilly - S2	619014	911558

## 5.2 Ecological Survey Findings

### 5.2.1 Section 1

Section 1 is set within the 01 Foyle river catchment. The Proposed Development directly intersects the River Finn SAC by way of a new proposed river bridge 2.3 km upstream of Ballybofey. Section 1 has distant connectivity to River Foyle and Tributaries SAC (NI) via the River Finn main channel and also via the Cloghroe River which is set in the upper River Deelee catchment of the 01 Foyle. Refer to Appendix 2 NIS Drawings: Drawing 1 General Arrangement Drawings.

#### 5.2.1.1 QI Habitat Receptors - Terrestrial

The dominant habitat within Section 1 was improved agricultural grassland (GA1), followed by wet grassland (GS4), interspersed with areas of road and residential dwellings (BL3 build and artificial surfaces). These grasslands were bounded by hedgerows (WL1), treelines (WL2), and grassy verges (GS2) habitats.

The north of the Proposed Development boundary is composed of improved agricultural grassland interspersed with areas of wet grassland. Scattered patches of broadleaf woodland (WD1) are located throughout the landscape, with occasional tracts of conifer woodland (WD4). There are larger areas of broadleaf woodlands at Drumboe and Dunwiley.

Six depositing watercourses (FW2) cross the study area: Burn Daurnett\_010 (IE\_NW\_01B020200); Finn (Donegal)\_050 (IE\_NW\_01F010600); Finn (Donegal)\_060 (IE\_NW01F010800); Finn (Donegal) (IE\_NW\_01F010910); Deelee (Donegal) (IE\_NW\_01D010500); and Cloghroe\_010 (IE\_NW\_01C050400).

The terrestrial Annex I habitats for which the River Finn SAC is designated are:

- Northern Atlantic wet heaths with *Erica tetralix* [4010]
- Blanket bogs (\* if active bog) [7130]
- Transition mires and quaking bogs [7140]

These are bog/mire habitats which are all located, at a minimum, 19 km upstream of Section 1 of the Proposed Development and will not be impacted or affected by the Proposed Development due to the absence of connectivity and effect pathways. Only one area of wet heath (HH3) was observed at the northern end of Section 1; approximately 4.6km north of the SAC at its closest point. However, no cross-leaved heather (*Erica tetralix*) was observed, and it is not considered to be or have affinities to an Annex 1 habitat. The primary point of interaction between Section 1 and European Sites is the 360 m long, seven-span bridge over the River Finn SAC and flood plain at Ballybofey/Stranorlar. At this location, the terrestrial habitats within the floodplain are composed of riparian woodland (WN5), (mixed) broadleaved woodland (WD1), improved agricultural grassland (GA1), and conifer plantation (WD4). These habitats have no affinity to Annex 1 habitats.

#### 5.2.1.2 QI Species Receptor - Otter

The NBDC data search returned 11 records of otter for the C10 grid square, one for the H09 grid square and ten for the H19 grid square. NPWS records show evidence of otters at numerous locations along the River Finn (Reid *et al.*, 2013). However, no records are located within the Section 1 of the Proposed Development boundary.

Otter surveys carried out between 2017 to 2025 established that otters are active both upstream and downstream of the proposed crossing of the River Finn and also on its connected tributaries. Otter activity was also recorded on the tributaries of the River Deelee catchment, including Cloghroe River, at the northern N13 tie-in. Evidence of otter was recorded in the form of possible holts, live sightings, prints, couches, spraint, and slides. Otter evidence in Section 1 is mapped in Appendix 2 NIS Drawings: Drawings 16–17 Otter Evidence and described in Appendix 4: Otter Evidence.

During walkover surveys in 2017 and 2020, multiple areas were identified as having the potential to hold otter holts, including locations within the townlands of Balybofey, Cappry (Graham), Carricknamanna, Carrickmagrath, Dooish, Drumboe Lower and Dreenan. One of these areas (Dooish) was within the Proposed Development boundary.

During the detailed otter surveys in 2019 and 2020, live sightings were recorded within the townlands of Goland and Mullandrait. The live sighting of otter at Mullandrait was 135 m from the Proposed Development boundary. The sighting in Goland located 646 m from the Proposed Development boundary line was recorded as a potential mammal and therefore could not be confirmed as otter. At that time, one active holt was recorded along the River Finn at Ballybofey bridge approximately 1.2 km downstream from the CPO boundary. A further two potential holts were recorded at Drumboe Lower, 45 m and 423 m from the Proposed Development boundary. Numerous other signs of otter (e.g. spraint, slides, couches, trails, and footprints) were recorded both within and outside the Proposed Development boundary.

During the detailed mammal surveys in July 2023, six further potential otter holts were recorded for Section 1 (see Table 1 in Appendix 4: Otter Evidence). No confirmed otter holts or couches were found within the study areas; however, multiple areas were identified as having the potential to hold otter holts, including locations within the townlands of Dooish, Drumboe Lower, and Ironworks. One of these areas (Dooish) was within the CPO boundary, while the locations at Drumboe Lower were 20 to 38 m from CPO boundary, and the locations at Ironworks were 30 to 50 m from the CPO boundary. Numerous other signs of otter (e.g. spraint, footprints and trails) were recorded across the CPO boundary both within and outside the Proposed Development boundary. All potential holts were regarded as not currently active from the field signs present with the exception of holt site (S1-HLT2).

A trail camera was deployed for 16 days between the 3 and 18 August 2023, at the potential holt sites (S1-HLT2), due to potential activity, to ascertain if it was currently used by otters. The footage obtained concluded that otter was not using the potential holt sites during the operational time of the camera traps.

During surveys between August and October 2025, potential holts recorded in 2023 and earlier surveys were revisited. There was no evidence of potential holts S1 HLT2 and S1-HLT3 showing regular use. However, a spraint was located approx. 2 m from S1-HLT3, which highlights otter activity in this area. The potential holt S1-HLT1 previously identified within the CPO boundary (Dooish), was categorised as disused due to the presence of cobwebs at the entrance and the absence of any spoil heap. Other potential holts recorded outside of the CPO boundary in 2023 were categorised as disused or ruled out as a potential holt. No further otter holts or couches were identified within the study areas in 2025. The potential holts were all categorised as inactive through the field surveys and there was no need to deploy any camera traps in 2025 to confirm the lack of use. However, two fresh spraints were recorded across the study area, both within and outside the CPO boundary, confirming that otters are still actively foraging and commuting through the CPO boundary.

Based on the most up-to-date baseline information available, otters are active along the River Finn and its tributaries however there are currently no active otter or couches holts identified (as relevant to the Proposed Development and, specifically, Section 1). It is the most up-to-date baseline against which the NIS assessment has been made; recognising that otters are a dynamic species within a dynamic aquatic ecosystem.

### 5.2.1.3 SCI Species Receptors – Breeding Birds

A comprehensive breeding bird survey has been undertaken with reference to the guidance set out in Bibby et al. (2000) and the Breeding Bird Survey (BBS) methodology as described by BTO. These surveys identified a typical range of species that would be associated with agricultural land and urban edge habitats. No notable populations of one or more species or a notable assemblage of breeding bird species was identified as a result of the breeding bird surveys. The habitats present within the CPO boundary have been regularly surveyed and updated with the final survey undertaken in 2025 to verify that the habitats had not significantly changed. The only changes to habitat value were noted in a negative trend, with further intensification of management or habitat loss. Given that the habitats have not changed significantly and in a negative assessment of value, the breeding bird assemblage and potential for notable populations will not have changed over time and the results of the breeding bird surveys can be regarded as comprehensive and valid for the assessment of value.

The Lough Swilly SPA is designated for 3 species with regards to their breeding populations, black-headed gull (*Chroicocephalus ridibundus*), Sandwich Tern, (*Sterna sandvicensis*) and Common Tern (*Sterna hirundo*). None of these species were recorded within the breeding bird surveys undertaken in 2020 or 2023 for Section 1 (see Appendix C9A.01 and Appendix G of the EIAR). The habitats present within Section 1 are not suitable to support breeding colonies of these species or to provide significant ex-situ foraging resources.

#### 5.2.1.4 SCI Species Receptors – Over-wintering Birds

The findings of the overwintering surveys completed in 2018/2019 found land within and adjacent to Section 1 does not support any notable populations or assemblages of over-wintering birds, including SCI species of European Sites. The findings of these surveys found occasional and sporadic occurrences of small mixed species flocks of mute swan, coot (*Fulica atra*), great crested grebe, shoveler (*Anas clypeata*), mallard, moorhen (*Gallinula chloropus*), and grey heron within these expansive agricultural fields. The most frequently occurring wintering species were found at Lough Alaun located approximately 580 m to the west of Section 1; but the frequency and numbers of any SCI species of the scoped in SPAs were so low that that they are significant.

It was verified during September 2025 to January 2026 that there were no material changes (e.g. to habitat suitability) which would have materially changed the findings of, or conclusions drawn from, the 2018/19 surveys.

#### 5.2.1.5 QI Receptors - Aquatic

The River Finn rises in the Stack Mountain range in central County Donegal, draining in a predominantly easterly direction through Ballybofey / Stranorlar to confluence with the River Foyle at Lifford / Strabane. The main channel of the River Finn is a designated Salmonid Water<sup>24</sup> and is part of the River Finn SAC (Site Code: 002301). It is considered one of Ireland's premier spring salmon waters. Aquatic qualifying interests of the SAC are Annex I Habitat 1130 – Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) and Atlantic salmon (NPWS, 2017). Habitat 1130 is confined to upland lakes within the designation (located over 20 km upstream) and not within the Zol of the Proposed Development. Only Atlantic salmon occur within the relevant study area and are the only relevant aquatic QI receptor for the Proposed Development at Section 1.

Loughs Agency conducts catchment-wide juvenile salmonid surveys in the River Finn; using semi-quantitative (five-minute single-pass) electrofishing at numerous sites. Main channel and tributary sites that occur within the Section 1 of the Proposed Development boundary are surveyed. The most recent Loughs Agency electrofishing data are presented in Appendix 8: Loughs Agency Fisheries Data 2020 -2024. Results over several years (2021-2024, annually) show that, in the reach upstream of Ballybofey at the proposed new bridge crossing of the River Finn (W1-06), salmon fry (0+ age class) were present in 'fair' to 'excellent' numbers and salmon parr (1+ age class) were present through the reach in 'fair' numbers. The potentially affected reach encompassing the proposed crossing was previously classified by Niven *et al* (2011b) as mainly Grade 1 and 2 nursery habitats for salmonids, with small patches of Grade 2 holding and limited Grade 3 spawning habitats (Scale: 1 'excellent' to 4 'poor').

Annual salmon redd surveys are undertaken by the Loughs Agency, with composite redd count data for the years 2020-2024 (presented in Appendix 8: Loughs Agency Fisheries Data 2020 -2024) showing indicative local distribution of spawning habitats. The redd count data, along with field survey observations, below) aligns with the earlier classification by Niven *et al* (2011b), in that the proposed crossing reach is less suitable for spawning but is good nursery habitat based on juvenile salmonid numbers. Salmon fry and parr were present in fair to excellent numbers each year in the lower Backlees (c.670 m upstream of River Finn and 1.0 km downstream of the crossing point W1-08, suggesting salmon spawn locally in the lower Backlees, but cannot ascend the natural barrier formed by a waterfall that occurs just upstream of the proposed Backlees bridge. Salmon fry and parr occurred in the Burn Durnett consistently over the survey years (2021-2024) in 'fair', mainly 'good' and up to 'excellent' numbers (Loughs Agency electrofishing data

<sup>24</sup> European Communities (Quality of Salmonid Waters) Regulations (S.I. No. 293 of 1988)

2020-2024, *formal data request*), a continuation of salmonid presence in earlier sampling rounds as part of Loughs Agency catchment fisheries status reporting (McCauley and Deehan, 2019).

Two sites are also monitored as part of WFD fisheries status reporting: Stranagoppoge and Clady Bridge, c.20 km upstream and downstream of Ballybofey respectively. Available data (summer 2016) showed good numbers of fry (0+ year old) and reasonable numbers of parr (1+ year old) salmon at both surveillance sites using single pass electrofishing over 100 m<sup>2</sup>. The Clady Bridge site was at High Status for fish stocks, while Stranagoppoge was Moderate (Niven and McCauley, 2018). Salmon run on the River Finn is throughout the season (1 March – 15 Sept.), particularly good in spring. Loughs Agency also operates a fish counter on the Finn at Killygordon, i.e., circa 10km downstream of Ballybofey. Fish counts for 2020, 2021, 2022, 2023 and 2024 were: 2,302, 2,409, 1,194, 1750, 1025, respectively (Loughs Agency 2025<sup>25</sup>).

The management target for the Finn is 5,410 upstream moving salmon annually. The fish counts show the river is consistently not meeting its management target and has failed to do so for many years (Niven *et al.*, 2016; Niven and Clarkin, 2018). Combining the above information, it is evident that the River Finn main channel in the crossing reach upstream of Ballybofey, is an important salmonid nursery area, but holding areas and spawning potential is more limited. Of the main tributaries affected by Section 1 of the Proposed Development, the Burn Daurnett is an important salmonid spawning and nursery stream, while the Backlees, a small tributary of the Finn supports some trout spawning and nursery habitat throughout but juvenile salmon are only present on the lower reaches likely owing to the natural barrier formed by a steep waterfall upstream of the proposed W1-08 crossing point.

At the northern end of the Proposed Development, the Magheracorrán (Teevickmoy Burn) is intercepted by Section 1. This is a small tributary of the Cloghroe River itself a tributary of the Deelee River. The River Deelee rises in the Cark Mountain plateau between the Derryveagh and Stack Mountains and flows in mainly an easterly direction towards the River Foyle at Lifford. Teevickmoy Burn joins the Cloghroe River about 1.5 km downstream of the N13 road and the Cloghroe River then joins the Deelee River a few hundred metres downstream.

Loughs Agency fish monitoring surveys show the River Deelee to have reasonable numbers of salmon ('Fair' to 'Good') fry (0+) in the region near the Cloghroe River confluence (Niven *et al.*, 2011a, 2016 Niven and McCauley, 2016). Recent survey data from the Deelee main channel (2021-2024, see Appendix 8: Loughs Agency Fisheries Data 2020 -2024) near the Cloghroe River confluence show generally 'good' to 'excellent' numbers of salmon and trout fry and parr. The composite redd count data (2020-2024) shows salmon spawning redds recorded along the Cloghroe River upstream as far as the existing N13, which aligns with field observations. Niven *et al.* (2011a) classified the Cloghroe River as mainly Grade 2 and 3 nursery habitats for salmonids with small patches of Grade 3 holding and one small reach of Grade 3 spawning habitat (Scale: 1 'excellent' to 4 'poor').

Biological water quality is monitored by the EPA on the River Finn and Burn Daurnett at stations upstream and downstream of the study area. EPA Q-value results over recent years are shown in Table 5.11. Burn Daurnett is currently Q3-4, 'Moderate' status (2022), upstream and downstream of the study area, an improvement compared to previous years. River Finn is Q4-5, 'High status (2022), upstream of Ballybofey, declining to Q4 – 'Good' status downstream of the town and then 'Moderate' by c.10 km downstream of Ballybofey (at Killygordon). The achievement of high-status Q-rating in 2022 was a dramatic improvement over previous monitoring rounds. Indications are that waters of the River Finn are "*unpolluted*" upstream and just downstream of Ballybofey but decline with distance downstream. The Burn Daurnett was '*slightly polluted*' throughout in 2022. Project specific Q-value data taken in 2024 is provided in Appendix 9: Q-value Data for sites sampled on watercourses in relation to the Proposed Development, including streams not monitored by the EPA (where suitable stony substrates were present).

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<sup>25</sup> Loughs Agency fish count data available at: <https://www.loughs-agency.org/what-we-do/protection/fish-counter-programmes>. Note: 2022 fish count included an average count added from Feb-May 2023 due to one of the channels not being operational.

**Table 5.11: EPA Water Quality Monitoring Data**

EPA Code	Station Name	2013	2016	2019	2022
01F010600	Finn – Bridge 2.5 km u/s Ballybofey	3-4	3	3-4	4-5
01F010800	Finn – Br S of Stranorlar	3-4	3	3	4
01F010900	Finn – Bridge S. of Killygordon	4	3	3-4	3-4
01B020010	Burn Daurnett – Blackburn Br	2-3	2-3	3-4	3-4
01B020200	Burn Daurnett – Bridge N.W. of Daisy Hill	3	3	3-4	3-4

Field-based fisheries habitat assessments were undertaken for the Proposed Development in 2020, 2024 and 2025. Appendix 2 NIS Drawings: Drawing 13 Watercourse Survey Locations – Section 1) illustrates the locations where these assessments were carried out across Section 1 of the Proposed Development. Appendix 7: Aquatic Field Survey Results details the habitats recorded and assigns fisheries value and Q values to each. These are summarised for the relevant locations below.

One crossing is proposed on the main channel of the River Finn in Section 1 (W1-06) where it is a large, moderately fast-flowing primarily eroding type river with a wet width of approximately 30m and is part of the River Finn SAC. The proposed bridge is a seven-span structure of 360m total length over the river, the floodplain and the R252 road. A single 85m span will clear the River Finn and R252 road, with piers set outside the SAC boundary on both banks. There will be no instream footprint and no permanent footprint within the SAC. Dominant flow at crossing W1-06 is a glide/run over mixed substrates of mainly large and small boulder, cobble and bedrock outcrops with patches of coarse gravel and interstitial sand. A section of rapid/run in the crossing reach is followed by a lower gradient reach forming a glide between outcropped boulders. Instream plants consist mainly of aquatic mosses, primarily *Fontinalis* and liverworts. The riparian habitat on the left-hand side (LHS) consists of treelines, hedgerow and improved agricultural grassland. On the right-hand side (RHS) the bank is reinforced by mortared stonework backed by the R252 road. Grade 1 and 2 salmon nursery habitats are present in the vicinity of the crossing reach with small patches of Grade 2 holding and Grade 3 spawning habitats [Scale:1 (excellent) to 4 (poor)]. The review of Loughs Agency fisheries data (see Appendix 8: Loughs Agency Fisheries Data 2020 -2024 and fisheries review, above) shows salmon fry and parr in Whilst the small tributary of the River Finn at W1-07 (Dromboe Lower) has been entirely piped and/or culverted for most of its length, good salmonid spawning and nursery habitat was present in the short, open reach across the floodplain downstream of the local road, with an abundance of juvenile salmonids observed during field survey in 2020 and 2024.

The River Finn downstream of Ballybofey at survey point W1-21, downstream of the input from Mullaghagary tributary (affected by the N15 link road), forms a wide laminar glide over substrates of mainly large cobble and small boulder with patches of coarse gravel/sand and few outcropping large boulders. During field survey of 2020 and 2024, all substrates at W1-21 were coated in a layer of pollution tolerant filamentous green algae (*Cladophora* sp.), fine sediment and/or algal detritus with sediment accumulations occurring in slack flow areas. There was no (or very little) salmon spawning habitat at W1-21 but nursery habitat and holding pools and glides were present as the river broadens out, deepens and has reduced flow diversity.

The Burn Daurnett is not crossed by the Proposed Development but is within the Zol at the southern end of Section 1. It was surveyed at point W1-22 where it was a moderate sized, moderate to fast flowing, primarily eroding river with a wet width of 4-5 m. It has been historically drained but has recovered a reasonably natural instream morphology, forming a series of mainly riffle/run and glide sequences over substrates of gravel, cobble and coarse sand with reaches of bedrock. It supports an aquatic bryophyte plant community, in addition to mats of *Phormidium*. The riparian habitat consists of treelines, hedgerow and improved agricultural grassland, with abundant coniferous forestry in the upstream catchment area. The Burn Daurnett comprises good salmon spawning and nursery habitats, with occasional holding pools. With generally abundant cover from native broadleaved riparian vegetation, the Burn Daurnett is an important spawning and nursery tributary of the Finn (see Appendix 8: Loughs Agency Fisheries Data 2020 -2024) for fisheries data), although impaired water quality may be depressing productivity.

## 5.2.2 Section 2

Section 2 is set entirely within the 39 Lough Swilly water catchment. The Proposed Development intersects the Lough Swilly SAC by way of a proposed new river bridge over the estuarine reaches of the River Swilly downstream of Letterkenny. The Isle Burn (Leslie Hill stream) is crossed at the Lough Swilly SAC boundary at an existing river culvert just west of the N13/N14 Pluck Roundabout. Refer to Appendix 2 NIS Drawings: Drawing 2 General Arrangement Drawings.

### 5.2.2.1 QI Habitat Receptors - Terrestrial

The dominant habitat within the Section 2 of the Proposed Development boundary was improved agricultural grassland (GA1), followed by wet grassland (GS4) and mixed broadleaved woodland (WD1). These habitats were bounded by hedgerows (WL1) and treelines (WL2). There were also areas of road, residential dwellings, and industrial sites (BL3 build and artificial surfaces) located throughout the Proposed Development boundary.

The Annex I terrestrial and coastal habitats for which the Lough Swilly SAC is selected are:

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]

Atlantic Salt Meadows (ASM) is a halophytic habitat and the latter two are terrestrial habitats. ASM and 'Potential ASM' habitat is recorded in NPWS mapping<sup>26</sup> as a narrow band on the seaward side of the tall flood embankment, occurring along the Swilly tidal channel between Milk Isle and the townland of Farsetmore. As set out above, this habitat was not recorded at the proposed River Swilly crossing and the embankment is too steep to allow saltmarsh to develop. However, ASM is assumed to be present in the downstream Zol based on hydrological connectivity via the estuarine River Swilly and small drains and tributaries that collect in the embankment toe-drain and discharge through the embankment to Lough Swilly at a number of points via non-return sluice gates. The flood embankment is not breached or physically altered by the Proposed Development hence there is no mechanism for direct impact on ASM as part of the Proposed Development.

Neither of the terrestrial QI habitats occur within the CPO boundary. Wet grassland (GS4), which was found at numerous locations throughout Section 2, can have affinity to *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]. However, the wet grasslands in the Proposed Development boundary share no common species with the *Molinia* meadows [6410] habitat description (EC, 2013). Therefore, QI *Molinia* meadows [6410] was not identified in the study area.

At the Swilly Estuary crossing, the habitats on the eastern bank are composed of a mosaic of GA1 improved agricultural grassland (GA1), wet grassland (GS4) with dry meadows and grassy verges (GS2) on the flood embankment. The area is subject to intermittent grazing and supports a short sward. GA1 comprises a species-poor grassy sward of typical agricultural grassland cultivars, including a dominance of perennial ryegrass (*Lolium perenne*) with occasional to frequent occurrences of white clover (*Trifolium repens*), creeping buttercup (*Ranunculus repens*), common mouse-ear (*Cerastium fontanum*), and broad-leaved dock (*Rumex obtusifolius*). GS4 comprises soft rush with locally abundant yellow iris (*Iris pseudacorus*) and occasional to frequent marsh thistle (*Cirsium palustre*), creeping bent (*Agrostis stolonifera*), silverweed (*Potentilla anserina*) and creeping buttercup.

GS2 is found on the flood berms on both banks of the Swilly Estuary and is within the boundary of the SAC. As these grasslands appear to be rarely fertilised and only occasionally mown and grazed, they have developed a good diversity of grassland species including false oat-grass, cock's-foot (*Dactylis glomerata*), rough meadow grass (*Poa trivialis*), creeping bent, meadow foxtail (*Alopecurus pratensis*), tall fescue (*Schedonorus arundinaceus*) and Yorkshire fog. In general, there is not a good diversity or abundance of

<sup>26</sup> Taken from the NPWS Article 17 GIS and Metadata interactive map viewer 2019 spatial data. (<https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17>) viewed December 2025

herbaceous species, however, species such as spear thistle (*Cirsium vulgare*), creeping thistle (*Cirsium arvense*), ragwort (*Senecio jacobaea*), meadow vetchling (*Lathyrus pratensis*), white clover, red clover, hogweed (*Heracleum sphondylium*), upright hedge parsley (*Torilis japonica*), and hedge bindweed (*Calystegia sepium*) have established well in these conditions. Due to the lack of ongoing management, many of these grassland habitats are being encroached by bramble (*Rubus fruticosus* agg.) and gorse scrub. This habitat type commonly forms mosaics with improved agricultural grassland and wet grassland habitats.

### 5.2.2.2 QI Habitat Receptors - Estuarine

The Swilly Estuary (Lough Swilly) covers an area of 59 km<sup>2</sup>, starting at the tidal limit of the River Swilly in Letterkenny town and extending seaward approximately 20 km north-easterly to the village of Rathmullan (CRFB, 2010). The estuary is within Lough Swilly SAC (002287) and Lough Swilly including Big Isle, Blanket Nook and Inch Lake pNHA (000166). The Swilly Estuary is a Transitional Waterbody (IE\_NW\_220\_0100) monitored by the EPA, currently reported for the 2019-2024 at 'poor' ecological status.

Lough Swilly is an important fisheries resource. The Central Fisheries and Regional Fisheries Board (now IFI) carried out WFD fish sampling in the Swilly Estuary in 2009, recording 32 fish species, which was the highest fish species richness for any transitional water body surveyed nationwide that year. Juveniles of commercially important fish species were present (cod, plaice and whiting), plus species of angling importance (sea trout, flounder (*Platichthys flesus*) and lesser spotted dogfish (*Scyliorhinus canicular*)) (CRFB, 2010). These surveys have not been repeated by IFI since the 2009 study.

### Swilly Bridge Crossing Reach Survey Results (Lough Swilly SAC)

The intertidal area beneath the proposed new Swilly Bridge crossing (W2-18) is uniform and typical of upper estuarine systems. The community complex present was identified as typical of the 'Mud community complex' of the of the Annex I Habitat, Estuaries [1130], a qualifying interest habitat identified in the Lough Swilly SAC Conservation Objectives supporting document (NPWS, 2011) although the faunal diversity and abundances were low. Initial surveys were conducted in 2018, with follow up site-visits in 2020 and 2024 which confirmed ongoing presence of the Annex I habitat which iteratively informed the proposed bridge design and informed this assessment. The proposed bridge was therefore designed with a 108 m clear span over the channel with piers and abutments outside the SAC boundary and no temporary or permanent in-channel footprint, hence avoiding direct physical impact on Annex I habitat of Lough Swilly SAC.

The intertidal soft sediment consists primarily of soft, liquid muds (Figure 5-1), sloping into the river from dry, compact mud located at the top of the shore adjacent to the terrestrial area of the crossing (Figure 5-2). Diatoms are common across this soft, intertidal muddy area. The anoxic layer across the site is located just beneath the sediment surface. No large fauna was returned in either dig. Results from the infaunal replicate cores indicated the area to be species poor, with very low faunal abundances across the survey area.

The fauna present in the area consist primarily of Oligochaetes within the sloping mud, and the polychaete *Hediste diversicolor*, which is present in the firmer, compacted mud near the top of the shore. The brown algae, *Fucus* sp. is present across the shoreline. The site classifies as typical of the Polychaete/Oligochaete-dominated upper estuarine mud shores habitat – LS.LMu.UEst (JNCC, 2022) which has been described as '*Upper estuarine sandy mud and mud shores, in areas with significant freshwater influence. Littoral mud typically forms mudflats, though dry compacted mud can form steep and even vertical structures, particularly at the top of the shore adjacent to saltmarshes. Little oxygen penetrates these cohesive sediments, and an anoxic layer is often present within millimetres of the sediment surface. The upper estuarine mud communities support few infaunal species and are principally characterised by a restricted range of polychaetes and oligochaetes.*' This description corresponds well with the results from survey of the study area.

A subsequent site visit of 2024 verified there had been no physical changes to the intertidal habitat which was unsurprising given the sheltered physical location of this depositional and static habitat so far upstream in the estuary. Even if there had been slight changes to the (very low diversity) faunal composition this far up the estuary between 2018 and 2025 (when the current report was prepared), the annexed habitat classification does not alter and the targets and attributes for the QI habitat 1130 Mud community complex were applied in this impact assessment. The conservation targets for this community are: (1) permanent

habitat area is stable or increasing, subject to natural processes (2) communities should be conserved in a natural condition (NPWS, 2011a).



**Figure 5-1: River Swilly – Overview of the intertidal area within the Proposed Development boundary (June 2020)**



**Figure 5-2: River Swilly – Intertidal bank habitat at crossing location (September 2024)**

### 5.2.2.3 QI Species Receptor - Otter

The NBDC data search returned 11 records of otter for the C10 grid square, 15 records for the C11 grid square, and no records for the C20 and C21 grid squares. NPWS records show evidence of otter along the Dooballagh Burn\_010 (IE\_NW\_39D020200) river, which flows into Leslie Hill Stream\_020 (IE\_NW\_39L050660), which then discharges into Swilly Estuary (IE\_NW\_220\_0100) and Lough Swilly coastal waterbody (IE\_NW\_220\_0000) (Reid *et al.*, 2013). No records are located within the Proposed Development boundary.

The otter surveys described previously, established that otter is using the area upstream and downstream of the proposed crossing of the River Swilly, and are therefore considered to be utilising this section of the Swilly Estuary. Evidence of otter was recorded in the form of possible holts, live sightings, prints, couches, spraint, and slides. Otter evidence in Section 2 is described in Tables 4 to 6 in Appendix 4: Otter Evidence and mapped in Appendix 2 NIS Drawings: Drawings 18–19 Otter Evidence.

During the detailed otter survey completed during 2019, an active holt was found approximately 18 m from the Proposed Development boundary within the townland of Drumany, while one potential holt was observed within the townland of Ballyraine, approximately 776 m from the Proposed Development boundary. A sighting of a live otter was also recorded within the townland of Bunagee, approximately 158 m from the Proposed Development boundary. Numerous other signs of otter activity (e.g. spraint, slides, couches, trails, and footprints) were also recorded across the Proposed Development boundary both within and outside the Proposed Development boundary (Table 5 in Appendix 4: Otter Evidence).

During the detailed mammal surveys in July 2023, the active holt in Drumany recorded in 2019 was revisited. Due to growth of dense vegetation, the holt could no longer be accessed by the surveyor and could not be confirmed if otter were still actively using the holt. However, due to the lack of an active trail leading into the dense vegetation it is deemed unlikely that the holt is still active.

A further five potential otter holts were recorded in July 2023 for Section 2 within the townlands of Ballyraine, Milk Isle, and Trimragh (see Table 4 in Appendix 4: Otter Evidence). One of these areas (Trimragh) was within the CPO boundary, while the locations at Milk Isle were 20 to 89 m from the CPO boundary, and the location at Ballyraine was 6 m from the CPO boundary. Two of the holts were deemed as potentially active S2-HLT1 and S2-HLT2, whilst the others were deemed as inactive and disused.

Trail cameras were deployed for 16 days between the 3 and 18 August 2023 at the two potentially active holt sites; one in Ballyrain (S2-HLT1) and one at Milk Isle (S2-HLT2) to ascertain if they were in current use by otters. The footage obtained concluded that otter were not using the potential holt sites during the operational time of the camera traps.

Numerous other signs of otter activity (e.g. spraint, footprints, and trails) were also recorded across the Proposed Development boundary both within and outside the Proposed Development boundary (Table 5 in Appendix 4: Otter Evidence). Evidence of otter activity was predominantly along the River Swilly, upstream and downstream of the proposed crossing. Additionally, regular spraint was observed on a culvert in Farsetmore stream within the Proposed Development boundary.

During the 2025 surveys, the five potential holts identified in 2023 and two in 2019 were revisited. S2-HLT1 did not show signs of regular use, however, a print was identified in close proximity to the hole. In Milk Isle, potential holts S2-HLT3 and S2-HLT4 were located approximately 10 m apart and found to have been used in recent months, potentially by otter, but were not currently active. It was determined that S2-HLT2 and S2-HLT5 were disused, and there was no other evidence of otter activity in these areas. The two potential holts identified in 2019 were absent in the 2025 re-survey, and there were no other signs of otter recorded in these areas. No further otter holts or couches were identified within the study areas in 2025. However, other evidence of otter activity (e.g. print, slide, trail) was recorded outside of the CPO boundary during the 2025 surveys.

During the entire survey period, other potential field signs, which could not be attributed with certainty to otter activity, but which could likely be caused by otter, were also encountered. Table 6 in Appendix 4: Otter Evidence lists field signs which, while not confirmed as being evidence of otter, are considered to be sufficient to be included on the basis of the precautionary principle.

Based on the most up-to-date baseline information available, otters are active within the Swilly Estuary and the tributaries that feed it. However, there are currently no active otter holts or couches identified (as relevant to the Proposed Development and, specifically, Section 2). It is the most up-to-date baseline against which the NIS assessment has been made; recognising that otters are a dynamic species within a dynamic aquatic ecosystem.

#### 5.2.2.4 SCI Species Receptors – Breeding Birds

A comprehensive breeding bird survey has been undertaken with reference to the guidance set out in Bibby et al. (2000) and the Breeding Bird Survey (BBS) methodology as described by BTO. These surveys identified a typical range of species that would be associated with agricultural land and urban edge habitats. No notable populations of one or more species or a notable assemblage of breeding bird species was identified as a result of the breeding bird surveys. The habitats present within the CPO boundary have been regularly surveyed and updated with the final survey undertaken in 2025 to verify that the habitats had not significantly changed. The only changes to habitat value were noted in a negative trend, with further intensification of management or habitat loss. Given that the habitats have not changed significantly and in a negative assessment of value, the breeding bird assemblage and potential for notable populations will not have changed over time and the results of the breeding bird surveys can be regarded as comprehensive and valid for the assessment of value.

The Lough Swilly SPA is designated for 3 species with regards to their breeding populations, black-headed gull (*Chroicocephalus ridibundus*), Sandwich Tern, (*Sterna sandvicensis*) and Common Tern (*Sterna hirundo*).

During the 2020 breeding bird surveys none of these species were recorded within the breeding bird surveys undertaken in Section 2 (see Appendix C9A.01 of the EIAR). During the 2023 breeding bird surveys black-headed gull was recorded twice with counts of 1 individual and 13 individuals (see Appendix C9A.01 of the EIAR). These were of foraging birds and the nearest known breeding colony for the Lough Swilly population is located on Inch Island (Inch Lake) located approximately 16.5km NE of the CPO boundary at its closest point. Given the low numbers recorded and on only two occasions the Proposed Development does not constitute a significant foraging resource for the breeding population of black-headed gull within the SPA.

### 5.2.2.5 SCI Species Receptors – Over-wintering Birds

The following should be read in conjunction with Appendix 5: Wintering Bird Evidence, and Appendix 2 NIS Drawings: Drawings 8–12 which maps the study areas, VPs, and transects.

A series of wintering bird surveys have been undertaken from 2017 to 2026 that have identified a number of wintering birds that are present within and in close proximity to the Proposed Development.

A list of overwintering bird species relevant to the NIS was compiled to identify Special Conservation Interest (SCI) species that use the Proposed Development during the qualifying winter period. To do this, all SCI species of the relevant SPAs were considered.

Lough Swilly SPA (site code: 004075) has 24 SCI species. These are great crested grebe (*Podiceps cristatus*), grey heron (*Ardea cinerea*), whooper swan (*Cygnus cygnus*), greylag goose (*Anser anser*), shelduck (*Tadorna tadorna*), teal (*Anas crecca*), mallard (*Anas platyrhynchos*), scaup (*Aythya marila*), goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), coot (*Fulica atra*), oystercatcher (*Haematopus ostralegus*), knot (*Calidris canutus*), dunlin (*Calidris alpina*), curlew (*Numenius arquata*), redshank (*Tringa totanus*), greenshank (*Tringa nebularia*), black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), common tern (*Sterna hirundo*), greenland white-fronted goose (*Anser albifrons flavirostris*), wigeon (*Mareca penelope*), shoveler (*Spatula clypeata*), and sandwich tern (*Thalasseus sandvicensis*).

Lough Foyle SPA (site code: 004087) also has 24 SCI species. These are red-throated diver (*Gavia stellata*), great crested grebe, Bewick's swan (*Cygnus columbianus bewickii*), whooper swan, greylag goose, light-bellied brent goose (*Branta bernicla hrota*), shelduck, teal, mallard, eider (*Somateria mollissima*), red-breasted merganser, oystercatcher, golden plover (*Pluvialis apricaria*), lapwing (*Vanellus vanellus*), knot, dunlin, bar-tailed godwit (*Limosa lapponica*), curlew, redshank, black-headed gull, common gull, herring gull (*Larus argentatus*), and wigeon.

Lough Foyle SPA (former Natura 2000 designation, UK9020031) has 1 additional species as a selection feature cormorant (*Phalacrocorax carbo*) that does not form an SCI of the ROI SPAs.

Combining the two lists resulted in 33 SCI species that could potentially be relevant to the proposed works. Surveys were carried out over the 2017–2020, 2020/2021, and 2022–2023 winter seasons, together with the latest surveys in 2025/2026 winter season. During the full suite of surveys, 43 bird species were recorded. These were compared with the SCI species listed for the two relevant SPAs. Of the 43 species recorded, 20 were SCI species of Lough Swilly SPA and Lough Foyle SPAs. These were great crested grebe, grey Heron, whooper swan, greylag goose, shelduck, teal, mallard, coot, oystercatcher, dunlin, redshank, greenshank, black-headed gull, common gull, Greenland white-fronted goose, wigeon, shoveler, bar-tailed godwit, and herring gull.

The black-headed gulls and common gulls are an SCI for their breeding numbers, and no wintering numbers are provided within the NPWS supporting information for the Conservation Objectives (NPWS, 2011d). The conservation objective only refers to maintaining breeding numbers and therefore black headed gull can be discounted as SCI for their wintering numbers

The following SCI species were not recorded using the area of the proposed scheme and were therefore considered not relevant to the NIS: red-throated diver, Bewick's swan, light-bellied brent goose, red-breasted merganser, scaup, goldeneye, knot, common tern, cormorant and sandwich tern.

Of the 20 SCI species recorded, four species were present in numbers considered significant in relation to Lough Swilly SPA and were found within 500 m of the proposed works. A "significant number" was defined as a flock greater than the SPA's 1% population threshold (European Environment Agency, 2024). These four species were curlew, teal, greylag goose, and redshank.

Of the 20 SCI species recorded, the same four species were regarded as being in numbers considered significant in relation to Lough Foyle SPA and was found within 500 m of the proposed works. A "significant number" was defined as a flock greater than the SPA's 1% population threshold (NPWS, 2014d).

In total, four SCI species — curlew, teal, greylag goose and redshank were identified as having potential to be adversely affected by the Proposed Development.

### 5.2.2.5.1 2025/2026 Survey

#### 5.2.2.5.1.1 Vantage Point Surveys

The survey effort for the vantage point surveys are shown in Table 5.12 to Table 5.16 below.

**Table 5.12: Vantage Point Survey Effort and Weather Data September 2025**

Date	VP	Start	End	Cloud (Oktas)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Disturbance
01/09/2025	VP2.12	11:55	14:55	8/8	3	15°C	Passing heavy showers	High 13:25	None
02/09/2025	VP2.15	13:52	16:52	6/8	3	17°C	Rained for last hour	High 15:22	None
03/09/2025	VP2.12	08:25	11:25	8/8	2	14°C	Light showers	Low 09:55	None
03/09/2025	VP2.13	15:03	18:01	6/8	2	15°C	None	High 16:31	None
04/09/2025	VP2.14	15:45	18:45	6/8	2	14°C	Light	High 17:15	None
09/09/2025	VP2.13	12:22	15:22	7/8	2	16°C	None	Low 13:52	Digger sowing fields, largely ignored.
10/09/2025	VP2.15	13:00	16:00	8/8	3	16°C	Showers	Low 14:30	None
11/09/2025	VP2.14	13:41	16:41	8/8	3	15°C	Showers	Low 15:11	None

**Table 5.13: Vantage Point Survey Effort and Weather Data October 2025**

Date	VP	Start	End	Cloud (Oktas)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Disturbance
06/10/2025	VP2.12	10:39	13:55	8/8	3	16°C	Light drizzle	Low 12:09	None
07/10/2025	VP2.15	11:17	14:17	8/8	2	16°C	None	Low 12:47	Walkers at 14:00
08/10/2025	VP2.13	11:57	14:57	8/8	3 / 4	14°C	None	Low 13:27	None
09/10/2025	VP2.14	12:39	15:39	8/8	3	14°C	Occasional light drizzle	Low 14:09	None
13/10/2025	VP2.15	10:02	13:02	7/8	1	13°C	None	High 11:32	None
14/10/2025	VP2.13	11:40	14:40	8/8	0	12°C	None	High 13:10	Farmer cutting hedges
28/10/2025	VP2.12	08:16	11:16	4/8	3	12°C	None	High 09:46	None
29/10/2025	VP2.14	09:32	12:32	8/8	4	10°C	Passing showers	High 11:02	None

**Table 5.14: Vantage Point Survey Effort and Weather Data November 2025**

Date	VP	Start	End	Cloud (Oktas)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Disturbance
03/11/2025	VP2.15	08:26	11:26	8/8	3	13°C	Consistent Showers	09:56	None
04/11/2025	VP2.13	09:09	12:09	6/8	2	14°C	None	10:39 LT	None
05/11/2025	VP2.12	09:53	12:53	7/8	3	13°C	None	11:23 LT	None
06/11/2025	VP2.14	10:38	01:38	8/8	3	13°C	Occasional shower	12:08 LT	None
25/11/2025	VP2.14	06:55	09:55	2/8	2	3°C	None	08:25 HT	None
26/11/2025	VP2.13	08:06	11:06	8/8	3	7°C	Occasional shower	09:36 HT	None
27/11/2025	VP2.15	09:07	12:07	8/8	5	10°C	Drizzle & passing heavy showers	10:37 HT	None
28/11/2025	VP2.12	10:10	13:10	8/8	5	11°C	heavy showers	11:40 HT	None

**Table 5.15: Vantage Point Survey Effort and Weather Data December 2025**

Date	VP	Start	End	Cloud (Okta s)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Disturbance
01/12/2025	VP2.15	13:20	16:20	8/8	2	08°C	None	14:50 HT	None
01/12/2025	VP2.12	13:20	16:20	7/8	2	08°C	None	14:50 HT	None
02/12/2025	VP2.13	14:13	17:13	1/8	1	08°C	None	15:53 HT	None
02/12/2025	VP2.14	14:13	17:13	1/8	1	08°C	None	15:53 HT	None
03/12/2025	VP2.15	08:46	11:46	5/8	3	07°C	None	10:16 LT	None
03/12/2025	VP2.12	08:46	11:46	5/8	3	07°C	None	10:16 LT	None
04/12/2025	VP2.14	09:37	12:37	3/8	2	06°C	None	11:07 LT	None
04/12/2025	VP2.13	09:37	12:37	3/8	2	06°C	None	11:07 LT	None

**Table 5.16: Vantage Point Survey Effort and Weather Data January 2026**

Date	VP	Start	End	Cloud (Okta s)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Disturbance
05/01/2026	VP2.15	12:06	15:06	2/8	1	02	None	13:36 LT	None
06/01/2026	VP2.13	12:52	15:52	6/8	4	04	None	14:22 LT	None
07/01/2026	VP2.12	13:37	16:37	6/8	3	04	None	15:07 LT	None
12/01/2026	VP2.12	11:47	14:47	8/8	3	08	None	13:17 HT	None
13/01/2026	VP2.13	13:03	16:03	8/8	4	07	None	14:33 HT	None
14/01/2026	VP2.14	14:07	17:07	8/8	4	06	None	15:37 HT	None
29/01/2026	VP2.15	13:51	16:51	7/8	5	06	None	15:21 HT	None
30/01/2026	VP2.14	08:37	11:37	8/8	4	06	None	10:07 LT	None

The majority of bird sightings recorded during the 2025/2026 vantage point surveys were located within the boundaries of the Lough Swilly SPA. The findings of the VP surveys are provided within Appendix 5: Wintering Bird Evidence for each VP in tables A5-3 to A5-6 and mapped in Appendix 2 NIS Drawings: Drawing 36 to 39 Section 2 2025-2026 Wintering Bird Survey Results. A total of 28 species of water birds were recorded across all VPs of which 12 were SCI species.

#### 5.2.2.5.1.2 Windscreen surveys

The survey effort for the windscreen surveys is shown in Table 5.17 below.

**Table 5.17: Weather Data for Windscreen Surveys- Section 2**

Date	Start	End	Cloud (Oktas)	Wind (Beaufort)	Precipitation	Temp. (°C)	Disturbance
12/09/2025	09:00	14:00	7/8	5	None	14°C	None
28/10/2025	09:00	14:00	8/8	1	Occasional light drizzle	12°C	None
18/11/2025	08:20	13:20	8	3	Occasional shower	2°C	None
05/12/2025	08:30	12:30	8	4	heavy showers at end of survey	8°C	None
15/01/2025	09:30	15:00	8	4	Light showers	8°C	None

The findings of the windscreen surveys are provided within Appendix 5: Wintering Bird Evidence in table A5-7 and mapped in Appendix 2 NIS Drawings: Drawing 36 to 39 Section 2 2025-2026 Wintering Bird Survey Results. A total of 20 species of water birds were recorded across all surveys of which 11 were SCI species.

#### 5.2.2.5.1.3 Summary of 2025/26 Survey Findings

The surveys identified that 4 SCI species of the Lough Swilly SPA were recorded at levels that were above the 1% threshold of the SPA in close proximity to the Proposed Development. These species were curlew, greylag goose, redshank and teal.

Curlew were recorded above the 1% threshold on all surveys undertaken from September to January with the majority of these sightings being located within the area to the north of the Letterkenny airfield. A peak count of 132 birds (7.7% of the baseline population) was in an area to the north of the airfield. Curlew were recorded within the Milk Isle bridge crossing area above the 1% threshold during two months of the 2025/26 survey period with a peak flock count of 22 (1.3% of the baseline population) recorded. This reflects a similar distribution and numbers as identified during the previous survey years.

Greylag goose were recorded above the 1% threshold during two out of the five survey months within the proposed disturbance zone of the Proposed Development. These sightings were located within the area to the north of Letterkenny airfield with a peak flock count of 299 (13.7% of the most recent population estimate). This reflects the distribution and numbers identified in previous survey years. There were no recorded sightings of greylag goose within the Milk Isle proposed bridge crossing location during the 2025/2026 surveys, and therefore they were only recorded in this area during the 2022/2023 survey as described below.

Redshank were recorded above the 1% threshold on one occasion within the proposed disturbance zone of the Proposed Development. The majority of records are from within the SPA boundary and are located within the estuarine channel of the Swilly. The only record above the 1% threshold was of 19 birds (1.4% of the baseline population) during the September survey. This reflects, a similar distribution and numbers identified in previous survey years, although this was the only year that redshank were recorded above the 1% threshold within the potential disturbance zone.

Teal were recorded above the 1% threshold within the potential disturbance zone of the Proposed Development during three months of five months surveyed. The majority of the records were recorded within the Lough Swilly SPA and all were of records from within the estuarine habitat. The majority of these records are located in close proximity to the proposed bridge crossing close to Milk Isle. The peak flock count of 58 birds (3.7% of the baseline population) was recorded during the December surveys. This reflects a similar distribution to previous surveys, however they were recorded in slightly higher numbers within the zone of disturbance than the previous surveys.

#### 5.2.2.5.2 2022/2023 Survey

##### 5.2.2.5.2.1 Vantage Point Surveys

The survey effort of the Airfield and Manorcunningham/Big Isle vantage point surveys is described in Table 5.18 and

Table 5.19, respectively.

**Table 5.18: Vantage Point 2.11 (Airfield) Survey Effort**

Date	Start	End	Cloud (Oktas)	Visibility (Met Office)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Sunrise
23/11/22	11:00	14:00	4/8	excellent	SW 4	8	0	Low	08:15
30/11/22	09:00	12:00	7/8	>5 km	S 2	9	0	Low-rising	08:29
14/12/22	10:00	13:00	5/8	excellent	NNE 2	1	1	High-falling	08:39
19/12/22	13:00	16:00	7/8	excellent	S 5	12	1	High	08:41
11/01/23	09:00	12:00	6/8	excellent	ENE 6	4	1	High-falling	08:50
13/01/23	13:30	16:30	2/8	excellent	W 4	7	1	Falling-low	08:48
09/02/23	08:00	11:00	3/8	excellent	NW 2	6	0	High-falling	08:07
22/02/23	11:00	14:00	3/8	excellent	NW 4	7	0	Falling-low	07:38
08/03/23	09:00	12:00	1/8	excellent	E 3	-1	0	Falling-low	07:05
31/03/23	13:00	16:00	7/8	excellent	N 2	11	0	Rising-high	07:07

**Table 5.19: Vantage Point 2.10 (Manorcunningham/Big Isle) Survey Effort**

Date	Start	End	Cloud (Oktas)	Visibility (Met Office)	Wind (Beaufort)	Temp. (°C)	Precip.	Tide	Sunrise
23/11/22	08:00	11:00	4/8	>5 km	SE 3	7	0	Falling	08:15
30/11/22	12:00	15:00	7/8	>5 km	S 4	10	0	High-falling	08:29
14/12/22	13:00	16:00	4/8	excellent	NE 2	2	1	Falling-low	08:39
19/12/22	10:00	13:00	7/8	excellent	S 5	12	1	Low-rising	08:41
11/01/23	13:00	16:00	6/8	excellent	W 5	6	1	Falling-low	08:50
13/01/23	10:30	13:00	2/8	excellent	W 4	6	1	High-falling	08:48
09/02/23	11:00	14:00	5/8	excellent	WSW 4	8	0	Falling-low	08:07
22/02/23	07:30	10:30	4/8	excellent	WNW 3	3	0	High-falling	07:38
08/03/23	12:30	15:30	1/8	excellent	ENE 4	4	0	Low-rising	07:05
31/03/23	09:30	12:30	8/8	excellent	NE 3	10	0	Low-rising	07:07

The peak counts, across all surveys, of the primary and secondary target species are shown in Table 5.20. The peak counts, for each survey, of the primary and secondary target species are displayed in Table A5-1 in Appendix 5: Wintering Bird Evidence. It was noted that none of the primary target species flew towards the Proposed Development during the vantage point surveys and they showed a much higher fidelity to the fields adjacent to the Swilly Estuary and within the Lough Swilly SPA boundary.

**Table 5.20: Peak Counts of Species Recorded During Vantage Point Surveys**

Species	BoCCI Status	Manorcunningham/Big Isle	Airfield
<b>Primary target species</b>			
Canada goose	Green	2	0
<b>Greenland white-fronted goose*</b>	Amber (W)	475	0
<b>Greylag goose*</b>	Amber (W)	2,115	230
<b>Secondary target species</b>			
<b>Black-headed gull*</b>	Amber (B/W)	127	340
Buzzard	BoCCI	1	2
<b>Common gull*</b>	Amber (B/W)	0	3
Cormorant	Amber (B/W)	1	0
<b>Curlew*</b>	Red (B/W)	43	5
<b>Dunlin*</b>	Red (B/W)	1,400	0
Eider	Red (B/W)	10	0
Golden plover	Red (B/W)	950	0
Great black-backed gull	Amber (B/W)	0	1
<b>Greenshank*</b>	Amber (B/W)	2	0
Grey heron	Green	1	3
Lapwing	Red (B/W)	1,230	600
Lesser black-backed gull	Amber (B/W)	23	162
Little egret	Green	3	7
<b>Mallard*</b>	Amber (B/W)	60	2
<b>Oystercatcher*</b>	Red (B/W)	93	208
Raven	Green	1	1
<b>Redshank*</b>	Red (B/W)	12	2
<b>Shelduck*</b>	Amber (B/W)	250	0
<b>Teal*</b>	Amber (B/W)	27	0
Tufted duck	Amber (B/W)	48	0
Whimbrel	Green	0	24
<b>Wigeon*</b>	Amber (B/W)	152	0

Key to table: B = BoCCI listed for breeding population; W = BoCCI listed for overwintering population; **BOLD\*** = Lough Swilly SPA SCI

The winter 2022/23 Vantage point surveys confirmed that the vast majority of species were utilising the areas towards Manorcunningham and the Big Isle area with smaller numbers utilising land to the north of the Letterkenny airfield.

### 5.2.2.5.2.2 Windscreen Survey

The survey timings and conditions of the windscreen survey is described in Table 5.21.

**Table 5.21: Windscreen Survey Effort**

Date	Start	End	Cloud (Oktas)	Visibility (Met Office)	Wind (Beaufort)	Temp. (°C)	Precip.
18/11/22	09:00	14:30	6/8	excellent	NW 3	9	1
20/12/22	10:00	15:30	6/8	excellent	SW 1	5	1
31/01/23	08:30	14:00	8/8	>5 km	W4	7	1
01/02/23	09:00	14:30	8/8	>5 km	W4	7	Rain showers
03/03/23	09:30	15:00	8/8	>10 km	E2	6	Dry

The total counts of the primary and secondary target species during each windscreen survey are in Table 5.22. The locations and counts of each flock recorded during windscreen surveys are in Table A5-2 in Appendix 5: Wintering Bird Evidence and mapped in Appendix 2 NIS Drawings: Drawing 40 to 42 Section 2 2022-2023 Wintering Bird Survey Results.

**Table 5.22: Counts of Species Recorded During Windscreen Surveys**

Species	BoCCI Status	Count				
		18/11/2022	20/12/2022	11/01/2023	01/02/2023	03/03/2023
<b>Primary Target Species</b>						
<b>Greenland white-fronted goose*</b>	Amber (W)	—	57	15	56	54
<b>Greylag goose*</b>	Amber (W)	57	369	203	499	138
<b>Whooper swan*</b> (juvenile)	Amber (W)	—	—	2	—	—
<b>Secondary Target Species</b>						
<b>Black-headed gull*</b>	Amber (B/W)	—	10	17	40	13
Black-tailed godwit	Red (W)	1	100	—	—	40
Buzzard	Green	1	—	—	—	—
<b>Common gull*</b>	Amber (B/W)	—	—	—	—	14
<b>Curlew*</b>	Red (B/W)	490	527	21	118	118
<b>Dunlin*</b>	Red (B/W)	—	5	—	—	—
<b>Greenshank*</b>	Amber (B/W)	1	—	2	—	—
<b>Grey heron*</b>	Green	1	—	—	—	—
Herring gull	Amber (B/W)	—	67	4	10	—
Kingfisher	Amber (B)	1	—	—	—	—
Lapwing	Red (B/W)	300	640	67	880	—
Lesser black-backed gull	Amber (B/W)	—	1	—	—	—
<b>Mallard*</b>	Amber (B/W)	—	—	12	—	2
<b>Oystercatcher*</b>	Red (B/W)	1	1	—	27	6
<b>Redshank*</b>	Red (B/W)	—	226	1	—	—
White-tailed eagle	Red (B)	1	—	—	—	—

Key to table: B = BoCCI listed for breeding population; W = BoCCI listed for overwintering population; **BOLD\*** = Lough Swilly SPA SCI

The surveys identified that two SCI species of the Lough Swilly SPA were recorded at levels that were above the 1% threshold of the SPA in close proximity to the Proposed Development and within a potential disturbance zone, these were for curlew and greylag goose.

Curlew were recorded at the three distinct areas above the 1% threshold, at the Milk Isle bridge crossing area, in proximity to the Letterkenny airfield and in the area of the Isle Burn close to the Manorcunningham roundabout. A peak count of 94 birds (5.5% of the baseline population) was recorded near the Manorcunningham roundabout during the March survey. At the Milk Isle bridge crossing area curlew were above the 1% threshold on three of the five survey visits, with a peak count of 33 individuals (1.9% of the baseline population).

The majority of records for greylag goose were recorded from the area to the north of Letterkenny airfield and out towards Big Isle. Numbers were recorded above the 1% threshold within the potential disturbance zone from the Proposed Development on three of the five survey months. They were recorded at the Milk Isle bridge crossing location during two months with a peak flock count of 68 birds (3.1% of the most recent population); and to the area to the north of the airfield also during two months with a peak count of 350 (16.0% of the most recent population).

No teal or redshank were recorded during the 2022/2023 survey period in numbers that were deemed significant within the potential disturbance zones for the Proposed Development.

No other significant populations of SCI birds were recorded within close proximity to the proposed works during these surveys.

### 5.2.2.5.3 2017 to 2021 Surveys

For context the results of the 2017 to 2021 wintering bird surveys are summarised below. They generally mirror the findings of the 2023-2026 wintering bird surveys in the SCI species recorded in significant numbers. The later survey results have recorded greater numbers of the majority of the SCI species than those identified during these survey periods and therefore that most recent data is used for the assessment.

Section 2 surveys extended from the Port Bridge in Letterkenny, as far as Letterkenny Golf Club (VP1 – Golf Course). Surveys during the 2017/2018 to 2019/2020 seasons established that the largest assemblages of SCI species of Lough Swilly SPA within the Proposed Development boundary were constantly present where the estuary opens up at VP2 – Pontoon Area (Appendix 2 NIS Drawings: Drawing 09) between Glebe Crescent and Letterkenny Golf Club, approximately 2.8 km downstream of the proposed bridge crossing location.

#### 5.2.2.5.3.1 High Tide Counts

High tide counts targeted at the proposed bridge crossing area during 2018 to 2020 found 13 waterbird species utilising the area, ten of which are SCIs of Lough Swilly SPA (see Table 5.23: Lough Swilly SCI Species Recorded at Proposed Bridge Crossing Location (VP4) – High Tide Count). Of the 12 survey visits carried out at the proposed bridge crossing area (VP4 – Bridge; see Appendix 2 NIS Drawings: Drawing 09) only two species occurred with relative consistency (six or more times), namely curlew (present during seven visits) and black-headed gull (present during ten visits). The maximum recorded number for these species over 12 visits was 64 and 132, respectively.

The maximum occurrence of curlew that utilised the bridge crossing area at any one time during the surveys was 64 individuals. When this figure is compared to the total population within the SPA taken from the conservation objectives supporting document (NPWS, 2011d) this equates to 3.7% of the baseline designated figure.

The black-headed gulls are an SCI for their breeding numbers and no wintering numbers are provided within the NPWS supporting information for the Conservation Objectives (NPWS, 2011d). No All-Ireland threshold figures have been set for wintering black-headed gull and the wintering international threshold is 48,000. When compared to the international population size it equated to 0.27% of the numbers required to qualify for International Threshold Status. The conservation objective only refers to maintaining breeding numbers and therefore black headed gull can be discounted as SCI for their wintering numbers.

Teal were recorded above the 1% threshold of the SPA population on two of the five times they were recorded. The peak count for teal was 35 individuals this equates to 2.2% of the baseline population for the SPA.

The remainder of the species present during high tide counts occurred either five times or less over the 12 visits, all of which were in low numbers (below the 1% threshold) and therefore not considered to be significant in numbers as a component of the SPA or qualify for national or internationally important numbers.

**Table 5.23: Lough Swilly SCI Species Recorded at Proposed Bridge Crossing Location (VP4) – High Tide Count**

Common Name	Species Name	No of Individuals Recorded											
		23/10/2018	19/11/2018	10/12/2018	29/01/2019	27/02/2019	26/03/2019	23/10/2019	26/11/2019	17/12/2019	22/01/2020	20/02/2020	10/03/2020
Curlew	<i>Numenius arquata</i>	64	2	-	-	-	-	2	44	56	-	1	29
Black-headed Gull	<i>Chroicocephalus (Larus) ridibundus</i>	6	25	-	-	11	14	22	15	45	42	7	132
Grey Heron	<i>Ardea cinerea</i>	-	1	-	-	1	-	1	-	-	-	-	1
Teal	<i>Anas crecca</i>	-	-	-	-	9	-	32	6	14	35	-	-
Shelduck	<i>Tadorna tadorna</i>	-	-	-	-	-	5	-	-	-	-	-	-
Mallard	<i>Anas platyrhynchos</i>	-	1	-	-	-	2	-	-	-	-	-	-
Oyster-catcher	<i>Haematopus ostralegus</i>	-	-	-	-	-	-	-	1	-	-	-	-
Whooper Swan	<i>Cygnus cygnus</i>	-	-	-	-	-	-	-	-	-	2	-	-
Wigeon	<i>Mareca penelope</i>	-	-	-	-	-	-	-	-	-	-	-	2
Redshank	<i>Tringa totanus</i>	2	-	-	-	9	-	7	3	-	1	-	-

#### 5.2.2.5.3.2 Dawn and Dusk Surveys

Dawn and dusk surveys carried out during the 2019/2020 wintering season showed that 11 species were present around the proposed bridge crossing “VP4 – crossing”, eight of which were SCI species of Lough Swilly SPA (see Table 5.24).

Five of the total 11 species occurred only once over the survey period and were in single- or low double-digit numbers, which are negligible compared to All-Ireland and International thresholds for those species (which are in 100s or 1,000s figures in order to qualify). Species using the lands associated with the proposed bridge area in relatively higher significant numbers were curlew and teal. Curlew occasionally used the fields south of the proposed bridge crossing, namely Milk Isle directly south of the proposed bridge crossing. Curlew only occurred during dawn surveys and always flew in from downstream at full light and do not use the area for roosting activity. Curlew predominantly utilised the estuarine area approximately 200 m upstream of the proposed bridge crossing. During dawn surveys, the maximum of curlew recorded using the lands associated with the proposed bridge crossing was 3.25% of the baseline designation figure (NPWS, 2011d). Curlew were not present during the dusk counts and only recorded in significant numbers during 3 of the 12 surveys.

Teal exclusively utilised the estuary habitat at the outfall of the Swilly (Donegal)\_010 watercourse meeting the main channel of the river Swilly in this area. This is within 500m of the proposed works. For the teal recorded, the maximum count recorded during the dawn and dusk surveys was 1.1% of the baseline designation population but were only once recorded above the 1% threshold for the SPA population.

**Table 5.24: Lough Swilly SCI Species Recorded at Proposed Bridge Crossing Location (VP4) – Dawn/Dusk Counts**

Common Name	Species Name	No. of Individuals Recorded													
		23/10/2019 Dawn	23/10/2019 Dusk	26/11/2019 Dawn	26/11/2019 Dusk	17/12/2019 Dawn	17/12/2019 Dusk	22/01/2020 Dawn	22/01/2020 Dusk	20/02/2020 Dawn	20/02/2020 Dusk	10/03/2020 Dawn	10/03/2020 Dusk		
Teal	<i>Anas crecca</i>	11	6	6	-	14	2	18	7	-	6	-	-		
Black Headed Gull	<i>Chroicocephalus (Larus) ridibundus</i>	3	13	52	-	45	4	26	40	53	40	132	25		
Curlew	<i>Numenius arquata</i>	-	-	44	-	56	-	1	-	-	-	29	-		
Redshank	<i>Tringa totanus</i>	4	2	3	-	-	2	1	-	-	1	-	-		
Grey Heron	<i>Ardea cinerea</i>	1	-	-	-	-	-	1	-	-	-	1	-		
Oystercatcher	<i>Haematopus ostralegus</i>	-	-	1	-	-	-	-	-	-	-	-	-		
Whooper Swan	<i>Cygnus cygnus</i>	-	-	-	-	-	-	1	-	-	-	-	-		
Wigeon	<i>Mareca penelope</i>	-	-	-	-	-	-	-	-	-	-	2	-		

From the full suite of surveys of the Proposed Development boundary from 2017 to 2020 and the additional targeted surveys of the proposed bridge crossing from 2018 to 2020, there are SCI species regularly utilising the lands associated with the proposed bridge crossing. However, they occur in very low numbers compared to the overall SPA populations and the nationally/internationally important numbers criteria.

Following the 2017 to 2020 surveys, the 2020-2021 surveys were refined and informed by the findings of the previous three seasons of survey. The 2020-2021 surveys focussed on the relative importance of the proposed Swilly crossing, particularly the importance of terrestrial feeding/roosting areas. The locations of these can be seen in Appendix 2 NIS Drawings: Drawing 10 Section 2 2020-2021 Wintering Bird Study Area.

Only four species were recorded using the terrestrial sites surveyed between a first reconnaissance count at the end of January 2021, and the commencement of systematic surveys twice monthly between late January and early April 2021. Surveys were undertaken on six occasions: 24 January, 6 and 7 February, 21 and 22 March, and 8 April 2021.

Curlew were recorded only once using two adjacent fields at the proposed Swilly crossing. A flock of 62 birds were using the grass fields with sheep present (marked "A" in Appendix 2 NIS Drawings: Drawing 10 Section 2 2020-2021 Wintering Bird Study Area) adjacent to VP2.6 for approximately two hours on 6 February.

Further east, towards Big Isle, approximately 400 m to 450 m north-north-east of 'VP2.9 (Backup Goose VP)', a single flock of greylag geese (approximately 35 birds) were present during every survey in the fields north of the airfield (approximately at coordinates, ITM 620736 912180). In previous years, flocks of greylag geese, Greenland white-fronted geese, and brent geese were frequently counted in these fields.

Despite a single relatively high count of 62 curlew (3.6% of the baseline population) in the field at the crossing point in February 2021 this was the only occasion (during the 2020/21 survey period) when birds were observed utilising the field.

### 5.2.3 Section 3

The northern one-third of Section 3 is set within the 39 Lough Swilly water catchment draining via the Pluck tributaries of the Leslie Hill stream (Isle Burn) to meet Lough Swilly SAC at the existing N13 culvert crossing within Section 2 (at Site W2-15). The southern two-thirds of Section 3 are located in the 01 Foyle water catchment draining via the main channel of the River Finn, and small tributaries and main channels of the River Deele and Swilly Burn to the River Finn SAC and contiguous River Foyle and Tributaries SAC of Northern Ireland (NI). For detail see Appendix 2 NIS Drawings: Drawing 3 General Arrangement Drawings and Drawing 15 Watercourse Survey – Intersection with Section 3.

#### 5.2.3.1 QI Habitat Receptors - Terrestrial

The landscape within the Proposed Development boundary of Section 3 is predominantly gently undulating with scattered low drumlin hills. Most of the land is intensively managed agricultural grasslands (GA1) subdivided by hedgerows (WL1) and treelines (WL2). There are occasional small blocks and strips of wet woodland (WN6) and scrub (WS1) scattered throughout the study area, many of these occurring along watercourses. None of these habitats have affinity to Annex 1 habitats.

There are no terrestrial Annex 1 habitats for which the River Foyle and Tributaries SAC is designated. The terrestrial Annex I habitats for which the River Finn SAC is designated are:

- Northern Atlantic wet heaths with *Erica tetralix* [4010]
- Blanket bogs (\* if active bog) [7130]
- Transition mires and quaking bogs [7140]

As per Section 1, these are bog/mire habitats which are all located, at a minimum, approximately 46km upstream of Section 3 of the Proposed Development and will not be impacted or affected by the Proposed Development due to the absence of connectivity and effect pathways. These habitats are even more distant upstream from Section 3 than Section 1 and, therefore, the absence of connectivity or effect pathway is even more evident.

#### 5.2.3.2 QI Species Receptor - Otter

Evidence of otter activity was recorded during the surveys undertaken in 2020 at W3-08 (Ch4+550) on a tributary of the Leslie Hill Stream, where a spraint was present under the existing bridge on the N14. Tracks, spraints and trails were recorded along the River Finn (W3-21) indicating regular activity, though no holts or couches were recorded in the vicinity of the proposed crossing. Dense vegetation along the southern river bank upstream of the crossing point may, however, conceal holts or couches. No other field signs of otter were recorded during the mammal survey undertaken for the scheme, and their distribution is likely limited by the poor water quality and lack of fish on most of the smaller watercourses. Nonetheless, periodic movement can be expected to occur on all watercourses crossed by the Proposed Development.

During the update verification surveys undertaken in September 2025 the findings found no material difference to those recorded in 2020. Evidence of otter activity was recorded in the form of tracks, spraints and trails; however, no evidence of active holts or couches was recorded.

Based on the most up-to-date baseline information available, otters are active within the River Finn and the tributaries that feed it and within the Swilly Estuary catchment and tributaries. However, there are currently no active otter holts or couches identified (as relevant to the Proposed Development and, specifically, Section 3). It is the most up-to-date baseline against which the NIS assessment has been made; recognising that otters are a dynamic species within a dynamic aquatic ecosystem.

#### 5.2.3.3 SCI Species Receptors – Breeding Birds

A comprehensive breeding bird survey has been undertaken with reference to the guidance set out in Bibby et al. (2000) and the Breeding Bird Survey (BBS) methodology as described by BTO. These surveys identified a typical range of species that would be associated with agricultural land and urban edge habitats.

No notable populations of one or more species or a notable assemblage of breeding bird species was identified as a result of the breeding bird surveys. The habitats present within the CPO boundary have been regularly surveyed and updated with the final survey undertaken in 2025 to verify that the habitats had not significantly changed. The only changes to habitat value were noted in a negative trend, with further intensification of management or habitat loss. Given that the habitats have not changed significantly and in a negative assessment of value, the breeding bird assemblage and potential for notable populations will not have changed over time and the results of the breeding bird surveys can be regarded as comprehensive and valid for the assessment of value.

The Lough Swilly SPA is designated for 3 species with regards to their breeding populations, black-headed gull (*Chroicocephalus ridibundus*), Sandwich Tern, (*Sterna sandvicensis*) and Common Tern (*Sterna hirundo*). None of these species were recorded within the breeding bird surveys undertaken in 2020 for Section 3 (see **Appendix C9A.01** of the EIAR). The habitats present within Section 3 are not suitable to support breeding colonies of these species or to provide significant ex-situ foraging resources.

#### 5.2.3.4 SCI Species Receptors – Over-wintering Birds

For the results of the wintering bird surveys undertaken in relation to the Swilly Estuary that may be affected by works to the north of Section 3, where it joins the Section 2 works refer to Section 5.2.2.5.

Apart from the Swilly Burn floodplain which was found to support a wintering flock of whooper swan (see below), there were no important bird areas identified within the Proposed Development boundary and the habitats present are unsuited to supporting significant aggregations of wintering birds or likely flyways for wintering species. Flocks of golden plover (*Pluvialis apricaria*), listed on Annex I of the EU Birds Directive) and lapwing (*Vanellus vanellus*), a Red Listed species on Birds of Conservation Concern 2014-2019, may utilise agricultural grasslands throughout the Proposed Development boundary during the winter. Areas of wet grassland will also provide suitable habitat for dispersed populations of wintering snipe (*Gallinago gallinago*). None of these species are SCIs for the Lough Swilly SPA or Lough Foyle SPAs.

Whooper swan is known to utilise low-lying fields of improved agricultural grassland along the Swilly Burn floodplain in the townlands of Mulnaveagh and Tullyrap. A series of monthly surveys were undertaken during the winter periods 2018/2019 and 2020/2021 to determine whooper swan occurrence within the vicinity of the proposed route alignment. The results of the surveys found that Swilly Burn floodplain is the only significant foraging area in the vicinity of the scheme with the foraging being concentrated approximately 1 km to the east of the Proposed Development. There were no sightings or records of swans foraging along or in the immediate vicinity of the proposed alignment at the Swilly Burn crossing. A number of other sites in the general vicinity of the Swilly Burn are also used on a sporadic basis, with occurrence dependant on foraging suitability in any one year as determined by the farming activity (i.e. whether under grassland, tillage, potatoes, etc.). A field regularly planted with potatoes immediately east of the proposed alignment at Tullyrap is foraged over by whooper swan after harvesting.

During the surveys undertaken in the winter 2019-2020, swans were observed flying along the Swilly Burn in both an east-west and west-east orientation to and from the direction of Lough Foyle, as well as flying in a north-south orientation. While the watercourses may act as the main flyways, in view of the large populations of whooper swan wintering within the Swilly and Foyle estuaries, movement of birds could occur in any direction between core foraging and roosting areas and secondary sites further afield.

Bird surveys of the N14 and environs were undertaken in the winter period 2020-21, building on the survey work undertaken in previous winters. This comprised a full 'winter' season of bi-monthly counts in the area documenting the numbers, distribution, and movement patterns of whooper swan within the area which would form the basis of an evaluation of the relative importance of areas within the footprint of the scheme for the species (Appendix 6: Lifford Whooper Swan Report).

In the area within the N14 corridor there were two main areas of usage by whooper swan, see Figure 2 in Appendix 6: Lifford Whooper Swan Report for the location of the main flocks and subsites within the Swilly Burn area. The arrow shows in Figure 2 of Appendix 6: Lifford Whooper Swan Report the main movement corridor of birds in the vicinity when moving between foraging on potatoes at Feddyglass (Site 1) and other grassland sites (Site 2/3).

Site 1 is in two adjacent potato fields at Drumbeg while Site 2 is the Swilly Burn floodplain at Feddyglass, both of these sites are within 500m of the Proposed Development. A number of other grassland sites are used along the lower floodplain of the Swilly Burn and east and west of the river Foyle (Sites 3 to 6), these sites are all over 1.3km from the Proposed Development works. The utilisation of potato fields for foraging at Drumbeg (as elsewhere) is considered ephemeral and opportunistic when this habitat is available anywhere within traditional sites the swans will exploit them temporarily.

In the floodplain of the Swilly Burn whooper swan numbers peaked in February 2021 (n=282 birds) at Site 5, approximately 4.8km from the proposed works, when numbers were highest for a period of ~ four weeks.

For the two sites that are within 500m of the proposed works areas (Sites 1 and 2), smaller numbers of swans were recorded. Site 1 held birds during counts in December 2020 and during 1 count in January 2021. The peak count within site one was of 42 birds in December and 11 birds in January. For Site 2 birds were recorded during visits in December 2020, and in January, February and March 2021. Peak monthly counts for Site 2 were 2 in December, 54 in January, 36 in February and 39 in March.

Therefore, during the 2020 to 2021 survey period the peak count of Whooper Swan was 54 (3.2% of the Lough Swilly baseline population) within 500m of the Proposed Development.

No other SCI species were recorded in significant numbers within 500m of the Proposed Development, during the 2020/2021 survey season. Greylag goose was recorded during these surveys, but they were located in the Sites that are over 4km from the Proposed Development.

Whooper swan have been brought forward as an SCI species relevant to the NIS given that they were present in greater numbers than 1% population threshold of the Swilly Estuary SPA (see Section 5.2.2.5)

The survey timings and conditions of the windscreen survey undertaken during the 2025/2026 surveys are described in Table 5.25.

**Table 5.25: Weather Data for Windscreen Surveys- Section 3**

Date	Start	End	Cloud (Oktas)	Wind (Beaufort)	Precipitation	Temp. (°C)	Disturbance
29/10/2025	13:00	17:00	8/8	3	None	12	None
17/11/2025	08:15	13:15	8/8	2	None	7°C	None
19/11/2025	08:30	13:30	8/8	2	Occasional shower	0°C	None
15/12/2025	11:30	16:30	2/8	2	None	6°C	None
16/12/2025	09:00	13:00	2/8	2	None	5°C	None
08/01/2026	10:00	15:00	4/8	2	None	2°C	None
16/01/2026	08:30	14:00	4/8	3	None	6	None

The survey results of the Windscreen Survey are shown in Table 5.26 below and in Appendix 2 NIS Drawings: Drawings 21 Section 3 Windscreen Survey – Survey Results.

**Table 5.26: Species Counts for Windscreen Surveys - Section 3**

Species	BoCCI	29/10/25	17/11/25	19/11/25	05/12/25	16/12/26	08/01/26	16/01/26	Peak Flock Count
<b>Black-headed gull*</b>	Amber	-	-	122	-	-	-	53	300
<b>Common Gull*</b>	Amber	-	-	-	-	-	-	5	5
Herring gull	Amber	-	-	46	147	78	152	5	152
<b>Grey Heron*</b>	Green	-	-	-	7	-	-	-	7
<b>Greylag Goose*</b>	Amber	-	-	-	-	-	287	-	287
Lesser Black-backed Gull	Amber	-	-	-	-	-	-	4	4
<b>Whooper swan*</b>	Amber	-	-	-	-	-	95	8	51

**BOLD\*** = Lough Swilly SPA SCI

The results show that the majority of species recorded are located at a distance that is further than 500m from the Proposed Development. Black-headed gull were recorded three times within 500m of the Proposed Development and common gull once. However, black-headed gull and common gull are both SCIs for their breeding numbers, and no wintering numbers are provided within the NPWS supporting information for the Conservation Objectives (NPWS, 2011d). The conservation objectives only refer to maintaining breeding numbers and therefore black headed gull and common gull can be discounted as SCI for their wintering numbers. Greylag goose was recorded on one occasion in the January surveys with a flock of 287 birds present in a field approximately 0.7km to the Proposed Development at its closest point, and therefore outside of the potential zone of disturbance. Whooper swans were recorded only during the January surveys and were mainly located within the Swilly Burn floodplain. There was only one location where Whooper swans were recorded within 500m of the Proposed Development where a count of 8 birds (0.48% of the baseline population) approximately 480m from the proposed works area.

The area identified as Site 1 during the 2020/2021 surveys was no longer in potato production in the 2025/2026 survey and no swans were recorded in this location. The Site identified as Site 2 during the 2020/2021 surveys is consistent with the location of the 8 birds recorded during the 2025/2026 surveys.

Therefore, there were no occurrence during the 2025/2026 surveys where SCI species of birds were recorded above the 1% of importance for wintering birds within the Section 3 development works outside those areas within the Lough Swilly surveys.

### 5.2.3.5 QI Receptors – Aquatic

There are 21 watercourse crossings along the length of Section 3, in addition to several minor drainage ditches, the latter of which are not considered as having any aquatic ecological value on account of their small size and ephemeral nature. The main watercourses in the vicinity of the scheme have been subject to drainage schemes and are canalised with flood embankments with their historic floodplains providing intensive farmland. The northern section of the Proposed Development (watercourse W3-01 to W3-11) drains to the north towards Lough Swilly SAC via tributaries of the Leslie Hill Stream (also known as the Corkey River or the Isle Burn in its lower estuarine reaches). The central and southern portion of the route drain to the east via the Swilly Burn (W3-14) and River Deelee (W3-17) and their tributaries to the River Foyle. The extreme southern portion of the Proposed Development lies within the River Finn catchment and includes the proposed cross-border N14/N15 to A5 Link Bridge over the tidally influenced main channel of

the river (W3-21) just upstream of Lifford / Strabane. This is illustrated in Appendix 2 NIS Drawings: Drawing 4 Overview of Major River Catchments.

#### 5.2.3.5.1 Leslie Hill Stream/Corkey River Overview

The Leslie Hill Stream (also known as the Corkey River) flows into Lough Swilly at the northern end of the Proposed Development via the Isle Burn. The Isle Burn downstream of the N13 is within the Lough Swilly SAC (002287), and Lough Swilly Including Big Isle, Blanket Nook & Inch Lake pNHA (000166), while the Lough Swilly SPA (004075) commences a little over 1 km further downstream. The Leslie Hill Stream was reported as having good (Q4) water quality on its main stem at Leslie Hill and at Kinraigy during the latest EPA monitoring in 2023 (EPA Envision website). There is no EPA water quality data available for the tributaries of the Leslie Hill Stream that are crossed at several locations by the Proposed Development (W3-01 to W3-11). There was no existing data on the fisheries status of the Leslie Hill tributaries.

#### 5.2.3.5.2 Swilly Burn River Overview

The Swilly Burn rises to the northwest of Raphoe and flows into the transitional / estuarine reaches of the River Foyle. Its water levels are tidally influenced in the proposed crossing reach at W3-14. Its affected tributary (W3-12, W3-13) flows in a southerly direction paralleling the existing N14 and joins the main stem approximately 1 km downstream of the Proposed Development. The Swilly Burn has poor water quality downstream of Raphoe and is rated 'poor' status (Q2-3 / Q3) on the EPA Envision website from all sample stations in recent years (1997-2022) (also refer to Table 5.27). The Swilly Burn in the lower reaches in the vicinity of the Proposed Development has a significant infestation of Asian clam, an Invasive Alien Species (IAS) listed under the <sup>27</sup>Third Schedule of the Habitats Regulations (2011), as amended, (Loughs Agency, *pers.com.*). Relevant Lough Agency fisheries data (2020-2024) for the Swilly Burn catchment is set out in Appendix 6 – Loughs Agency Fisheries Data 2020-2024 and reviewed in conjunction with field study findings, below.

**Table 5.27: EPA Water Quality Monitoring Data – Section 3**

EPA Code	Station Name	2013	2016	2019	2022
01S030300	Swilly Burn – Br. 1.5km SE of Raphoe, S Magheraha	2-3	~	~	3
01D010600	Deele (Donegal) - Ballymonaster Br	4	4	4	3-4
01D010500	Deele (Donegal) - Bridge 1.5 km S.E. of Convoy	4	4	4	3
01F011100	River Finn – Castlefin Br.	~	~	3-4	3-4

#### 5.2.3.5.3 River Deele Overview

The River Deele rises in the Cark Mountain plateau which is located between the Derryveagh Mountains to the north and the Bluestack Mountains to the south. The River Deele and tributaries have a channel length of approximately 32 km and has a catchment area of 313 km<sup>2</sup> including other smaller rivers which discharge directly to the tidal River Foyle (Loughs Agency, 2010). Its water levels are tidally influenced in the proposed crossing reach at W3-17. The Deele has slightly impaired water quality within the study area recorded as Q3-4 (moderate status) at Ballymonaster Bridge in 2022, noting that upstream at Carrickbrack (c1.5 km downstream of Convoy) it was rated as poor status (Q3-4) in the same year (EPA Envision website). The Deele supports spawning by salmon mainly in its middle reaches (Loughs Agency, 2011). Relevant Lough Agency fisheries data (2021-2024) for the Deele catchment is set out in Appendix 8 – Loughs Agency Fisheries Data 2020-2024 and reviewed in conjunction with field study findings, below.

#### 5.2.3.5.4 River Finn Overview

The River Finn runs to the south of the proposed Section 3 development and will be crossed at survey point W3-21 by way of the proposed N14/N15 to A5 Link bridge (approx. Ch16+500). The river rises in the Bluestack mountain range in central Donegal and flows in a predominantly easterly direction through Ballybofey /Stranorlar to its confluence with the tidal River Foyle in the Lifford/Strabane area. In Section 3, the River Finn forms the international border between the Republic of Ireland (ROI) and Northern Ireland

<sup>27</sup> Also listed on 'First Schedule' of European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024)

(NI). The river and floodplains within County Donegal (ROI) are designated as the River Finn SAC (002301). On the County Tyrone (NI) side of the river, the Finn is under a contiguous conservation designation as the River Foyle and Tributaries SAC. The Finn main channel in Section 3 is tidally influenced and is a holding and migration route for salmon, not possessing spawning or nursery habitats. Within the ROI, the main channel of the River Finn is a designated Salmonid Water<sup>28</sup> (from a point c.500m upstream of the proposed new bridge at W3-21 (see Appendix 2 NIS Drawings: Drawing 15 Watercourse Survey – Intersections with Section 3)) and is considered one of Ireland's premier spring salmon waters (O'Reilly, 2014). Relevant Loughs Agency fisheries data for the Finn catchment (2021-2024) is set out in Appendix 8 – Loughs Agency Fisheries Data 2020-2024 and reviewed under Section 4.2.2.4 above (Section 1 baseline aquatic environment).

### 5.2.3.5.5 Field Survey Findings - Habitat and Fisheries Descriptions

Small tributaries of the Leslie Hill Stream are crossed at several locations by the Proposed Development (W3-01 to W3-04). During the surveys carried out as part of this assessment in 2020 and updated in 2025, water quality was recorded as representative of 'moderate' (Q3 / Q3-4), though the crossing in the upper reaches at Doorabble (W3-05) was recorded as being representative of 'good' status (Q4). While there is no current data on the fisheries status of the tributaries, the watercourses may support a run of Atlantic salmon in the lower reaches. At watercourse crossings W3-02 and W3-03, while there is potential salmonid spawning habitat, the doubtful water quality (as evidenced by floc and algae on the substrate) render it unlikely.

The lower reaches of the Swilly Burn river in the vicinity of the proposed crossing (W3-14) are canalised with large flood embankments and have a uniform gentle glide flow. The steep banks are dominated by rank grassland with occasional willow and a narrow fringe of reed canary-grass (*Phalaris arundinacea*) along the water's edge. The substrate is silty with some gravel and supports occasional patches of perfoliate pondweed (*Potamogeton perfoliatus*) and starwort (*Callitriche* sp.). The conditions at the crossing point and downstream to the Foyle estuary are unsuited for spawning by salmon and the doubtful water quality renders the habitat generally unsuitable as nursery habitat. Loughs Agency conduct electrofishing annually on the Swilly Burn at two sites near Raphoe (c.4km upstream of the proposed new bridge crossing). In the years 2020 to 2024 salmon were absent (Loughs Agency, *formal data request*) (refer to Appendix 8 – Loughs Agency Fisheries Data 2020-2024). This, in combination with poor water quality, demonstrates the limited potential for salmon spawning or nursery at the tidally influenced crossing point.

The Swilly Burn tributary, EPA name Drumbeg (survey sites W3-12, W3-13) does not support salmon (Appendix 8 – Loughs Agency Fisheries Data 2020-2024). Fisheries habitat is considered limited by poor water quality in the lower reaches of the tributary, although it was evident that water quality had improved slightly by site visits in 2025. Q values determined as part of this assessment found this tributary to be representative of poor (Q3) to moderate (Q3-4) ecological status over the course of surveys conducted in 2020 and 2025 (Appendix 9 – Q-value Data).

The proposed crossing point of the River Deelee (W3-17) is in the lower reaches of the river where it has been canalised with large flood embankments and is subject to tidal effect. The substrate is dominated by mud and algal mat with extensive beds of perfoliate pondweed and starwort, with occasional water crowfoot (*Ranunculus* sp.) and flote grass. The habitat pertains to a modified and enriched version of Annex I Habitat 3260 (Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation (termed "floating river vegetation") but is not within a site designated for this annexed habitat. The steep banks have a lower fringe of tall herb swamp (FS2) dominated by reed canary-grass, nettle (*Urtica dioica*), and Himalayan balsam (*Impatiens glandulifera*). The upper bank and flood embankment are under a mixture of rank and improved grassland. The River Deelee currently has slightly impaired water quality within the study area (see above EPA river monitoring data). The Deelee supports spawning by salmon, sea trout and brown trout mainly in its middle reaches, i.e., upstream of the proposed crossing point. Recent Loughs Agency electrofishing data (refer to Appendix 8 – Loughs Agency Fisheries Data 2020-2024) from the site nearest the proposed new bridge crossing (4.35km upstream of W3-14) showed good numbers of trout and salmon fry and parr each year between 2020 and 2024, inclusive (Loughs Agency, *formal data request*.) The river also supports populations of smelt, river/brook lamprey and possibly sea lamprey, along with European eel, stone loach, three-spined stickleback and minnow.

<sup>28</sup> European Communities (Quality of Salmonid Waters) Regulations (S.I. No. 293 of 1988)

The proposed crossing point of the River Finn in Section 3 is within the River Finn SAC on the Republic of Ireland (Co. Donegal) side and the River Foyle and Tributaries SAC of Northern Ireland (Co. Tyrone) side. This is because the river forms the international border in Section 3. The River Finn at survey point (W3-21) is a wide (50 m), deep (1-2 m) sluggish glide with high water colour, turbidity and is tidally influenced in terms of its water levels. There was minimal submerged instream macrophyte growth observed over multiple visits between 2020 and 2025, the only species recorded being patches of water starwort (*Callitriche* sp.) in the shallower margins. There is a narrow marginal fringing reed community on both banks dominated by reed canary grass (*Phalaris arundinacea*) with meadowsweet (*Filipendula ulmaria*) and water forget-me-not (*Myosotis scorpiodes*) and occasional scattered willow. The terrestrial habitat across the floodplain and up to the riverbank is classified as wet grassland (WS4) with the strip of fringing reed confined to the river margin. The instream aquatic vegetation does not pertain to 'floating river vegetation' (Annex I Habitat 3260, *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation) having only one characteristic species, in low abundance (Hatton Ellis *et al.*, 2003; EC, 2013). The habitat requires, at a minimum, four characteristic vegetation components to be classified as the designated type (Hatton-Ellis *et al.*, 2003). The proposed crossing point is 1.5 km upstream of the transitional water (UK Foyle and Faughan Estuaries; UKGBNI5NW250010).

The Section 3 River Finn crossing reach, and downstream of it, does not possess salmon spawning or nursery habitats, however the reach is a migration route for regular passage of adult fish moving upstream to spawn and smolts moving downstream to the sea. Salmon may use the area as a lie-up while waiting for increased flows before moving upstream. Migration of adult salmon upstream can occur at any time of the year. Spring fish (those that spend more than one year at sea and thus are typically larger) tend to move upstream in April and May while grilse (those that spend a single winter at sea) move upstream in the latter part of the summer and through autumn for the spawning period of autumn into winter. Smolts migrate to sea mainly during April to June under cover of darkness. All movements are mainly undertaken during periods of higher flow (Hendry & Cragg-Hine, 2003).

## 6 NATURA IMPACT ASSESSEMENT

### 6.1 Introduction

The AA Screening for the Proposed Development identified that it would result in likely significant effects, either alone or in-combination with other plans and/or projects, and therefore a Natura Impact Statement (NIS) was required in order to inform the Competent Authority's Appropriate Assessment of the Proposed Development. This document constitutes the NIS for the Proposed Development; which has been prepared based on the description of the Proposed Development (Chapter 3; the "Project" for the purpose of Article 6(3) of the EU Habitats Directive) and with reference to the Conservation Objectives of those European Sites brought forward from the AA Screening.

The NIS assesses whether the Proposed Development will result in an adverse effect on the integrity of European Sites with reference to their Conservation Objectives. The integrity of a European Site is defined as "...the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated"<sup>29</sup>. The published guidance (EC, 2018) states that the integrity of any European Site relates to its conservation objectives.

### 6.2 Summary from AA Screening for Appropriate Assessment

A Stage 1 screening for AA has been completed for the Proposed Development (documented under separate cover). It concluded that the Proposed Development was (i) not directly connected with or necessary to the management of the European Site(s) and (ii) was likely to have significant effects on European Site(s) either individually or in combination with other plans or projects. The European Sites identified from the AA screening as likely to be significantly affected by the Proposed Development are listed as follows alongside their designated QIs and SCIs:

- **River Finn SAC** (Site Code: 002301). The Qualifying Interests (QIs) of this SAC are summarised as:
  - [1106] Salmon (*Salmo salar*)
  - [1355] Otter (*Lutra lutra*)
  - [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*)
  - [4010] Northern Atlantic wet heaths with *Erica tetralix*
  - [7130] Blanket bogs (\*<sup>30</sup> if active bog)
  - [7140] Transition mires and quaking bogs
- **River Foyle and Tributaries SAC** (former Natura 2000 designation, UK0030320). The Qualifying Interests (QIs) of this SAC are summarised as:
  - [3260]: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation
  - [1106]: *Salmo salar* (Atlantic Salmon)
  - [1355]: *Lutra lutra* (Otter)
- **Lough Swilly SAC** (Site Code: 002287). The Qualifying Interests (QIs) of this SAC are summarised as:
  - [1130] Estuaries
  - [1150] Coastal lagoons\*
  - [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
  - [1351] Harbour Porpoise (*Phocoena phocoena*)
  - [1355] Otter (*Lutra lutra*)

<sup>29</sup> Section 4.6.4 of 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2018)

<sup>30</sup> \* indicates a priority habitat under the Habitats Directive

- [6410] *Molinia* meadows on calcareous, peaty or clayey silt-laden soils (*Molinia caerulea*)
  - [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- **Lough Swilly SPA** (Site Code: 004075). The Qualifying Interests (QIs) of this SAC are summarised as:
- [A005] Great Crested Grebe (*Podiceps cristatus*)
  - [A028] Grey Heron (*Ardea cinerea*)
  - [A038] Whooper Swan (*Cygnus cygnus*)
  - [A043] Greylag Goose (*Anser anser*)
  - [A048] Shelduck (*Tadorna tadorna*)
  - [A050] Wigeon (*Anas penelope*)
  - [A052] Teal (*Anas crecca*)
  - [A053] Mallard (*Anas platyrhynchos*)
  - [A056] Shoveler (*Anas clypeata*)
  - [A062] Scaup (*Aythya marila*)
  - [A067] Goldeneye (*Bucephala clangula*)
  - [A069] Red-breasted Merganser (*Mergus serrator*)
  - [A125] Coot (*Fulica atra*)
  - [A130] Oystercatcher (*Haematopus ostralegus*)
  - [A143] Knot (*Calidris canutus*)
  - [A149] Dunlin (*Calidris alpina*)
  - [A160] Curlew (*Numenius arquata*)
  - [A162] Redshank (*Tringa totanus*)
  - [A164] Greenshank (*Tringa nebularia*)
  - [A179] Black-headed Gull (*Chroicocephalus ridibundus*)
  - [A182] Common Gull (*Larus canus*)
  - [A191] Sandwich Tern (*Sterna sandvicensis*)
  - [A193] Common Tern (*Sterna hirundo*)
  - [A395] Greenland White-fronted Goose (*Anser albifrons flavirostris*)
  - [A999] Wetlands
- **Lough Foyle SPA** (Site Code: 004087). The Qualifying Interests (QIs) of this SAC are summarised as:
- [A001] Red-throated Diver (*Gavia stellata*)
  - [A005] Great Crested Grebe (*Podiceps cristatus*)
  - [A037] Bewick's Swan (*Cygnus columbianus bewickii*)
  - [A038] Whooper Swan (*Cygnus cygnus*)
  - [A043] Greylag Goose (*Anser anser*)
  - [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
  - [A048] Shelduck (*Tadorna tadorna*)
  - [A050] Wigeon (*Anas penelope*)
  - [A052] Teal (*Anas crecca*)
  - [A053] Mallard (*Anas platyrhynchos*)
  - [A063] Eider (*Somateria mollissima*)
  - [A069] Red-breasted Merganser (*Mergus serrator*)
  - [A130] Oystercatcher (*Haematopus ostralegus*)
  - [A140] Golden Plover (*Pluvialis apricaria*)
  - [A142] Lapwing (*Vanellus vanellus*)
  - [A143] Knot (*Calidris canutus*)
  - [A149] Dunlin (*Calidris alpina*)

- [A157] Bar-tailed Godwit (*Limosa lapponica*)
  - [A160] Curlew (*Numenius arquata*)
  - [A162] Redshank (*Tringa totanus*)
  - [A179] Black-headed Gull (*Chroicocephalus ridibundus*)
  - [A182] Common Gull (*Larus canus*)
  - [A184] Herring Gull (*Larus argentatus*)
  - [A999] Wetlands
- **Lough Foyle SPA** (former Natura 2000 designation, UK9020031). The Qualifying Interests (QIs) of this SPA are summarised as:
- [A005] Great Crested Grebe (*Podiceps cristatus*)
  - [A037] Bewick's Swan (*Cygnus columbianus bewickii*)
  - [A038] Whooper Swan (*Cygnus cygnus*)
  - [A043] Greylag Goose (*Anser anser*)
  - [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
  - [A048] Shelduck (*Tadorna tadorna*)
  - [A050] Wigeon (*Anas penelope*)
  - [A052] Teal (*Anas crecca*)
  - [A053] Mallard (*Anas platyrhynchos*)
  - [A063] Eider (*Somateria mollissima*)
  - [A069] Red-breasted Merganser (*Mergus serrator*)
  - [A130] Oystercatcher (*Haematopus ostralegus*)
  - [A140] Golden Plover (*Pluvialis apricaria*)
  - [A142] Lapwing (*Vanellus vanellus*)
  - [A143] Knot (*Calidris canutus*)
  - [A149] Dunlin (*Calidris alpina*)
  - [A157] Bar-tailed Godwit (*Limosa lapponica*)
  - [A160] Curlew (*Numenius arquata*)
  - [A162] Redshank (*Tringa totanus*)
  - [A999] Wetlands

The methodology used for identifying the above European Sites is set out in the AA Screening Report for the Proposed Development (documented under separate cover); the methodology deployed a Source-Pathway-Receptor model to define and refine Zones of Influence (Zols). The methodology is documented in full within the AA Screening Report. The European Sites listed above were taken forward for assessment within this NIS in order to inform the Competent Authority's Appropriate Assessment of the Proposed Development.

## 6.3 Potential Sources of Impact with Potential to Result in Adverse Effects

### 6.3.1 Potential Sources of Impact and Effect

The potential sources of impact which could result in adverse effects on the integrity of the European Sites brought forward from the AA Screening of the Proposed Development (as summarised above) have been derived from consideration of the activities arising from the construction and operation of the Proposed Development summarised in Chapter 3, above. The sources of impact which potentially result in adverse effects are all located within the CPO boundary of the Proposed Development as illustrated in Appendix 2 NIS Drawings: Drawings 1–3 General Arrangements Drawings. The sources of impact will generate direct effects within the CPO boundary (e.g., removal of vegetation) and indirect effects which extend beyond the

CPO boundary (e.g., construction/operational noise/vibration disturbance effects and downstream effects). The range of impacts and effects<sup>31</sup> that potentially arise as a result of the activities include:

### 6.3.1.1 Construction

- The earthworks required to enable construction. These include the removal of vegetation within the Proposed Development boundary, the stripping of soils/subsoils etc., additional pre-construction ground investigation and archaeological testing works, the cut/fill works necessary to establish the levels required for the Proposed Development surfaces and the excavation of borrow pits. Such activities will result in the direct removal of habitat, the potential for incursion into habitat outside the Proposed Development boundary and potential indirect effects such as changes in water quality, noise and vibrational disturbance together with dust-generating activities.
- Water quality effects from construction related activities, i.e., sediment run-off, turbidity and accidental spillage (concrete, hydrocarbons), with potential downstream impacts on aquatic habitats and fauna (fish, macroinvertebrates, instream plants).
- The construction of the road and associated structures, including the bridges and culverts, outfalls, surface water drainage infrastructure and the road surface itself. Such activities will result in the potential for incursion of vehicles, personnel and construction materials into habitat outside the Proposed Development boundary and indirect effects such as noise and vibrational disturbance together with dust-generating activities.
- The disturbance to QI and SCI species associated with the construction of the Proposed Development. Sources of disturbance include the noise and vibration associated with construction traffic and activities and the disturbance arising from the presence and activities of construction personnel. These effects are likely to extend into areas beyond the Proposed Development boundary.
- Potentially polluting activities such as dust-generating activities, the use of construction materials (including environmentally toxic materials such as cement, hydrocarbons and silt-generating materials (e.g. soils and aggregates)), and the requirement for construction compounds which would include material storage, re-fuelling activities and welfare facilities (including temporary foul drainage requirements).
- Introduction / spread of Invasive Alien Plant Species (IAPS) owing to earth and construction traffic movement which could then affect QI habitats and habitats upon which QI and SCI species are dependent for at least part of their life-cycle.
- Transference of the Invasive Alien Species (IAS), Asian clam (*Corbicula fluminea*) which has been recorded in the Foyle catchment, at the lower reaches of the Swilly Burn River, which has downstream connectivity to the River Finn SAC and River Foyle and Tributaries SAC.
- Disturbance, loss and/or degradation of habitat during instream works (culverting, channel realignment).

### 6.3.1.2 Operation

- The disturbance associated with the operation of the Proposed Development including the noise and vibration from road users whose effect are likely to extend beyond the Proposed Development boundary and the periodic requirement for maintenance activities associated with new structures, surface water attenuation and landscaping located within the Proposed Development boundary.
- Changes in water quality owing to road run-off pollutants.
- The risk of road traffic accidents resulting in pollution incidents which could result in effects on the habitats established within the surface water drainage features within the Proposed Development

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<sup>31</sup> Definition of "impact" and "effect" as per CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine*

boundary and result in downstream effects beyond the Proposed Development boundary on waterbodies into which the surface water drainage features of the Proposed Development discharge.

- The risk of collisions between the users of the roads and wildlife due to the additional “barrier effect” of the Proposed Development within the landscape.
- Habitat alteration / loss and/or fragmentation; particularly in relation to watercourse crossings.
- Bridge shading effects.
- Hydromorphology effects including changes to hydrology, morphology, hydrological continuity.
- Potential hydraulic changes resulting from instream structures.

### 6.3.2 Potential Effect Pathways

The potential pathways for the above effect are summarised as follows and drawn from the S-P-R analysis used during the preparation of the AA Screening for the Proposed Development:

- Direct removal of habitat within the Proposed Development boundary during construction. The extent of this pathway is restricted to within the Proposed Development boundary.
- Direct disturbance and/or deterioration of habitat adjacent to the Proposed Development boundary during construction, e.g., incursion of construction personnel, vehicles or materials. The extent of this pathway is difficult to determine since it is dependent on the extent of incursion, however it is reasonable to consider on a precautionary basis that this could be within c. 200 m of the Proposed Development boundary.
- Indirect deterioration of habitat adjacent to the CPO boundary during construction due to dust or vehicle emission-generating activities smothering or adversely affecting adjacent vegetation. The extent of the effects of dust are determined to be localised and within 200 m of the Proposed Development boundary (TII, 2022).
- Surface or groundwater hydrological changes because of the construction and operational activity within the Proposed Development boundary. The extent of this pathway is restricted to within the Proposed Development Boundary.
- Whilst no culverts are proposed on SAC waters across the Proposed Development, culverting (upstream) can result in indirect habitat degradation through temporary water quality degradation downstream and within areas that may support QI species. Improperly designed or maintained culverts can also form barriers to fish migration, fragmenting habitats in streams that currently or potentially support fish upstream of the SAC boundaries.
- Downstream changes in surface water quality and flow during construction and operation of the Proposed Development particularly with respect to silts, hydrocarbons, cements and other potentially environmentally toxic materials or accidental spillages of such materials in the environment. The extent of this pathway is determined by hydrological pathways of the surface water drainage system outside of the Proposed Development boundary and its connection to activities within the Proposed Development boundary.
- Direct removal or modification during construction of habitat upon which QI or SCI species or populations are dependent for part of their lifecycle, e.g. breeding, foraging or resting sites for certain bird species. The extent of this pathway is restricted to within the Proposed Development boundary.
- Indirect disturbance from noise or vibration on habitat upon which QI or SCI species or populations are dependent for part of their lifecycle outside the Proposed Development Boundary e.g. breeding, foraging or resting sites for certain bird species. The upper extent of potential noise disturbance is considered to be 500 m from the Proposed Development boundary (worst case) for the construction phase, and 500 m from new scheme roadway centrelines (worst case) during the operational phase of the Proposed

Development. 500 m was determined based on a threshold of construction and operational noise of 50 dB LA<sub>eq</sub>, 24hr below which it is anticipated that it will have no disturbance effect<sup>32</sup>. The distance is based on noisy construction equipment operating at site boundaries, and a high estimate of potential noise from roads of this type and speed limit, with distance attenuation neglecting the effects of air and ground absorption and assuming no topographical screening. With respect to vibration disturbance, its extent is considered to be 50 m from the Proposed Development boundary (worst case) during the construction and operational phases, respectively. The vibration disturbance 50 m distance is based upon measurements listed within BS5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

- Direct disturbance of QI or SCI species or populations because of their movement through or use of habitat within the Proposed Development boundary for part of their lifecycle e.g. movement of otter or salmonids along watercourses, the disturbance of breeding sites for certain bird species.
- Indirect disturbance of QI or SCI species or populations because of their movement through or use of habitat outside the Proposed Development boundary for part of their lifecycle. The sources of disturbance are noise and vibration due to construction and operation activities.
- Direct and indirect disturbance of QI or SCI species or deterioration of QI habitats due to use of artificial lighting during the operation of the Proposed Development. The extent of such an effect is considered to be within the immediate vicinity of where such lighting would be located.
- Indirect deterioration of habitats within the Proposed Development boundary during operational phase due to shading effect from bridge crossings. The extent of such effects is considered to be within the immediate vicinity of where bridge crossings are located.
- Direct and indirect deterioration of habitats within and outside of the Proposed Development boundary during the construction and operational activities resulting in the spread and establishment of invasive species in areas currently not occupied by such species. The extent of such an effect is mainly determined through downstream hydrological connections, however there is potential for the spread of invasive species through other pathways e.g. on materials imported/exported from the Proposed Development boundary during construction or operation of the Proposed Development.

## 6.4 Relevant Conservation Objectives of European Sites

The integrity of the European Sites brought forward into the NIS has been assessed with reference to Conservation Objectives for those Sites published by NPWS (for current Natura 2000 designations) and by DAERA (for former Natura 2000 designations within Northern Ireland). These have been referenced and considered during the preparation of the NIS. They are summarised as follows:

- **River Finn SAC** (Site Code: 002301) - [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO002301.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002301.pdf).
- **River Foyle and Tributaries SAC** (former Natura 2000 designation, UK0030320) - [https://www.daera-ni.gov.uk/sites/default/files/publications/doe/land-information-reasons-for-designation-special-area-of-conservation-river-foyle-and-tributaries-2006\\_0.pdf](https://www.daera-ni.gov.uk/sites/default/files/publications/doe/land-information-reasons-for-designation-special-area-of-conservation-river-foyle-and-tributaries-2006_0.pdf)
- **Lough Swilly SAC** (Site Code: 002287) - [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO002287.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002287.pdf).
- **Lough Swilly SPA** (Site Code: 004075) - [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO002287.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002287.pdf).
- **Lough Foyle SPA** (Site Code: 004087) - [https://www.npws.ie/sites/default/files/protected-sites/conservation\\_objectives/CO004087.pdf](https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004087.pdf).
- **Lough Foyle SPA** (former Natura 2000 designation, UK9020031) - <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/lough-foyle-spa-conservation-objectives-2015.pdf>.

<sup>32</sup> Figure 2 from Cutts, N. *et al.* (2009) *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance*

## 6.5 Threats and Pressures to European Sites

Table 6.1 presents the current threats, pressures and activities that represent negative impacts to each European Site as quoted on the Natura 2000 Data Forms for the six European sites discussed above. These threats and pressures are existing irrespective of any additional and potential pressures contributed by the Proposed Development.

**Table 6.1: Threats and Pressures of European Sites**

European Site	Threats and Pressures <sup>33</sup>
River Finn SAC (Site Code: 002301)	A04.01 [H] – Intensive grazing B02.02 [H] – Forestry clearance C01.01 [H] – Sand and gravel extraction C01.03.01 [H] - Hand cutting of peat E03.01 [M] - Disposal of household / recreational facility waste H01.05 [M] - Diffuse pollution to surface waters due to agricultural and forestry activities K01.01 [M] – Erosion
Lough Swilly SAC (Site Code: 002287)	E01.01 [H] - Continuous urbanisation F01 [H] - Marine and Freshwater Aquaculture G01 [H] – Outdoor sports and leisure activities, recreational activities H01 [H] – Pollution to surface waters (limnic, terrestrial, marine & brackish) J01 [H] - Fire and fire suppression F02 [M] – Fishing and harvesting aquatic resources F02.02.05 [M] - Benthic dredging
River Foyle and Tributaries NI SAC (UK0030320)	B02 [H] - Forest and Plantation management & use M01 [H] - Changes in abiotic conditions CO3 [M] - Renewable abiotic energy use C01 [M] - Mining and quarrying H01 [H] - Pollution to surface waters (limnic & terrestrial, marine & brackish) I01 [H] - Invasive non-native species J02 [H] - Human induced changes in hydraulic conditions F02 [M] - Fishing and harvesting aquatic resources
Lough Swilly SPA (Site Code: 004075)	A01 [H] – Cultivation F02.03 [M] – Leisure fishing G01.01 [M] – Nautical sports A04 [H] – Grazing E01 [M] – Urbanised areas, human habitation A08 [H] – Fertilisation
Lough Foyle SPA (Site Code: 004087)	E01 [H] - Urbanised areas, human habitation
Lough Foyle SPA (Site Code: UK9020031)	A02 [M] - Modification of cultivation practices F03 [M] - Hunting and collection of wild animals I01 [M] - Invasive non-native species M01 [H] - Changes in abiotic conditions D02 [M] - Utility and service lines M02 [H] - Changes in biotic conditions

<sup>33</sup> M = medium importance; H = high importance; identified via NPWS Article 17 reporting.

European Site	Threats and Pressures <sup>33</sup>
	D04 [M] - Airports, flightpaths
	G01 [M] - Outdoor sports and leisure activities, recreational activities
	J03 [H] - Other ecosystem modifications
	H03 [M] - Marine water pollution
	H01 [H]- Pollution to surface waters (limnic & terrestrial, marine & brackish)

## 6.6 Assessment of Proposed Development Against Conservation Objectives

The following sets out an assessment of the Proposed Development, as set out in Chapter 3, with respect to whether it would result in adverse effects on the integrity of the European Sites brought forward into the NIS from the AA Screening. A holistic assessment of the Proposed Development has been completed. It is recognised, however, that due primarily to the spatial extent of the Proposed Development, some of those European Sites and their designated QI/SCI species are only relevant to impacts and effects arising from part of the Proposed Development e.g. a particular Section of the Proposed Development or a particular part of a Section. For clarity, this is described in full, as necessary, below.

### 6.6.1 River Finn SAC (Site Code: 002301)

The Site-Specific Conservation Objectives of the River Finn SAC (NPWS, 2017a) are:

- To restore the favourable conservation condition of Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) in the River Finn SAC.
- To restore the favourable conservation condition of Northern Atlantic wet heaths with *Erica tetralix* in River Finn SAC.
- To restore the favourable conservation condition of Blanket bogs (\*if active bog) in River Finn SAC.
- To restore the favourable conservation condition of Transition mires and quaking bogs in River Finn SAC.
- To maintain the favourable conservation condition of Atlantic Salmon in River Finn SAC.
- To maintain the favourable conservation condition of Otter in River Finn SAC.

Each objective is defined by a list of attributes and targets which are expanded upon in the assessment below.

#### 6.6.1.1 Oligotrophic Waters Containing very Few Minerals of Sandy Plains (*Littorelletalia uniflorae*) [3110]

Mapping provided in NPWS (2017a) indicates that the distribution of the oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] habitat type does not extend beyond several upland lakes located in the upper reaches (over 20km upstream) of the river system (see Appendix 10: Oligotrophic Waters [3110]). The habitat type does not occur within any area adjacent to, or downstream of the Proposed Development, Section 2 of the Proposed Development also lies within a separate catchment to the River Finn; further removing any potential connectivity or pathway of adverse effects.

Given this spatial context, the Proposed Development will have no adverse effects on the integrity of the SAC with respect to this QI. Adverse effects to site integrity can be ruled out for this QI. Mitigation is not required during the construction phase or operational phase for this QI.

### 6.6.1.2 Northern Atlantic Wet Heaths with *Erica tetralix* [4010]

NPWS acknowledges that this habitat has not been mapped in detail with respect to the SAC (NPWS, 2017a) and states that “...*wet heath is associated with the blanket bog throughout the site and is found on the shallow peats and better drained slopes*”. Reference in particular is made to the wet heath at Owendoo/Cloghervaddy. Mindful of the association to blanket bog, it further states that “*upland blanket bog occurs throughout much of the upland area found at Tullytresna and in the Owendoo/Cloghervaddy bogs...*”. These sites and their locations are identified in Mooney *et al.* (1991).

Based on the above, all the sites referred to are a significant distance (over 19km) upstream of the Proposed Development. The habitat type does not occur within any area within or adjacent to or downstream of the Proposed Development.

Given this spatial context, the Proposed Development will have no adverse effects on the integrity of the SAC with respect to this QI since the Proposed Development does not prevent the published attributes and targets which underpin the Conservation Objective for this QI being maintained and achieved either during construction or operation of the Proposed Development. Adverse effects to site integrity **can be ruled out** for this QI. **Mitigation is not required** during the construction phase or operational phase for this QI.

### 6.6.1.3 Blanket Bogs (\* if active bog) [7130]

NPWS acknowledges that this habitat has not been mapped in detail with respect to the SAC (NPWS, 2017a) but states that “*upland blanket bog occurs throughout much of the upland area of the site along the edges of the river. However, more extensive examples are found at Tullytresna and in the Owendoo/Cloghervaddy bogs*”. These sites and their locations are identified in Mooney *et al.* (1991).

Based on the above, all the sites referred are a significant distance (over 19km) upstream of the Proposed Development. The habitat type does not occur within any area within or adjacent to or downstream of the Proposed Development.

Given this spatial context, the Proposed Development will have no adverse effects on the integrity of the SAC with respect to this QI since the Proposed Development does not prevent the published attributes and targets which underpin the Conservation Objective for this QI being maintained and achieved either during construction or operation of the Proposed Development. Adverse effects to site integrity **can be ruled out** for this QI. **Mitigation is not required** during the construction phase or operational phase for this QI.

### 6.6.1.4 Transition mires and quaking bogs [7140]

NPWS acknowledges that this habitat has not been mapped in detail with respect to the SAC (NPWS, 2017a) but states that:

*“...transition mires (or quaking bogs or scraws) occur at several locations, usually at the interface between bog and lake or stream. In Owendoo/Cloghervaddy there are many examples of small lakes south of Belshade. Some of the lakes contain floating scraws of the bog moss *S. recurvum*, Bottle Sedge (*Carex rostrata*), Bog-sedge (*C. limosa*) and Bogbean (*Menyanthes trifoliata*). West of Owendoo River there is an extensive area of scraw with a similar suite of species but in differing abundances. Quaking areas are also associated with blanket bog at Cronamuck and Cronakerny. At Cronamuck, a small, level flushed area occurs at the base of a slope leading into a flushed stream. Diversity, including diagnostic species, is good”. Other locations where NPWS have noted this habitat include “...Tullytresna and the lake edges of Lough Fad, Lough Finn, Lough Gulladuff and the small lakes south of Lough Belshade (NPWS, 2017a)”. These sites and their locations are identified in Mooney, E. *et al.* (1991).*

Based on the above, all the sites referred are a significant distance (over 19km) upstream of the Proposed Development. The habitat type does not occur within any area within or adjacent to or downstream of the Proposed Development.

Given this spatial context, the Proposed Development will have no adverse effects on the integrity of the SAC with respect to this QI since the Proposed Development does not prevent the published attributes and

targets which underpin the Conservation Objective for this QI being maintained and achieved either during construction or operation of the Proposed Development. Adverse effects to site integrity **can be ruled out** for this QI. **Mitigation is not required** during the construction phase or operational phase for this QI.

### 6.6.1.5 *Salmo salar* (Atlantic Salmon) [1106]

#### 6.6.1.5.1 Ecology and Conservation Status

Existing threats to Atlantic salmon in Ireland are identified as: physical alteration of water bodies (H) and discharge of urban wastewater generating pollution to surface or ground water (M)<sup>34</sup>. In relation to conservation measures the main purpose of these measures are to “*increase the population size and/or improve population dynamics (improve reproduction success, reduce mortality, improve age/sex structure)*” and these measures are to be taken both within and outside European Sites. The conservation status of the species based on most recent reporting record that both the range and population of the species are both “*bad*” while the population, future prospects and overall assessment of conservation status of the species is recorded as “*bad*” (NPWS, 2025c).

The River Finn, in addition to being designated an SAC for the QI, is also designated a Salmonid Water (S.I. No. 293 of 1988). The baseline for salmon with respect to the River Finn with respect to the Proposed Development are set out above in Section 5.2.1.5 (Section 1) and Section 5.2.3.5.5 (Section 3), respectively. Section 1 has the greatest sensitivity with respect to salmon. The Finn main channel and the tributaries: Burn Durnett and Backlees are salmon spawning and nursery habitats. Salmon spawning and nursery habitats are also located in the Cloghroe River, a tributary of the River Deelee in Section 1, which has distant hydrological connectivity (c. 26.5 km downstream) to the River Finn SAC and River Foyle and Tributaries SAC. Section 3 has lower sensitivity in terms of salmon habitats, being a migration and holding route at the proposed major river crossing: River Finn N14/N15 to A5 Link bridge, where the river is drained, heavily silted and tidally influenced and lacks suitability for salmon spawning and nursery.

#### 6.6.1.5.2 Assessment of Adverse Effects on Integrity

The Conservation Objective for salmon for the River Finn SAC is “*to maintain the favourable conservation condition of Atlantic Salmon in River Finn SAC*” (NPWS, 2017a). The assessment against the underpinning attributes and targets of this objective for salmon is set out as follows and has been completed with reference to the Proposed Development Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

The Proposed Development will cross the River Finn SAC in two locations within the HA01 Foyle catchment:

- Section 1: new seven span bridge, 2.3 km upstream of Ballybofey/Stranorlar, crossing the River Finn main channel (85 m clear span) and the floodplain on the northern bank. No instream works or works (temporary or permanent) are required within the SAC.
- Section 3: new eight span bridge (N14/N15 to A5 Link) crossing the River Finn main channel (63 m clear span) and the floodplain on the northern bank, 1.4 km upstream of the existing A38 Lifford/Strabane bridge. No instream works (temporary or permanent) are required on the SAC river. Temporary works are required within the SAC to construct six bridge piers for the bridge approach across the floodplain on the northern side of the river (County Donegal, Republic of Ireland).

The two proposed bridges are 27 km apart. Apart from the construction phase incursion onto the SAC floodplain in Section 3 there is no other incursion into the River Finn SAC associated with entire Project. Direct impact within the SAC is therefore minimal, however, pathways for indirect impacts exist in the form of hydrological linkages between the road construction (in close proximity) and River Finn SAC.

Watercourses in Section 1 drain ultimately to the River Finn SAC, i.e., via the Burn Durnett, Backlees and Mullaghagarry sub-catchments to the River Finn main channel, and onwards to meet the River Foyle at Lifford/Strabane c. 25 km downstream. At the N15 northern tie-in, drainage is to the Cloghroe River within the River Deelee catchment. The Deelee flows > 25 km eastwards from the Cloghroe River confluence via

<sup>34</sup> M = medium importance; identified via NPWS Article 17 reporting.

Convoy to join the River Foyle just downstream of Lifford, with distant downstream connectivity (> 35 km) to Lough Foyle. / Deelee catchment. The River Deelee flows >25 km eastwards via Convoy to join the River Finn (within River Finn SAC) just downstream of Lifford with distant downstream connectivity to Lough Foyle.

The southern half of Section 3 drains via small tributaries and the main channels of the Swilly Burn, Deelee and Finn rivers, which all flow to the River Foyle and on to Lough Foyle. The River Foyle and 7 km of the lower River Finn (from Lifford/Strabane, upstream as far as Clady) forms the international border between Republic of Ireland (ROI) and Northern Ireland (NI). Along the border, the Foyle and Finn rivers are part of both the River Finn SAC (ROI) and River Foyle and Tributaries SAC (NI).

Whilst there will be no temporary construction phase in-channel works or permanent instream footprint within the River Finn in either Section 1 or Section 3, temporary works required to construct the six bridge piers on the River Finn floodplain within the River Finn SAC in Section 3 (N14/N15 to A5 Link bridge). This will result in a permanent footprint of 240 m<sup>2</sup> on the floodplain, affecting wet grassland habitat (which is not a qualifying interest habitat), related to the pier foundations set within the River Finn SAC (ROI). This occurs because the SAC boundary extends c. 165 m out from the river channel on the northern bank at the proposed bridge location. To underpin the assessment of effects on integrity, details of the proposed SAC bridge crossings are provided in the following descriptions for Sections 1 and 3. The overall assessment of potential adverse effects on integrity of River Finn SAC consider the combined Section 1 and Section 3 Proposed Development that is within the HA01 Foyle catchment.

### River Finn Crossing – Section 1

In Section 1, the proposed River Finn bridge upstream of Ballybofey requires no temporary construction related or permanent works within the SAC. This includes pre-construction additional GI works and archaeological testing. All such works in Section 1 occur outside (though directly adjacent) to the River Finn SAC boundary.

Expected construction sequence for the proposed Section 1 River Finn bridge crossing (Ch. +2400) (see design drawing Appendix 2 NIS Drawings: Drawing 22) is described in Appendix 1: Project Description, Section 4.13. The bridge construction duration is estimated to be approximately 18 to 24 months, within the 36-month overall construction period that occurs on either side of the proposed bridge. Descriptions of the bridge construction sequence should be read in conjunction with the Bridge Construction and Temporary Works drawings (see Appendix 2 NIS Drawings: Drawings 23–24). The drawings show temporary work areas for the structure in relation to SAC boundaries. In-stream works are not required for construction of the Section 1 River Finn bridge. This bridge construction involves no temporary or permanent in-stream footprint, or incursion into the SAC.

The proposed Section 1 River Finn bridge has seven-spans: 43 m, 55 m, 85 m, 55 m, 43 m, 39.5 m and 39.5 m giving a total length of 360 m. The 85 m main span will cross the full width of the River Finn plus the existing R252 road. The Southern Abutment and Piers 1 and 2 are located on the south side of the river. On the northern side of the river, Piers 3, 4, 5 and 6 continue across the floodplain meeting the Northern Abutment where the road embankment commences. The northern embankment / abutment is, at nearest, 85m from the SAC boundary.

The southern bridge pier (Pier 2) is set back from the channel by virtue of being immediately south of the R252 road, where temporary construction works occur at nearest just over 5m from the SAC boundary and approximately 8 m from the River Finn wetted channel. The southern piers and abutment construction areas are outside the 0.1%AEP<sup>35</sup> flood zone with low probability of flooding during construction. On the northern bank, the closest pier to the river (Pier 3) is set c.5m back from the SAC boundary and approximately 15 m in total from the River Finn wetted channel. However, the temporary construction works area is directly contiguous with the SAC boundary (10 m back from the Finn wetted channel).

It should be noted that the River Finn bridge crossing in Section 1 occurs over habitat with salmonid nursery sensitivity but has less spawning sensitivity locally; being a bouldery and swift glide with minimal suitable gravels. Owing to the river's fast-flowing nature at the crossing point, sediment would be less likely to

<sup>35</sup> OPW Floodmaps: <https://www.floodinfo.ie/map/floodmaps/> [Accessed November 2025]

accumulate locally but could impact on downstream spawning and nursery areas of the Finn as it winnows longitudinally.

In addition, the Section 1 River Finn Bridge / R252 link area has three proposed outfalls from permanent attenuation ponds to the river, comprising two from the southern bank: one near the mainline crossing (Pond 10), one near the R252 link road (Pond 11); and one from the northern bank (Pond 9). The attenuation ponds are outside the 1%AEP (+ 20% CCA) flood extent. The outfalls will be constructed without excavations at the riverbank. Instead, the outfalls will be set back from the channel, discharging over secured 'green' erosion protection mats, e.g., pipe to swale scenario (vegetated armour such as Hanes ScourStop® transition matting, or similar). It is important to note that once installed, attenuation ponds and interceptor ditch outfalls are primarily ephemeral in nature (intermittent flow during certain rain events) meaning their outfalls are not continuous sources of flow with scouring potential at the riverbank. Water quality of such outfalls is either the same as background (interceptor ditches that collect non-road related surface flow) or has been treated via hybrid wetland attenuation ponds.

At the River Finn SAC crossing in Section 1 (upstream Ballybofey / Stranorlar), proposed pre-commencement ground investigation (GI) works will be rotary core boreholes and will include archaeological surveys and testing. The works are located 8 m (minimum) away from the river channel, which is outside the SAC boundary as there are no temporary bridge construction works required within the SAC. The GI and archaeological test trenching do not involve discharges to water. The GI works occur within discrete areas that are subject to disturbance by the construction footprint in any case, i.e., bridge pier foundations.

As set out in the Project Description (Appendix 1), there are design and construction measures included as part of the River Finn (Section 1) bridge construction works to avoid direct and indirect impact on the SAC, contain the temporary works areas and manage pollutant run-off at bridge pier sub-structure construction areas (foundation piling) on either side of the River Finn channel. This includes: (i) the use of temporary sheetpiled cofferdams installed around the bridge piers with a top height that excludes the 1% AEP (+ 20% CCA) flood level + freeboard; (ii) use of reno-mattresses (or similar) with a low fines composition to create working platforms on the floodplain on the northern bank; (iii) robust silt fencing along the SAC boundary and around temporary works and hardstanding areas to prevent pollutant run-off; (iv) fencing to demarcate and thus prevent unwanted incursion into the SAC on both banks, (v) silt fencing to encapsulate areas of pre-commencement GI / archaeological testing.

There are sixteen proposed deposition areas in Section 1, all of which are located outside the 1% AEP (+20% CCA) flood extent; are close to the permanent works and are set back from drains and watercourses. There are no deposition or material extraction areas within the River Finn SAC.

In terms of operational phase effects, the clear span design of the Section 1 River Finn SAC bridge means there will be no impediment to salmon migration and will retain the existing channel and banks of the watercourse intact. The channel is generally wooded on both banks and has a moderate degree of shade owing to the steep / vertical (historically drained) banks on the south side of the crossing reach. The proposed bridge deck width is 26.5 m with a clearance of c.18m above summer river levels. The orientation of the bridge is NE-SW, meaning there will be light incidence from the SE side of the bridge, likely penetrating beneath the bridge deck more so outside of summer months when the sun is lower, noting the 18 m bridge deck clearance above the river. The NW side of the bridge will become more shaded compared to baseline. The instream plant community is bryophyte dominated (mainly *Fontinalis antipyretica*, *F. squamosa*) and the liverwort *Chiloscyphus* sp. Aquatic mosses tend to tolerate low light and are the dominant feature of instream vegetation in this location owing to existing shading from riparian treelines, high water colour (humic substances) and (likely historical) deepening that has formed vertical banks, particularly on the southern (RHS) bank. Permanent bridge shading, similar to these existing channel shading features (tall riparian trees, deepened channel banks), could reduce moss cover locally. This is likely to be more noticeable in the long-term operation phase on the western side of the bridge where light incidence would become more limited compared to baseline. Whilst this is an impact, it does not significantly alter the ecological functionality of this reach for fish, i.e., as migration, holding and nursery habitat and does not represent a significant negative effect.

### River Finn Crossing – Section 3

In Section 3, there is incursion required onto the floodplain of the River Finn SAC (on the County Donegal side of the river) to construct bridge piers for the River Finn N14/N15 to A5 Link Bridge, but this does not involve in-stream intrusion. Pre-construction additional GI works (rotary core) and archaeological testing in relation to this proposed bridge also occur on the floodplain within the River Finn SAC. Such works are at nearest 7.9 m away from the river channel and do not involve discharges to water. The GI works occur within discrete areas that are subject to disturbance by the construction footprint in any case, i.e., bridge pier foundations, and the areas will be surrounded in silt fencing prior to works commencing. The 7.9 m set-back will be undisturbed and retained as a vegetated buffer zone between the flood plain works areas and the river channel during pre-commencement GI works and during the construction phase.

The design, construction sequence and standard water quality protection measures during the River Finn N14/N15 to A5 Link bridge construction in Section 3 are set out in Appendix 1: Project Description, Section 9.15 and associated drawings. The bridge construction duration is estimated to be 18 months within the overall 36-month construction period for Section 3. Descriptions of the bridge construction sequence should be read in conjunction with Appendix 2 NIS Drawings: Drawings 25–27, which show temporary work areas for the structure in relation to the SAC boundaries. In-stream works are not required for the construction of the River Finn N14/N15 to A5 Link Bridge, but there will be a temporary (construction phase) and permanent (operation phase) footprint on the floodplain within the River Finn SAC in County Donegal.

In Section 3 of the Proposed Development, the River Finn is deep, channelised and heavily silted, forming a slow flowing glide at the proposed crossing point. The river at this location is tidally influenced and does not comprise sensitive salmonid spawning or nursery habitats at, or downstream of the construction area. The River Foyle below Strabane is also a slow flowing glide, increasingly tidally influenced with downstream distance. The Foyle / Finn rivers in the reasonable ZOI of the Proposed Development are purely a holding habitat and migration route for Atlantic salmon. As such, it is noted that older fish (smolts, adults) are more resilient and adapted to occasional periods of turbidity, i.e., being highly mobile, and either avoid or are attracted to silt plumes if they did unexpectedly arise. Importantly, sedimentation of salmon spawning beds is not an issue as they are not present at the crossing location or downstream to the Foyle Estuary. Migrating fish could, however, in the absence of mitigation be affected by excessive turbidity and/or toxicity if there were uncontrolled sediment and/or pollutant wash out from the construction areas on both side of the river.

The proposed bridge design for the crossing of the River Finn in Section 3 is an eight-span structure with an overall length of approximately 284 m. It consists of a 63m main span that clears the River Finn, plus southern and northern approach structures. The clear span over the River Finn will have no direct impact on the channel, retaining the riverbanks intact (with a minimum 5m exclusion zone from the riverbank top) with no requirement for in-stream works during construction. The northern side of the bridge construction is in the River Finn SAC (County Donegal, Republic of Ireland), and the southern side is part of the River Foyle and Tributaries SAC (County Tyrone, Northern Ireland). Refer to Section 6.6.2 for assessment of effects on integrity for River Foyle and Tributaries SAC.

Figure 6-1 shows the plan and profile for the proposed bridge, including SAC boundaries on both Donegal and Tyrone sides of the river. The River Finn main channel width at the bridge site is circa 40-50 m. An exclusion zone along the riverbank will be established at the outset of construction works using solid fencing. The exclusion zone will be 7.9 m on the ROI side and 9.1 m on NI side.

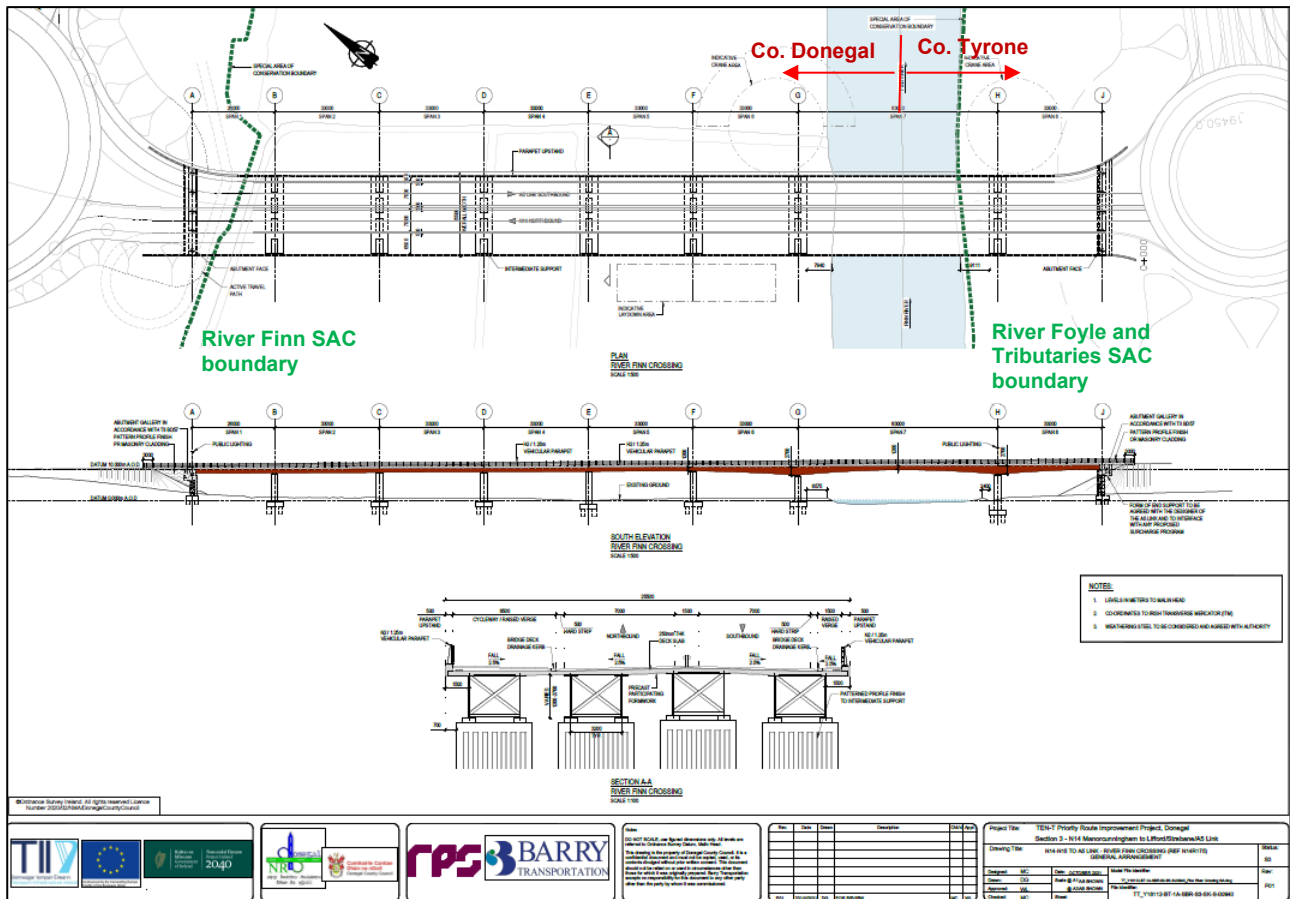


Figure 6-1: N14/N15 to A5 Link - River Finn Crossing General Arrangement

There is no requirement for new drainage outfalls to the River Finn from the proposed new bridge and carriageway, nor from the mainline drainage network. The latter will discharge from the proposed permanent Attenuation Pond 16 via swale to the existing network of ephemeral land drains on the River Finn floodplain. The discharge to the drains occurs outside the SAC with no new outfalls required to the River Finn. During construction, two minor field ditches will be required to be diverted as they pass under the proposed bridge alignment. These will be diverted before interacting with the works area to separate 'clean' surface flow from the construction area, noting these drains dry out occasionally. A temporary land drain is proposed to intercept these drains, which will be connected to the existing field drainage network and therefore not require a new connection to the river. Hence there is no excavation required at the River Finn bank for new outfalls, and no instream works associated.

During the River Finn bridge construction in Section 3, permanent Attenuation pond 16 will be installed at the start of the construction period. The pond is outside the SAC and outside the 1%AEP (+20% CCA) flood extent. Construction related drainage will be either diverted or pumped to pond 16 instead of constructing a temporary settlement pond within the SAC. Cofferdams will be constructed around each bridge pier so that water within any excavations are contained and can be pumped out and tankered to Pond 16. This approach negates requirement for additional drainage diversions and attenuates and treats construction phase run-off via Pond 16.

Six bridge piers are located within the SAC boundary on the floodplain on the County Donegal side of the river. As a consequence, there will be a small permanent loss of wet grassland habitat within the SAC, equating to 240 m<sup>2</sup> (6 no. sets of piers x 4 piers per set x 10 m<sup>2</sup> per pier of habitat loss). To construct the bridge a temporary floating road is required within the County Donegal (ROI) side of the river which will have a temporary negative but reversible impact on this wet grassland habitat. Note, there will be a construction phase exclusion zone on each side of the river: 7.9m on the ROI side and 9.1m on NI side which retains intact the riverbank vegetation out to these distances, including the fringing reed community along the river

margin. Wet grassland is not a qualifying interest or Annex I listed habitat type and will recover on completion of the construction phase. Similarly, minor temporary works within the SAC boundary are required, i.e., at the base of low embankments for the Active Travel path, but this also occurs on improved agricultural fields, merging to wet grassland and does not result in a permanent footprint within the River Finn SAC.

Deposition / extraction areas are each located near the permanent works; are outside the 1% AEP (+20% climate change) flood extent and are set back from drains and watercourses. There are no deposition or material extraction areas within 100 m of the major rivers of Section 3 (Swilly Burn, Deelee, Finn). The nearest deposition area to the River Finn SAC in Section 3 is 1 km distant.

The river is tidal in the proposed crossing reach. The predicted designed flood level at the bridge crossing site is 6.73 mOD Malin based on combined 100-year fluvial and tide event, including 20% climate change allowance. The minimum road level is 9.8 mOD which is just over 3m above the designed flood level. Existing floodplain ground level on the northern (Co. Donegal) side of the river is broadly 2.1 to 2.6 mOD Malin and 3.7 mOD on the southern (Co. Tyrone) side. It would not be feasible to build temporary cofferdams or temporary work platforms that extend above the combined tidal and fluvial flood level of 6.73 mOD to provide temporary flood protection (at 100-year flood level) to bridge pier foundation areas during construction. For that reason, the focus of the proposed construction works is on limiting potential sources of sediment washout to the SAC river.

As set out in the Project Description (Appendix 1), there are design and construction measures included as part of the River Finn (Section 3) bridge construction works to avoid limit direct impact and avoid indirect impact on the SAC, contain the temporary works areas and manage pollutant run-off at bridge pier sub-structure construction areas (foundation piling) on either side of the River Finn channel. This includes: (i) use of reno-mattresses (or similar) with a low fines composition to create working platforms on the floodplain on the northern bank; (ii) the use of temporary sheetpiled cofferdams installed around the bridge pier construction areas to contain potentially contaminated water within excavations for pump out and treatment at Attenuation Pond 16; (iv) robust silt fencing and fencing between the temporary works area and the River Finn along the exclusion zone boundaries (7.9m on the ROI side and 9.1m on NI side); (v) fencing to demarcate and thus prevent unwanted incursion into the SAC on both banks, (vi) silt fencing to encapsulate areas of pre-commencement GI / archaeological testing.

In terms of operational phase effects, the clear span design of the Section 3 River Finn N14/N15 to A5 Link bridge means there will be no impediment to salmon migration and will retain the existing channel and banks of the watercourse intact. The bridge is set approximately 8.3 m above normal summer river levels. It is 25 m wide with a NW-SE orientation meaning there will be light incidence from mainly the NE and SW position of the sun, with the shadow footprint variable and according to season, i.e., daylight hours and position of the sun. Whilst there was a typical, emergent fringing reed community at the river margins, there was no submerged in-channel macrophyte growth evident at the River Finn crossing point, likely owing to water depth, water colour and turbidity. Localised shade cast by bridge shadow will likely cause a slight reduction in productivity of ephemeral filamentous green algae during summer months (e.g., pollution tolerant *Cladophora*, which was recorded during field surveys) which will be a slightly positive effect locally. There may be a slight localised reduction in productivity of the fringing reed community along a narrow reach under the bridge, but this is of little ecological consequence given the of the river depth and colour provides localised cover for migrating fish, noting that fish may even display a preference for the cover provided by the bridge in the slightly deeper water areas that are present.

### **Culverting effects – River Finn SAC**

There are no culverts or stream diversions (temporary or permanent) proposed on River Finn SAC channels in either Section 1 or Section 3.

Furthermore, the design specifically ensures that main tributaries outside the River Finn SAC which are crossed by the Proposed Development *and* support salmon habitats (spawning, nursery or holding) are bridged (not culverted) as follows:

- In Section 1, the lower Backlees stream (Site W1-08) and the Cloghroe River (Site W1-14) possess salmon spawning and nursery habitats in the ZOI. These channels will be bridged using clear spans with pre-existing channel morphology and bank form either retained (Backlees) or reinstated (Cloghroe). The

proposed Backlees bridge is 1.8 km upstream of the River Finn SAC. The proposed Cloghroe River bridge is c. 27 km upstream of the River Finn SAC.

- In Section 3, the lower reaches of the Swilly Burn (Site W3-14) and River Deelee (Site W3-17) are salmon holding / migration habitat and will be bridged using clear spans with pre-existing channel morphology and banks undisturbed and retained. The proposed River Deelee bridge (Site W3-17) is 3.5 km upstream of the River Finn SAC boundary and an additional c. 5 km upstream of the River Foyle and Tributaries SAC boundary on the lower River Foyle. The proposed Swilly Burn bridge (Site W3-14) is 6.8 km upstream of the contiguous River Finn SAC (ROI) and River Foyle and Tributaries SAC (NI) boundary on the lower River Foyle.

Whilst there is potential for construction related water quality degradation to construct the above (non-SAC channel) bridges, the clear span designs mean that migration pathways (and functional use for salmon recruitment in relation to Section 1) will not be adversely affected.

However, culvert construction areas (all of which are on small channels and are outside the SAC) ultimately drain to the River Finn SAC and have potential for indirect effects related to water quality and habitat degradation through downstream escapement of suspended solids and/or other pollutants (e.g., hydrocarbons, concrete). This is less of an issue in Section 3 where the smaller (culverted) tributaries themselves and the main channels in the downstream ZOI are unsuited for salmon spawning or nursery and hence of reduced sensitivity compared to Section 1. It is primarily an issue in Section 1 of the Proposed Development where the receiving waters comprise salmon spawning and nursery habitats in the Burn Durnett, Backlees stream, Cloghroe River (and potentially the Mullaghagarry stream). The latter has an existing fish passage barrier (Site W1-17) because of an existing undermined culvert on the local road. This defunct culvert will be replaced and remediated as part of the Proposed Development, which will result in reconnection of approximately 2-3 km of channel length (potential salmon spawning and nursery habitat) upstream of this point in the Mullaghagarry sub-catchment of the River Finn.

Refer to Appendix 11 – Construction Phase Impact Assessment (Culverts) for details of construction phase impact for each proposed culvert, noting again that all culverts are located on small channels outside the River Finn SAC.

Culverts have all been designed according to OPW Section 50 requirements with regards to freeboard and accommodation of flood flow (Design Flow: Q100 + 20% <sup>36</sup>CCA), also allowing embed of 500mm (for box type) or 300mm (for pipes) as required by Loughs Agency (2016) guidance. Pipe culverts are only used on small drainage channels that have no fisheries value. Proposed culverts on EPA delineated watercourses have been discussed with Loughs Agency (Section 1 and southern Section 3), who has agreed in principle with the design approach applied regarding watercourse crossing type proposed with respect to fisheries value of the watercourse in question (i.e., bridge; box or pipe culvert).

### Summary of Potential Adverse Effects on Integrity – River Finn SAC

The overall scale of construction works including the Section 1 and Section 3 River Finn SAC crossings; general earthworks, deposition areas, material extraction areas and drainage installation represent a combined significant source of potential construction phase sediment and pollutant loss with pathways to salmon habitats of the River Finn SAC. Given the substantial earthworks proposed, in the absence of mitigation, likely significant indirect negative effects on downstream salmon habitats, primarily related to potential for suspended solids run-off (causing sedimentation and/or turbidity effects) in the construction phase cannot be ruled out.

The magnitude and duration of any consequent effect on salmon habitats would be dependent on the extent to which salmon recruitment was affected. In this regard, Section 1 has greatest sensitivity as it comprises salmon spawning and nursery habitats in the River Finn SAC main channel, therefore water quality degradation effects would be more significant there, if they did occur, because spawning redds and juvenile life-stages (eggs and fry in particular) are considerably more susceptible to the effects of suspended solids pollution. Section 3 has lower sensitivity because the tidally influenced (including estuarine), lower reaches of the Finn and Foyle rivers do not comprise salmon spawning or nursery habitat. These are drained, heavily

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<sup>36</sup> CCA = Climate Change Allowance

silted lowland rivers that form migration routes and holding habitat for older life stages of salmon (smolts, adults) which are less vulnerable to elevated suspended solids concentrations compared to juvenile fish.

### **Distribution: Extent of Anadromy – Construction Phase**

The target for distribution is “100% of river channels down to second order accessible from estuary”.

No instream works within the River Finn SAC are required for the construction of the Proposed Development. Both the Section 1 and Section 3 River Finn bridge structures have been designed to provide unhindered passage beneath the new bridge structures for salmon during construction.

Culvert constructions, none of which are located within the River Finn SAC, have potential (in the absence of mitigation) for indirect adverse effects on fisheries channels at 14 crossing locations in Section 1, and 19 crossing locations in Section 3 (some with potential for salmon movement, though outside the SAC) as set out on a site-specific basis in Appendix 11 – Construction Phase Impact Assessment (Culverts).

Uncontrolled losses of sediment related to significant earthworks, cement and hydrocarbons (as a result of leakage, accidental spillage) could result in changes to the habitat and water quality downstream of the polluting event(s) which could indirectly result in a change in the distribution of salmon along the affected section on at least a temporary basis.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required to prevent adverse effects associated with water quality (sediment and pollutants) and fish movement**, potentially affecting extent of anadromy during the construction phase.

### **Distribution: Extent of Anadromy – Operational Phase**

The two proposed clear-span bridges over the River Finn (Sections 1 and 3), plus clear span bridges over the Backlees and Cloghroe River (Section 1), and the River Deelee and Swilly Burn (Section 3) will have no negative effects on fish movement.

There are no culverts proposed on watercourses in Section 1 or 3 within the River Finn SAC boundary. Culverts are proposed on two channels outside the SAC boundary with potential for salmon movement in Section 1. These are: Mullaghagarry Stream at aquatic surveys sites W1-16, W1-17, W1-18, W1-20, and Dromboe Lower Stream at site W1-07 (the latter is relatively minor and currently culverted but will be daylighted by the Proposed Development). Watercourses where culverts are proposed in Section 3 are unsuitable habitats for salmon (suited to trout in some, but too small and/or polluted for salmon). Improperly designed or maintained culverts can also form barriers to fish migration, fragmenting habitats in the few streams that currently or potentially support salmon, which could have negative impact *ex-situ* to the SAC, affecting the meeting of Conservation Limits. An Irish study that investigated operational impact on fish passage at culverts on a modern highway project (M3) showed that fish passage was possible through culverts designed to current standards, although dry-weather water depths and measured water velocities in some culverts were below permissible limits and were at risk of impeding fish passage under low-flow conditions (Cocchiglia *et al*, 2012).

Box culverts are specified for all smaller channels with fisheries significance. In general, culverts have been set along the line of the existing watercourse and to a similar width to that of the natural low-flow channel. Larger box-type culverts will have their invert buried to a depth of 500 mm to stimulate settlement of a natural stream bed within during the operation phase. Box culverts have been designed according to OPW Section 50 standards to ensure the appropriate headroom (freeboard) and design-flows are achieved.

Site specific operational phase impact assessments at each proposed culvert location are based on culvert specifications (length, slope, dimensions, type) and aquatic receptor sensitivity and are presented in Appendix 12 – Operational Phase Impact Assessment (Culverts).

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects associated with fish movement**, potentially affecting extent of anadromy during the operational phase. The mitigations

are in the form of internal features within culverts to facilitate fish movement, where required, on the basis of culvert slope and length (low flow channel, baffles) according to national and international guidance.

#### 6.6.1.5.2.1 Adult Spawning Fish – Construction Phase

The target for adult spawning fish is “*Conservation limit for each system consistently exceeded*”.

The River Finn is currently below its Conservation Limit for salmon. Loughs Agency operates a fish counter on the Finn at Killygordon, i.e., circa 10km downstream of Ballybofey and 16 km upstream of Lifford / Strabane. Fish counts for 2020, 2021, 2022, 2023 and 2024 were: 2,302, 2,409, 1,194, 1750, 1025, respectively (Loughs Agency 2025). The management target for the Finn is 5,410 upstream moving salmon annually. The fish counts show the river is consistently not meeting its management target and has failed to do so for many years (Niven et al., 2016; Niven and Clarkin, 2018).

No instream works within the River Finn SAC will be required during the construction of the Proposed Development. Both bridge structures across the Finn (Section 1 and 3) have been designed to provide unhindered passage beneath the new bridge structures for salmon during construction.

Culvert construction has potential (in the absence of mitigation) for likely significant effects relating to suspended solids and other construction phase pollutant losses to water on fisheries channels at 14 crossing locations outside of the River Finn SAC in Section 1; and 19 outside of the River Finn SAC crossing locations in Section 3 (a few with potential for salmon movement) as set out on a site-specific basis in Appendix 11 – Construction Phase Impact Assessment (Culverts).

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required** in order to prevent adverse effects associated with water quality degradation affecting salmon recruitment habitat and impediments to fish movement (during construction), which may otherwise potentially further affect the Conservation Limits being achieved or exceeded for adult spawning fish in the system.

#### 6.6.1.5.2.2 Adult Spawning Fish – Operational Phase

The two proposed clear-span bridges over the River Finn (Sections 1 and 3), plus clear span bridges over the Backlees and Cloghroe River (Section 1), and the River Deelee and Swilly Burn (Section 3) will have no negative effects on movement or numbers of returning adult spawning fish.

There are no culverts proposed on watercourses in Section 1 or 3 within the River Finn SAC boundary. Culverts are proposed on two channels outside the SAC boundary with potential for salmon movement in Section 1. These are: Mullaghagarry Stream at aquatic surveys sites W1-16, W1-17, W1-18, W1-20, and Dromboe Lower Stream at site W1-07 (the latter is relatively minor and currently culverted but will be daylighted by the Proposed Development). Watercourses where culverts are proposed in Section 3 are unsuitable habitats for salmon (suited to trout in some, but too small and/or polluted for salmon). Improperly designed or maintained culverts can also form barriers to fish migration, fragmenting habitats in the few streams that currently or potentially support salmon. This could have negative impact *ex-situ* to the SAC affecting the meeting of Conservation Limits. An Irish study that investigated operational impact on fish passage at culverts on a modern highway project (M3) showed that fish passage was possible through culverts designed to current standards, although dry-weather water depths and measured water velocities in some culverts were below permissible limits and were at risk of impeding fish passage under low-flow conditions (Cocchiglia *et al*, 2012).

Box culverts are specified for smaller channels with fisheries significance, noting that no culverts are proposed within the SAC boundary on channels across the Proposed Development. In general, culverts have been set along the line of the existing watercourse and to a similar width to that of the natural low-flow channel. Larger box-type culverts will have their invert buried to a depth of 500 mm to stimulate settlement of a natural stream bed within during the operation phase. Box culverts have been designed according to OPW Section 50 standards to ensure the appropriate headroom (freeboard) and design-flows are achieved.

Site specific operational phase impact assessments at each proposed culvert location are based on culvert specifications (length, slope, dimensions, type) and aquatic receptor sensitivity and are presented in Appendix 12 – Operational Phase Impact Assessment (Culverts).

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required** in order to prevent adverse effects associated with fish movement, potentially affecting the meeting of Conservation Limits for adult spawning fish during the operational phase. The mitigations are in the form of internal features within culverts to facilitate fish movement, where required, based on culvert slope and length (low flow channel, baffles) according to national and international guidance.

#### 6.6.1.5.2.3 Salmon Fry and Out-migrating Smolt Abundance – Construction Phase

The target for salmon fry abundance is to “*maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry per five minutes sampling*”. The target for out-migrating smolt abundance is “*no significant decline*”.

In 2018 the mean number of salmon fry (young of year) recorded at 440 sampling stations in the Foyle area, which includes the River Finn was 13 fry per five minute sampling (McCauley & Deehan, 2019), therefore below the current conservation target. The low number of adult returning salmon, plus existing issues with impaired water quality are likely contributing to failure to meet this target. Salmon fry occur in ‘fair’ to ‘excellent’ numbers in the River Finn in the Section 1 crossing reach upstream of Ballybofey. The Section 3 River Finn crossing reach is a holding and migration route only and is unsuitable spawning or nursery habitat for salmon.

Uncontrolled losses of sediment related to significant earthworks, cement and hydrocarbons (as a result of leakage, accidental spillage) could result in changes to the habitat and water quality downstream of the polluting event(s) which has potential for indirect negative effects on salmon spawning and nursery areas (related to sedimentation and turbidity). If juvenile recruitment is adversely affected in this way, the abundance of out-migrating smolts may also decrease.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects associated with turbidity and sedimentation** potentially affecting the salmon fry and out-migrating smolt abundance during the construction phase.

#### Salmon Fry and Out-migrating Smolt Abundance – Operational Phase

During the operation of the Proposed Development, potential impacts are associated with road surface run-off pollutants, including sediment. It is predicted during the operational phase that the project may occasionally produce temporary and short-lived increases in suspended sediment concentrations in association with a high-intensity rainstorm for example, but, considering (a) the level of attenuation and treatment provided by the drainage design, and (b) the low average annual daily traffic (AADT) volumes predicted, the level of operational phase pollutant run-off will be negligible and not discernible over baseline conditions (See detail set out under Water Quality below).

It is assessed that the combination of: (1) relatively low AADT, (2) attenuation of runoff via ponds/wetlands, and (3) consequent treatment of road surface drainage, would lead to an imperceptible impact on receiving water quality linked to road run-off, with effects aquatic QI species/habitat of River Finn SAC being not significant in the operational phase.

In the absence of mitigation, **adverse effects to site integrity can be ruled out** as a result of the Proposed Development. Therefore, **mitigation is not required** in order to prevent impacts associated with turbidity and sedimentation potentially affecting the salmon fry and out-migrating smolt abundance during the operational phase.

#### 6.6.1.5.2.4 Number and Distribution of Redds – Construction Phase

The target for number and distribution of redds is “*no decline in number and distribution of spawning redds due to anthropogenic causes*”.

No instream works within the River Finn SAC are required during the construction of the Proposed Development in either Section 1 or Section 3, therefore no direct disturbance effects to redds will occur

within the SAC. Refer to salmon redd data presented in Appendix 8: Loughs Agency Fisheries Data 2020 - 2024.

Potential impacts have been identified as a result of contaminated surface water run-off (mainly sediment; plus concrete and hydrocarbons). Adverse effects could be direct (local smothering) and/or indirect (downstream sedimentation/ toxicity) affecting salmon redd distribution and number.

In the absence of mitigation, indirect **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects on water quality (sediment and other pollutants)** indirectly affecting the number and distribution of salmon redds during the construction phase.

#### 6.6.1.5.2.5 Number and Distribution of Redds – Operational Phase

During the operation of the Proposed Development, potential impacts are associated with road surface run-off pollutants, including sediment. It is predicted during the operational phase that the project may occasionally produce temporary and short-lived increases in suspended sediment concentrations in association with a high-intensity rainstorm for example, but, considering (a) the level of attenuation and treatment provided by the drainage design, and (b) the low average daily traffic volumes predicted, the level of operational phase pollutant run-off will be negligible and not discernible over baseline conditions (See Water Quality below).

It is assessed that the combination of: (1) relatively low AADT, (2) attenuation of runoff via ponds/wetlands, and, (3) consequent treatment of road surface drainage, would lead to an imperceptible impact on receiving water quality linked to road run-off, with no likely significant effects on QI salmon and their habitats of River Finn SAC.

In the absence of mitigation, **adverse effects to site integrity can be ruled out** as a result of design features incorporated into the Proposed Development. Therefore, **mitigation is not required** in order to prevent impacts associated with turbidity and sedimentation potentially affecting the number and distribution of redds during the operational phase.

#### 6.6.1.5.2.6 Water Quality – Construction Phase

The target for water quality is “*at least Q4 at all sites sampled by EPA*”.

With respect to Section 1, the River Finn is Q4-5, ‘High status (2022), upstream of Ballybofey, declining to Q4 – ‘Good’ status downstream of the town and then ‘Moderate’ by c.10 km downstream of Ballybofey (at Killygordon). The achievement of high-status Q-rating in 2022 was a dramatic improvement over previous monitoring rounds. Indications are that waters of the River Finn are “*unpolluted*” upstream and just downstream of Ballybofey but decline with further distance downstream, i.e., towards Section 3 (Lifford / Strabane). At its lower reaches in the vicinity of Section 3, the river was rated as Q3-4 ‘Moderate’ status (2022).

During construction, all watercourses are at risk of direct and indirect effects related to potential deterioration in water quality with effects on the macroinvertebrate assemblages that underpin the Q-value rating for watercourses.

The principal source of road construction related impact on aquatic receptors arises from the potential escape of excessive amounts of suspended solids (SS) leading to turbidity and sedimentation locally and downstream. Sources of sediment loss include general earthworks, construction haul road levelling, soil stockpiling / spreading, site compounds, additional ground and archaeological investigations, pumping of solids-contaminated water from on-site excavations, vehicular activity in and beside streams, culverts and realignments. Studies in Ireland during construction of bridges and culverts on the M3 and M7 motorways showed that instream SS concentrations in dry weather were generally low (below the designated salmonid water permissible limit of 25 mg/l) but were elevated for short periods during storm events. Revegetation of topsoiled surfaces (6-months post construction) significantly reduced SS losses (Cocchiglia *et al.*, 2012). Escaped solids can settle in watercourses and winnow downstream, resulting in smothering of plants and macroinvertebrates, causing fish to abandon affected areas at least in the short-term. At worst, such sedimentation could occur over salmonid spawning / nursery areas, reducing fish recruitment through egg

and fry mortalities. Turbidity within the water column can cause physical damage, physiological and behavioural changes to fish (e.g. respiration, migration) and benthic macroinvertebrates (e.g. drift responses).

The scale and nature of the Proposed Development mean there is potential for loss of cementitious materials or hydrocarbons (fuels, oils, hydraulic fluids) during the construction phase through leaks, accidental spillage or wash out from construction sites. Cement is highly alkaline and can cause serious fish kills if concentrations are high, with similar effects on macroinvertebrates. Hydrocarbon spills can give rise to tainting of fish or, if large enough, fish and macroinvertebrate kills which can have trophic effects (negative).

In the absence of mitigation, indirect **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects on water quality (sediment and other pollutants)** indirectly affecting macroinvertebrate assemblages that underpin the Q-value rating and preventing the maintenance of at least Q4.

#### 6.6.1.5.2.7 Water Quality – Operational Phase

Traffic emissions and road surfaces are sources of contaminants which are exported in run-off and drainage to aquatic receiving environments. Traffic-related pollutants originate mainly from tyre and brake lining abrasion, hydrocarbon leakage, combustion residue and asphalt surfaces (Healy *et al.*, 2008), but can include contaminants from highway structures, e.g., zinc from bridge and safety fencing galvanised structures (Huber *et al.*, 2016). Typical road run-off contaminants in Ireland are: Total Suspended Solids (TSS), heavy metals, hydrocarbons including polycyclic aromatic hydrocarbons (PAHs), chlorides, nitrates and phosphorus (Bruen *et al.*, 2006). Chloride (Cl) would be attributed to de-icing in winter, which may occur in County Donegal from time-to-time but is not considered a major source owing to the relatively mild Atlantic climate and limited requirement and/or duration for its use. Pollutants can be sediment bound and/or in soluble form, although the majority of the pollutant load, including the PAH, is sediment bound (TII, 2014). TSS are, by weight, the principal contaminants of road surface drainage, meaning attenuation and settlement of TSS are a primary focus in the treatment of road runoff through attenuation.

The modelled traffic volumes Annual Average Daily Traffic (AADT) for Section 1 mainline under a High Growth Scenario is up to 14,600 (3.8% HGV) by 2047. This is a worst-case scenario, noting the modelled Central Growth Scenario predicts AADT up to 13,200 (~3.8% HGV) by 2047 (refer to EIAR Chapter 6: Traffic and Transport). These are relatively low AADT scenarios compared to other major Irish highways. There is a predicted 77% reduction in traffic volumes over the existing River Finn Bridge in Ballybofey

The modelled traffic volumes (AADT) along the Section 3 mainline under a High Growth Scenario is up to 13,200 by 2047. This is a worst-case scenario, noting the modelled Central Growth Scenario predicts main alignment AADT up to 11,300 by 2047 (refer to EIAR Chapter 6: Traffic and Transport). The Proposed Development in Section 3 will result in approximately 50% reduction in AADT over the existing Lifford and Deelee bridges and 96% reduction in AADT at the existing Swilly Burn Bridge.

Environmental control measures (hydrocarbon interceptors, attenuation ponds designed as hybrid wetlands) have been incorporated into the design of the road drainage system to attenuate runoff and provide for treatment of suspended solids, trace metals and hydrocarbons along the carriageway drainage pathway. This give rise to potential for slightly positive, long-term impact on water quality and aquatic ecology in the long-term as the traffic volumes referred to above are transferred to the new road with modern, sustainable drainage treatment and attenuation features along the entire carriageway.

HEWRAT assessments were conducted (see Chapter 11: Water) as per TII Standard DN-DNG-03065 across all discharge points to watercourses from the Proposed Development. Results show that owing to the designed level of attenuation (and consequent run-off treatment): (i) all outfalls pass the risk assessment in terms of soluble (acute) copper and zinc impacts in road run-off discharge; (ii) all outfalls pass the risk assessment relating to Environmental Quality Standards (EQS) (mean annual concentration) for copper and zinc according to Surface Water Regulations (S.I. 272 of 2009, as amended), (iii) all sites pass the assessment for sediment (chronic) impacts because the non-silting discharge flow velocity is exceeded; (iv) spillage risk assessment results show that the annual probability of a serious pollution incidents are well below the acceptable risk limit of 0.5%, and (v) all applicable outfalls pass the cumulative assessment for soluble copper and zinc (acute and EQS) and sediment (chronic) pollutants, i.e., where there is more than one discharge on the same reach of a watercourse.

It is assessed that the combination of: (1) relatively low AADT, (2) attenuation of runoff via ponds/wetlands, and (3) consequent treatment of road surface drainage, would lead to an imperceptible impact on receiving water quality linked to road run-off, with effects aquatic QI species/habitat of River Finn SAC being not significant in the operational phase.

Applying the precautionary principle, however, if drainage features (hydrocarbon interceptors, hybrid wetland attenuation ponds) were not adequately maintained during the operation phase, adverse effects relating to ongoing water quality degradation associated with typical road run-off pollutants cannot be ruled out for QI indirectly affecting macroinvertebrate assemblages that underpin the Q-value rating and preventing the maintenance of at least Q4. Therefore, **mitigation is required** relating to the regular operational phase maintenance of the drainage features.

#### 6.6.1.6 *Lutra lutra* (Otter) [1355]

##### 6.6.1.6.1 Ecology and Conservation Status

Otter are geographically widespread in Ireland and its presence depends on the provision of suitable aquatic habitats, sufficient food and cover for resting and breeding. The territories of an individual otter may utilise a number of holts, which tend to be natural crevices associated with the roots of trees growing along river and lake banks. Otter can breed at any time of year, most appear to do so in the Spring and early Summer. Pregnancy lasts c. two months and a litter of cubs is typically two to three individuals. The cubs tend to remain in the natal holt for up to two months, however a mother may move cubs between holts within her territory periodically. The juvenile otters remain as a family group for around six months or longer before the young otter disperse to establish their own territories. Otter that live in rivers and lakes tend to be completely nocturnal with activity peaks at dusk and dawn. They are principally piscivorous, relying predominantly on salmonids but also eel and small fish species such as sticklebacks. Their diet can include other prey also when available e.g. frogs, crayfish, birds and small mammals.

The Irish otter population remains one of the most stable in Europe with Ireland being described as a “*stronghold*” for the species. As of 2025, five national surveys have been completed since 1980/1981. Following initial indications of decline (1990/1991 and 2004/2005), the national survey (2010) indicated recovery to 1980 levels and the population is reported as “*stable*” both with respect to short- and long-term trends, the 2023/24 survey was published in 2025 (NPWS 2025c). It is documented that a significant number of otter are killed on roads with incidents of accidents increasing during periods of flooding when fast flowing rivers at bridge crossings become impassable and otter must venture onto roads to find alternative routes.

A total of 44 SACs have been designated for otter in Ireland of which the River Finn SAC is one such designation for otter. The most recent assessment of conservation status considered that the population of otter in Ireland was “*favourable*” with respect to range, population, habitat and future prospects with the overall conservation trend identified as “*stable*”. With respect to otter within the Natura 2000 network, the short-term trend of population size within the network is documented as “*stable*” which is consistent with the reported national trend (NPWS, 2025c).

With respect to the River Finn, otter is described as being “*...widespread throughout the system...*” (NPWS, 2017b). This is consistent with the findings of detailed otter surveys which have been completed to inform the assessment as detailed in Chapter 5.

##### 6.6.1.6.2 Assessment of Adverse Effects on Integrity

With reference to otter ecology and conservation status, an assessment of adverse effects on integrity with respect to otter has been completed with reference to published Conservation Objectives underpinned by published attributes and targets for these objectives. The Conservation Objective for otter for the River Finn SAC is “*to maintain the favourable conservation condition of Otter in River Finn SAC*” (NPWS, 2017a). The assessment against the underpinning attributes and targets of this objective for otter is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

#### 6.6.1.6.2.1 Distribution – Construction Phase

The target for distribution is “*no significant decline*”.

Both Sections 1 and 3 of the Proposed Development have a single crossing each of the River Finn at Ballybofey/Stranorlar for Section 1 and to facilitate the A5 link near Lifford on Section 3. The Bridges are 27km apart by hydrological distance. Both bridge structures have been designed to provide unhindered passage beneath the new bridge structures for otter once constructed even at times of flood. Likewise, new structures (e.g. culverts) on tributaries of the River Finn will be designed to include provisions for the continued passage of otter along these tributaries. Therefore, through design, to avoid effects on the distribution of otter and therefore ensure no significant decline in the distribution of the species along the River Finn SAC and its catchment.

As detailed above it is assumed through evidence collected during detailed surveys that otter are present within the majority of the watercourses within the Proposed Development boundary. However, the Proposed Development will not result in the direct loss of any known breeding or resting sites based on the current baseline. Therefore, there is no direct adverse effect on such features. However, otters are mobile species in a dynamic environment and therefore pre-cautionary measures are included within the mitigation proposed to ensure that the baseline in advance of construction works is updated.

Given that otters are known to be active within the River Finn SAC and the watercourses that connect to it, in the absence of mitigation, there is a risk of otter being killed or injured during the construction activities e.g. as a result of falling into open excavations. It is considered in the absence of mitigation measures, that such impacts could affect the population of otters locally.

The primary concern during construction at the bridge locations, primarily the River Swilly Bridge, would be risk of excessive sediment loss from construction areas. If that occurred, increased turbidity may give rise to behavioural, physiological or physical changes in migratory freshwater fish (salmon, sea trout, river/sea lampreys, eel) and estuarine species of River Swilly or Isle Burn, the most common change being behavioural in terms of either avoiding or being attracted to turbidity plumes. In that regard, it is noted that estuarine and migratory fish species are adapted to variable background levels of turbidity within a naturally muddy, depositing transitional water environment. In the absence of mitigation measures, an adverse impact on site integrity cannot be ruled out.

The Proposed Development also has the potential to cause disturbance to commuting and foraging otter using the Lough Swilly and its tributaries, and associated flood plain. Disturbance as a result of the proposed two River Finn bridge constructions includes excavations, platform formation, cofferdam installation and operation, piling and bridge installation, machinery and artificial lighting may affect movement along the watercourses or within the estuary. However, otter are most active at dusk and dawn and although works are to be completed during the day, there will also be some intermittent night time working. Mindful of the typical activity habitats of otter, the River Finn and its tributaries will continue to provide a functional corridor for the movement of otter. It is not considered that this will significantly alter the accessibility of otters up and downstream, although there will be short periods of disruption during the construction phase particularly during the intermittent night time working.

Furthermore, given the current use of the environment surrounding the River Finn, otter populations in the area are considered to already be habituated to presence of human activity and noise within the environment (i.e. anthropogenic factors). Although, the potential localised displacement as a result of disturbance impacts to commuting and foraging otter would be limited to local level for the duration of construction, adverse impacts may arise during the construction period within the Swilly Estuary complex for 24 to 36 months.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects associated with water quality (sediment and pollutants), accidental killing/injury, noise emissions and artificial lighting** potentially affecting otter distribution during the construction phase.

#### 6.6.1.6.2.2 Distribution – Operational Phase

The target for distribution is “no significant decline”.

Road collisions between vehicles and otter is a known and identified risk to otter and therefore the operation of the road has, in principle, the potential to result in road collisions and otter fatalities or injuries. This has been accounted for early in the design of the Proposed Development to provide a bridge design over Lough Swilly which will allow the continued passage of the species even at times of flood. In addition, the design of water crossings of any affected tributaries of Lough Swilly also include provisions to enable the continued safe passage of otter along these watercourses. Although it is not considered that the operation of the Proposed Development would result in levels of mortality or injury that could result in a significant decline in otter population distribution within the SAC, as a precautionary measure it is good practice to implement the use of standard measures to avoid and minimise such avoidable fatalities and injuries. Mitigation measures will therefore be necessary to further avoid incidents of otter being killed and injured during operation e.g. the inclusion of permanent otter fencing consistent with TII guidance.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent adverse effects associated accidental killing/injury** potentially affecting otter distribution during the operational phase.

#### 6.6.1.6.2.3 Extent of Terrestrial Habitat

The target for extent of terrestrial habitat is “no significant decline. Area mapped and calculated as 390 ha along riverbanks/lake shoreline/ around ponds”.

Due to the design of the Proposed Development, there will be no direct or indirect loss of any terrestrial habitat within the SAC including that suitable for use by otter. Although there are occasions where construction works will occur within 10m of the watercourse channels the small area where this occurs is so small in the context of terrestrial habitat that it is deemed insignificant. Adverse effects to site integrity **can be ruled out** for the extent of terrestrial habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.1.6.2.4 Extent of Freshwater (River) Habitat

The target for extent of freshwater (river) habitat is “no significant decline. Length mapped and calculated as 182.2 km”.

Owing to the design of the Proposed Development, there will be no direct or indirect loss of any freshwater (river) habitat, including that suitable for use by otter, within the River Finn SAC. The extent of this habitat will be unaffected by the Proposed Development either during construction or operation. **Adverse effects to site integrity can be ruled out** for the extent of freshwater (river) habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.1.6.2.5 Extent of Freshwater (Lake) Habitat

The target for extent of freshwater (lake) habitat is “no significant decline. Area mapped and calculated as 354 ha”.

Owing to the design of the Proposed Development, there will be no direct or indirect loss of any freshwater (lake/lagoon) habitat, including that suitable for use by otter, within the River Finn SAC. The extent of this habitat will be unaffected by the Proposed Development either during construction or operation. **Adverse effects to site integrity can be ruled out** for the extent of freshwater (lake/Lagoon) habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.1.6.2.6 Couching Sites and Holts

The target for couching sites and holts is “no significant decline”.

Based on the most up-to-date surveys, there were no confirmed holts or couching or resting sites recorded during field surveys or within a distance to the Proposed Development in which they could be adversely affected, albeit considerable evidence of otter activity along the River Finn and its tributaries was recorded. The construction and operational phase will not cause any adverse effects on site integrity.

Given that otter are a mobile species inhabiting a dynamic ecosystem, a pre-construction survey for otter will be carried out within the Zol of the Proposed Development in order to identify any new territories and the establishment of any new breeding or couching sites. **Adverse effects to site integrity cannot be ruled out** for the Couching Sites and Holts on otter alone in the absence of mitigation measures. Therefore, **mitigation is required** during the construction phase.

This will be included as mitigation as a reasonable, precautionary measure, despite the current baseline not identifying adverse effects on site integrity.

#### 6.6.1.6.2.7 Fish Biomass Available

The target for fish biomass available is “no significant decline”. Reference is made in the notes which accompany this attribute and target note “*broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater*”. Consideration of salmon as a QI species of the SAC are detailed above.

As mentioned previously, the primary concern during construction at the bridge locations, primarily the River Finn Bridges, would be risk of excessive sediment loss from construction areas. If that occurred, increased turbidity may give rise to behavioural, physiological or physical changes in migratory freshwater fish (salmon, sea trout, river/sea lampreys, eel) and estuarine species of River Swilly or Isle Burn, the most common change being behavioural in terms of either avoiding or being attracted to turbidity plumes. In that regard, it is noted that estuarine and migratory fish species are adapted to variable background levels of turbidity within a naturally muddy, depositing transitional water environment. In the absence of mitigation measures, an **adverse impact** on site integrity cannot be ruled out in relation to water quality. **Mitigation measures will be required** to prevent adverse effects on site integrity.

With respect to the operational phase, it is assessed that the combination of: (1) relatively low AADT, (2) attenuation of runoff via ponds/wetlands, and (3) consequent treatment of road surface drainage, would lead to an imperceptible impact on receiving water quality linked to road run-off, with effects aquatic QI species/habitat of River Finn SAC being not significant in the operational phase.

In the absence of mitigation, **adverse effects to site integrity can be ruled out** as a result of the Proposed Development. Therefore, **mitigation is not required** in order to prevent impacts associated with water quality.

#### 6.6.1.6.2.8 Barriers to Connectivity

The target for barriers to connectivity is “no significant increase”.

Due to the design of the bridge crossings over the SAC and its tributaries, there will be free and unhindered passage of otter beneath these structures including at times of flood. The Proposed Development will not result in any new barriers to connectivity for otter within Lough Swilly SAC.

Adverse effects to site integrity **can be ruled out** in relation to barriers and connectivity on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

### 6.6.1.7 River Finn SAC – Summary of Adverse Effects

A summary of adverse effects is set out in Table 6.2 and the need for mitigation to address those adverse effects is identified. The mitigations to address those adverse effects are set out in Chapter 7.

**Table 6.2: Summary of Adverse Effects and Requirement for Mitigations to address those Effect with respect to the River Finn SAC**

Qualifying Interest/Special Conservation Interest	Adverse Effect(s) on Integrity? <sup>37</sup>	Requirement for Mitigation to address Adverse Effect(s)? (See Chapter 7)
[3110] Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> )	<b>No.</b> No pathway for adverse effect.	<b>No</b>
[4010] Northern Atlantic wet heaths with <i>Erica tetralix</i>	<b>No.</b> No pathway for adverse effect.	<b>No</b>
[7130] Blanket bogs (* if active bog)	<b>No.</b> No pathway for adverse effect.	<b>No</b>
[7140] Transition mires and quaking bogs	<b>No.</b> No pathway for adverse effect.	<b>No</b>
[1106] Salmon ( <i>Salmo salar</i> )	<b>Yes,</b> potential for adverse effects	<b>Yes</b>
[1355] Otter ( <i>Lutra lutra</i> )	<b>Yes,</b> potential for adverse effects	<b>Yes</b>

## 6.6.2 River Foyle and Tributaries SAC (UK0030320)

The Site-Specific Conservation Objectives of the River Foyle and Tributaries SAC (NIEA, 2024) are:

To maintain (or restore where appropriate) to favourable condition the:

- Atlantic Salmon *Salmo salar*;
- Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation;
- Otter *Lutra lutra*.

NIEA (2024) states that the internationally important qualifying feature populations of Atlantic Salmon and its *Ranunculus* community, are found in lower sections of the River Derg and Mourne Beg River and along the Strule and Mourne Rivers down to Strabane. None of these Foyle tributary rivers or their sub-catchments are impacted by the Proposed Development. The River Foyle is only included downstream to provide a linkage to the sea for migrating salmon. The Proposed Development does not have any pathway for impact on the listed NI spawning and nursery sub-catchment tributaries of the Foyle, hence there is no pathway for direct effects on the aquatic qualifying features.

In addition, the instream plant community of the tidal River Finn, at and downstream of the proposed N14/N15 to A5 Link Bridge over the River Finn SAC and contiguous River Foyle and Tributaries SAC does not pertain to Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation. The River Finn in Section 3 is a channelised, heavily silted, deepened glide in the crossing reach, and downstream, where water depth and high colour (humic substances) restrict aquatic macrophyte development. The only instream plant growth recorded was a reed canary grass (*Phalaris arundinacea*) dominated fringing reed community along both banks of the Finn in proximity to the crossing reach, with small amounts of yellow waterlily (*Nuphar lutea*) close to the bank. Therefore, Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation, can be ruled out

<sup>37</sup> Actual or potential adverse effect; applying the precautionary principle as required.

in terms of potential adverse effect on integrity of the River Foyle and Tributaries SAC (Northern Ireland) and need not be assessed further.

In the absence of robust mitigation in the area of sediment (and other pollutant) loss controls there is potential for temporary to short-term significant negative effects on water quality of the lower River Finn, potentially affecting the Qualifying Feature, salmon, migrating into and out of the River Derg and Mourne Beg River sub-catchments of the Foyle (adults and smolts) which is a QI species of the River Foyle and Tributaries SAC (Northern Ireland). In addition, the River Finn In the case of the *Ranunculus* community, it is found in lower sections of the River Derg and Mourne Beg River and along the Strule and Mourne Rivers down to Strabane.

In context to the Proposed Development the River Foyle and Tributaries SAC (Northern Ireland half of the river) is contiguous with the lower reaches of the River Finn SAC, which also has Atlantic salmon and Otter as QI Species. The predicted effects, and need for mitigation, as described for salmon and otter can be taken from the River Finn SAC assessment (above) as the same for the River Foyle and Tributaries SAC.

### 6.6.2.1 River Foyle and Tributaries SAC – Summary of Adverse Effects

A summary of adverse effects is set out in Table 6.3 and the need for mitigation to address those adverse effects is identified. The mitigations to address those adverse effects are set out in Chapter 7.

**Table 6.3: Summary of Adverse Effects and Requirement for Mitigations to address those Effect with respect to the River Foyle and Tributaries SAC**

Qualifying Interest/Special Conservation Interest	Adverse Effect(s) on Integrity? <sup>38</sup>	Requirement for Mitigation to address Adverse Effect(s)? (See Chapter 7)
[3260] Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation)	<b>No.</b> No pathway for adverse effect.	<b>No</b>
[1106] Salmon ( <i>Salmo salar</i> )	<b>Yes</b> , potential for adverse effects	<b>Yes</b>
[1355] Otter ( <i>Lutra lutra</i> )	<b>Yes</b> , potential for adverse effects	<b>Yes</b>

### 6.6.3 Lough Swilly SAC (Site Code: 002287)

The site-specific Conservation Objectives of the Lough Swilly SAC (NPWS, 2011a) are:

- To maintain the favourable conservation condition of Estuaries in Lough Swilly SAC.
- To restore the favourable conservation condition of Lagoons in Lough Swilly SAC.
- To restore the favourable conservation condition of Atlantic salt meadows in Lough Swilly SAC.
- To restore the favourable conservation condition of Old oak woodland with Ilex and *Blechnum* in Lough Swilly SAC.
- To restore the favourable conservation condition of Otter in Lough Swilly SAC.

Each objective is defined by a list of attributes and targets which are expanded upon in the assessment below.

<sup>38</sup> Actual or potential adverse effect; applying the precautionary principle as required.

### 6.6.3.1 Estuaries [1130]

#### 6.6.3.1.1 Ecology and Conservation Status

Overall, it is estimated that there is 761 km<sup>2</sup> of estuarine habitat within the Republic of Ireland, of which 433 km<sup>2</sup> is located within eleven SACs and accounts for 56.9% of the total national resource. The range of the habitat is considered stable at a national level. The habitat area for estuaries within the Lough Swilly SAC is estimated at 61.18 km<sup>2</sup> (NPWS, 2011a). The most recent overall site-based assessment of Lough Swilly recorded it as “*unfavourable-inadequate*” with a key factor attributing to this assessment being the increase in negative indicator species – Pacific oyster (*Magallana gigas*).

The estuary includes several principal benthic communities, namely: fine sand community complex, intertidal mixed sediment with polychaetes, subtidal mixed sediment with polychaetes and bivalves, muddy fine sand with *Thyasira flexuosa*, mud community complex and *Ostrea edulis* dominated community. The Proposed Development is located at the southern end of the SAC, at the head of the Lough, where the estuarine habitat at the proposed River Swilly crossing point was validated as pertaining to the annexed ‘mud community complex’ sub-type which aligns with NPWS (2011a) mapping. In addition, the following Estuary community sub-types are mapped (NPWS, 2011a) downstream of the Proposed Development:

Subtidal mixed sediment with polychaetes and bivalves, mapped in the central and southern parts of the SAC.

Fine sand community is mapped as being largely confined to the northern extent of the SAC with the southern limit recorded due west of Inch Island.

Intertidal mixed sediments with polychaetes community typically occurs along the western shore of the Lough from Rathmullen to Ardrumman and on the eastern shore in a thin band from north of Ballybegly Point to Farland Creek and the western and southern shores of Inch Island.

Given the close proximity of Estuary habitat 1130 to the Proposed Development and presence of the ‘Mud community complex’ sub-type at the proposed River Swilly crossing, an assessment on site integrity is conducted below with respect to targets set out in the site specific conservation objectives owing to potential indirect impacts and effects as a result of surface water run-off in either the construction or operation phase (sediment and pollutants).

#### 6.6.3.1.2 Assessment of Adverse Effects on Integrity

The Conservation Objective for estuaries for the Lough Swilly SAC is “*to maintain the favourable conservation condition of Estuaries in Lough Swilly SAC*” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for estuaries is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.3.1.2.1 Habitat Area and Community Distribution - Construction Phase

The targets for Habitat Area and Community Distribution are, respectively:

- “...the permanent habitat area is stable or increasing, subject to natural processes” (NPWS, 2011a)
- The following communities should be conserved in a natural condition: “...fine sand community complex, intertidal mixed sediment with polychaetes, subtidal mixed sediment with polychaetes and bivalves, muddy fine sand with *Thyasira flexuosa*, mud community complex and *Ostrea edulis* dominated community” (NPWS, 2011a).

The proposed River Swilly bridge in Section 2 is in close proximity to Annex I habitat 1130 Estuaries of the Lough Swilly SAC. The proposed Isle Burn Active Travel Bridge is at the SAC boundary; but is 3.8 km upstream of the annexed Estuary 1130 habitat. Refer to Table 6.4.

The expected construction sequence for the River Swilly bridge crossing is described in Appendix 1: Project Description, Section 1.12.9 and associated drawings. The bridge construction duration is estimated to be

approximately 24 months, within an overall 36-month construction period that occurs on either side of the proposed bridge. Descriptions of the bridge construction sequence should be read in conjunction with Appendix 2 NIS Drawings: Drawings 28–29. The drawings show temporary work areas for the structure in relation to the SAC boundaries.

**Table 6.4: Section 2 Bridges and Habitat Sensitivity**

Bridge Ref	Sensitivity	Bridge Span & Length (m)	Deck Width (m)	Freeboard (m)
<b>River Swilly Bridge</b>	Spans Lough Swilly SAC: QI habitat 'Estuaries' present at crossing.	Three-span 234m (SAC river clear span 108m)	28.25	3.70
<b>Isle Burn Active Travel Bridge</b>	Spans Isle Burn at Lough Swilly SAC boundary: QI habitat 'Estuaries' present 3.8km downstream of crossing.	Single Span 40m	4.5	2.24

In-stream works are not required for construction of the Section 2 River Swilly bridge. The construction involves no temporary or permanent in-stream footprint, or incursion into the SAC. The River Swilly is tidal at the proposed crossing point, with intertidal mud ('Mud community complex' of the QI habitat 'Estuaries' 1130) lining the channel and exposed at low tide. There is no temporary or permanent footprint on this QI habitat of the SAC related to bridge construction.

The proposed 108m span will clear the river channel and the eastern side (Milk Isle) flood embankment. (below) shows morphological features relevant to this assessment. The Eastern Pier (EP) of the bridge (Milk Isle side) is set behind the combined raised flood embankment and backing toe-drain at a distance of > 50m from the tidal River Swilly wetted channel. This is distance of c.3 m set back from the SAC boundary. The Eastern Abutment is a further 63 m inland from the pier. Pier construction works on this eastern (Milk Isle) side occur on flat ground agricultural land where the risk of sediment and pollutant wash out to the Swilly toe-drain is inherently reduced owing to its low gradient. Best Practice sediment loss controls (silt fencing) on the eastern (Milk Isle) side would likely be very effective owing to the flat topography. There are no direct hydrological outfalls to the River Swilly from the construction work area on this eastern (Milk Isle) side at the crossing location because temporary works are behind the existing flood embankment (Em), draining to the drain-like toe-drain (Td) where silt and sediment naturally deposit and are dredged as part of the OPW Swilly Embankments drainage programme. The toe-drain forms an additional line of protection during the Eastern Pier construction phase in the form of a linear settlement area (in conjunction with standard sediment control measures).

The Western Pier (WP) (Ballyraine side) is located approximately 5 m from the Lough Swilly SAC boundary and a total of 15 m from the Swilly wetted channel on gently sloping, rough grassland (Figure 6-2: ). The Western Abutment will be a further 63 m inland from the pier. There is no embankment or toe-drain on the western side of the channel meaning there is not the same level of inherent protection between the temporary construction works and the Lough Swilly SAC.

Figure 6-2: shows a panorama taken from the crest of the embankment (Em) showing the general morphology including Toe-drain (Td) on the eastern (Milk Isle) side with flat land near where the Eastern Pier (EP) will be located outside the SAC. The Western Pier (WP) (Ballyraine side) will be just inside the riverine border of rough vegetation. Both piers are outside the SAC boundary with no temporary or permanent footprint within the SAC during construction or operation.

As set out in the Project Description, there are measures included as part of the expected bridge construction sequence to avoid direct and indirect impact on the SAC, contain the temporary works areas and manage pollutant run-off at the Western Pier sub-structure construction area (foundation piling) on the Ballyraine side of the river. This includes: (i) the use of a temporary sheet piled cofferdam installed around the bridge pier area with a top height that excludes the 0.5% AEP coastal (+ 20% CCA) flood level + freeboard; (ii) robust silt fencing along the SAC boundary and around temporary works and any hardstanding areas to prevent pollutant run-off; (iii) fencing to demarcate and thus prevent unwanted incursion into the SAC.



**Figure 6-2: River Swilly Crossing Point (view downstream) at High Tide (Sept. 2024)**

The proposed Isle Burn Active Travel bridge is located on the upstream side of the existing triple-barrel culvert crossing of the Isle Burn River (EPA Leslie Hill stream), 30 m upstream of the Lough Swilly SAC boundary. There is no temporary construction phase, nor permanent footprint in Lough Swilly SAC. Details of the construction sequence and standard water quality protection measures are set out in Appendix 1: Project Description. The single span steel bridging structure will be craned into position following construction of the abutments. Temporary fencing at 5 m set-back from the river channel will demarcate the limit of allowable working, providing a 'no-go' exclusion zone for the construction period. Access tracks and haul routes will approach from either bank for the installation of abutments. There is no drainage outfall from the Proposed Development directly to the Isle Burn (Lough Swilly SAC) at the Rossbrackan end of Section 2. Attenuation Pond 10 is located outside the 0.5% AEP coastal and fluvial flood extents. Pond 10 outfall is to the Maghera-more 39 watercourse, a virtually flat (zero gradient), vegetated drain/wetland which ultimately merges with the Swilly Embankment toe-drain before out falling via non-return valve to the estuary. Apart from the pond's attenuation and treatment function, this watercourse (stagnant, vegetated drain) and the embankment toe-drain will further attenuate runoff and facilitate solids settlement during construction.

The SAC will therefore be a 'no-go' exclusion zone throughout the construction on both banks. Once the piers and abutments are installed the bridge deck will be constructed using a balanced cantilever method over the River Swilly, with no instream footprint on the river or Annex I QI Habitat 1130 'Estuaries'.

As detailed above, the Proposed Development is located at the southern end of the SAC, at the head of the Lough, where the main mapped estuarine communities are mud community complex and subtidal mixed sediments with polychaetes and bivalves following the main channel.

Whilst there is no incursion to the SAC involved with bridge construction as described above, two proposed outfalls will be installed from the western bank directly to the River Swilly: one from Attenuation Pond 07 and one from an interceptor ditch. These outfalls will be constructed without excavations within the SAC. Instead, outfalls will be set back from the channel, discharging over secured 'green' erosion protection solution (e.g., vegetated armour such as Hanes ScourStop® transition matting, or similar). It is important to note that attenuation ponds and interceptor ditch outfalls are primarily ephemeral in nature (intermittent flow during certain rain events) meaning their outfalls are not continuous sources of flow with scouring potential at the riverbank. Water quality of such outfalls is either the same as background (interceptor ditches that collect non-road related surface flow) or has been treated via wetland hybrid attenuation ponds. Attenuation Pond 06, on the eastern side of the bridge will outfall to the series of ephemeral drains (W2-16, W2-17) in the Milk Isle area that have low ecological value. Whilst they do eventually connect with the River Swilly via the embankment toe-drain, the pathway is highly attenuated throughout before reaching Lough Swilly via non-return outfalls from the embankment toe-drain.

There is no drainage outfall from the Proposed Development directly to the Isle Burn (Lough Swilly SAC) at the Rossbrackan end of Section 2. Attenuation Pond 10 is located outside the 0.5% AEP coastal and fluvial flood extents. Pond 10 outfall is to the Maghera-more 39 watercourse; a virtually flat (zero gradient), vegetated drain/wetland which ultimately merges with the Swilly Embankment toe-drain before out falling via non-return valve to the estuary. Apart from the pond's attenuation and treatment function, this minor

watercourse (stagnant, vegetated drain) and the embankment toe-drain will further attenuate runoff and facilitate solids settlement during construction.

At the River Swilly SAC crossing in Section 2 (downstream Letterkenny), proposed pre-commencement ground investigation (GI) works will be rotary core boreholes and will include archaeological surveys and testing. The works are located 15 m (minimum) away from the river channel, which is outside the SAC boundary as there are no bridge construction works required within the SAC. The GI and archaeological test trenching do not involve discharges to water. The GI works occur within discrete areas that are subject to disturbance by the construction footprint in any case, i.e., bridge pier foundations.

The primary concern during construction across the Proposed Development within the Lough Swilly catchment, and primarily at both bridge locations, is the risk of excessive sediment loss and pollution events from construction areas. Additional sedimentation over normally expected baseline levels, or pollution of the estuarine benthic habitat could have temporary localised effects on the localised polychaete/oligochaete-dominated upper estuarine mud community complex habitat (of QI Habitat 1130 'Estuaries') at the River Swilly crossing. Whilst noting that there will be no direct loss of habitat area because of the proposed clear-span bridge design and construction method, sediment and pollutant wash-out from construction areas may result in localised changes in faunal diversity and/or densities; which may slightly alter habitat area and community distribution as a result of (i) changes to sediment type and supply rate, (ii) effects of sediment and pollutants on the biological communities of the estuarine sediment sub-types. It is noted that an Irish study at Clonakilty Bay, West Cork, demonstrated that six months after direct physical disturbance of estuarine mudflat habitat related to pipeline laying, there was no significant difference in the mean number of total individuals (of all species) per core sample at study sites and the recovery in the impacted area was due to recovery of the polychaete *Hediste diversicolor* and Oligochaetes (*Tubifex* spp.) (Lewis et al., 2002). This demonstrates that both adult and juvenile *Hediste diversicolor* are mobile, with considerable dispersal capacity and are good burrowers, which aids their rapid recolonisation of disturbed mud community habitat. There is potential that indirect effects of, e.g., temporary or short-term additional sediment supply during construction, could cause temporary to short-term localised changes in faunal diversity and/or densities, noting that baseline diversity and abundances are low and there will be no direct disturbance of the habitat.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out as a result of** the Proposed Development construction phase. Therefore, **mitigation is required** to prevent adverse effects on water quality (sediment and pollutants) potentially affecting Habitat 1130 Estuaries in terms of changes in habitat area and/or community distribution.

#### 6.6.3.1.2.2 Habitat Area and Community Distribution - Operational Phase

The three-span bridge at the River Swilly crossing (W2-18) includes a 108 m clear span over the River Swilly. There is no temporary or permanent instream footprint. QI habitat 1130 'Estuaries' habitat is present beneath the proposed bridge deck. The bridge deck width is 28.25 m with clearance of circa 8-10 m above the benthic low tide channel (i.e., gradually sloping mudflat on each side). The orientation of the bridge is WNW-ESE, meaning there will be light incidence from mainly the S and SW position of the sun, with shading variable depending on season, i.e., daylight hours and position of the sun. Instream habitat is comprised of intertidal mud with the only macrophytes present being fucoid seaweed on the shoreline. The surface of the intertidal mud had a diatom biofilm (microphytobenthos) with a low abundance infauna of primarily Oligochaetes and the polychaete *Hediste diversicolor*. The general absence of macrophytes indicates that depth (and likely estuarine related turbidity) plays a role in algal productivity in any case and that the diatom biofilm on the mudflats is subject to regular changes in light incidence with tides. The focus in this assessment is on the diatom biofilm because that is the principal primary production element of the mudflat habitat at the River Swilly crossing location.

Shading has been reported to affect properties of estuarine microphytobenthos, but there are inconsistent findings throughout the literature, and it is very clear that light incidence is just one of many variables governing microphytobenthos properties. Tolhurst *et al.* (2020) manipulated light exposure on exposed intertidal flats next to the seaward edge of a mangrove forest in Sydney Harbour, Australia. Lightly shaded plots showed increased microphytobenthos biomass, while heavy shade decreased biomass, although they found there were different amounts and directions of response in absorption at different light wavelengths under different shading treatments, suggesting physiological shifts in pigment composition and/or behavioural responses such as migration by motile diatom species and/or a change in overall species composition. They noted that changes to temperature and (sediment) moisture may have also contributed to

the results because shading can decrease surface temperature and evaporation rates during exposure at low tide. There were reductions in abundance of some infauna under heavy shade, mainly oligochaetes, but the differences were not significant compared to unshaded or lightly shaded experimental plots.

Closer in context to Irish conditions, Defew *et al.* (2004) conducted a laboratory experiment using a natural microphytobenthic assemblage from the Eden Estuary, Scotland, to study effects of temperature and light incidence on response and species composition of an estuarine biofilm. At 10 °C, diatoms dominated the assemblage and individuals adapted to changes in the light regime by physiological acclimation (changes to pigments and light usage) with no change in biomass. At 18 °C, diatoms still dominated with no notable change in biomass, but a significant change in the species composition occurred, with species richness, evenness and diversity significantly higher in shaded assemblages. Cyanobacterial biomass increased with increasing temperature and at 26 °C was higher in shaded plots, and in all light conditions at high temperature eventually crashed (presumed self-induced nutrient limitation). There are clearly limitations in applying these findings to the site-specific situation on the River Swilly, but there is agreement in the literature that estuarine diatom biofilms show considerable adaptation to the particular light, temperature, nutrient and substrate conditions of a site. Numerous factors, not least periodic tidal shading effects have a role to play, seasonally influenced in terms of temperature induced response.

On balance, as supported by the literature, it is expected that intermittent shading effects between pre-existing tidal inundation and future daily/seasonally shifting bridge shade footprint at the kinds of temperatures that can be expected in the cool Atlantic climate of northern County Donegal (<sup>39</sup>annual daily mean range 3.4 – 19.4 °C) will be imperceptible in terms of overall primary productivity either local to the bridge and certainly within the wider SAC. The localised microphytobenthos beneath the more often shaded areas may show some slight decrease in biomass, with the diatom assemblage either remaining similar and adapting physiological or behaviourally (at lower temperatures, i.e., autumn through spring) or changing in assemblage but not biomass at the kind of temperatures that can be expected in summer. Note also that higher summer temperatures will be ameliorated by increased shade on the exposed low tide mudflat. None of this will fundamentally alter the level of primary productivity that forms the basis of the localised trophic web, i.e., which supports low abundances of infauna and has an anoxic layer just beneath the sediment surface. The predicted bridge shading effect will therefore be highly localised and not significant.

The main water quality pressure on estuaries in Ireland is related to nutrient enrichment (eutrophication), which causes excessive growth of macroalgae/phytoplankton and reduced dissolved oxygen concentration and can alter biological conditions that support the area and community distribution of algal and faunal communities of Annex I Estuary habitat. The sources of this pressure are mainly sewage/wastewater discharge and agriculture. Road runoff is not a significant source of nutrient. Irish studies show values for total phosphate (TP) in untreated road runoff during stormflows from comparable schemes as follows (from Bruen *et al.*, 2006):

- N7 Kildare Bypass (AADT 25-30,000; HGV 12.5%) – TP range 0.029-3.0mg/l; TP mean = 0.46mg/l
- M7 Monasterevin – (AADT 25-30,000; HGV 12.7%) - TP range 0.07-0.45mg/l; TP mean = 0.18mg/l
- M4 Maynooth (AADT 28,392; HGV 9.6% - TP range 0.1-0.21mg/l; TP mean = 0.14mg/l

These are relatively low TP concentrations, e.g., compared to wastewater discharge Emission Limit Values (ELVs). In addition, treatment of road drainage via attenuation ponds (as proposed in this scheme) has been shown in Irish studies to achieve TP removal efficiency of between 64% and 69% (Bruen *et al.*, 2006). This suggests TP concentrations in discharges from attenuation ponds can be expected to be very low across Section 2, further diluted within the Lough Swilly waterbody where residual concentrations would be imperceptible. Wetland attenuation also has potential to remove up to 94% of total suspended solids (Bruen *et al.*, 2006) which reduces sediment (and associated TP) load and risk of sedimentation locally or further downstream during the operation phase.

The provision of a new crossing of the River Swilly in Section 2 will result in a 46% reduction in traffic over the existing, highly congested Swilly crossing (N56 'Port Bridge' near Polestar Roundabout). Traffic will instead utilise the new Swilly crossing with its proposed sustainable drainage system. It would be expected

<sup>39</sup> OPW Hydrometric Station 39061 (Port Bridge) Swilly Estuary. Note: temperature data only available for complete years 2011-2015.

that the proposed level of attenuation in proposed ponds (constructed hybrid wetlands) and consequent treatment of road surface drainage would lead to at worst an imperceptible impact and at best a slightly positive impact on receiving water quality compared to baseline.

HEWRAT assessments were conducted (see Chapter 11: Water) as per TII Standard DN-DNG-03065 across all discharge points to watercourses from the Proposed Development. Results show that owing to the designed level of attenuation (and consequent run-off treatment): (i) all outfalls pass the risk assessment in terms of soluble (acute) copper and zinc impacts in road run-off discharge; (ii) all outfalls pass the risk assessment relating to Environmental Quality Standards (EQS) (mean annual concentration) for copper and zinc according to Surface Water Regulations (S.I. 272 of 2009, as amended), (iii) all sites pass the assessment for sediment (chronic) impacts because the non-silting discharge flow velocity is exceeded; (iv) spillage risk assessment results show that the annual probability of a serious pollution incidents are well below the acceptable risk limit of 0.5%, and (v) all applicable outfalls pass the cumulative assessment for soluble copper and zinc (acute and EQS) and sediment (chronic) pollutants, i.e., where there is more than one discharge on the same reach of a watercourse. Therefore, in relation to road run-off, the effects on aquatic receptors in Section 2, including QI habitat of Lough Swilly SAC will be intermittent and not significant; resulting in **no adverse effects** during the operational phase.

The bridge-shading effects on locally present Estuary habitat 'Mud community complex', in terms of potential changes to habitat area and community distribution, are considered to be localised and not likely to result in adverse effects during the operational phase of the Proposed Development.

Applying the precautionary principle, if drainage features (hydrocarbon interceptors, hybrid wetland attenuation ponds) were not adequately maintained during the operation phase, adverse effects on site integrity relating to ongoing water quality degradation associated with typical road run-off pollutants **cannot be ruled out** for 1130 Estuary habitat as a result of potential future changes to biological function that underpins habitat area and distribution. Therefore, **mitigation is required** relating to the regular operational phase maintenance of the drainage features.

### 6.6.3.2 Coastal Lagoons [1550]

Mapping (NPWS, 2011a) indicates that the distribution of coastal lagoons within the SAC are restricted to Blanket Nook Lough and Inch Lough which are approximately 13.4 km and 17.6 km<sup>40</sup> from the site of the proposed River Swilly Bridge crossing.

Given this spatial context, it is assessed that the Proposed Development will have no adverse effects on this QI since the Proposed Development is sufficiently distant from this QI to prevent the published attributes and targets (NPWS, 2011a) which underpin the Conservation Objective for this QI being maintained and achieved either during construction or operation of the Proposed Development. This includes a consideration of potentially adverse changes in water quality as a result of the construction and operation of the Proposed Development which, even if they do occur, are sufficiently distant and subject to such dilution as to avoid adverse effects on coastal lagoons. Adverse effects to site integrity **can be ruled out** on Coastal Lagoons. Therefore, **mitigation is not required** during the construction phase or operational phase.

### 6.6.3.3 Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) [1330]

#### 6.6.3.3.1 Ecology and Conservation Status

Saltmarshes are wetland areas found along the coastline that are covered by the tide. They are found in sheltered coastal areas such as estuaries. Saltmarshes contain distinctive vegetation communities that have generally developed on soft mud or muddy sediments deposited by the sea. The mud can generally only accumulate in relatively low energy environments where wave action is limited. Saltmarsh is generally restricted to the area between mid-neap tide level and high-water spring tide level. The lower marsh may be covered by the tide twice every day while the upper marsh may only be covered by the higher tides (spring tides) several times each month. The gradient of the saltmarsh allows the development of several ecological gradients in submergence and salinity, and this influences the development of distinctive zonation of plant

<sup>40</sup> Approximate direct line measurement from proposed crossing of Lough Swilly by Section 2 of Proposed Development to closest part of mapped coastal lagoons at Blanket Nook Lough and Inch Lough; respectively.

communities. The following Annex I habitats have been mapped within the Republic of Ireland and nearly all Irish saltmarshes can be allocated to one of the habitat types below with Atlantic salt meadows being the most common (McCorry & Ryle, 2009):

- Salicornia and other annuals colonising mud and sand (1310)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330)
- Mediterranean salt meadows (*Juncetalia maritimi*) (1410)
- Mediterranean & thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) (1420)

Atlantic salt meadows are documented to contain a distinctive topography with an intricate network of creeks and salt pans occurring on the medium to large-sized saltmarshes. Atlantic salt meadows contain several distinctive zones that are related to elevation and submergence frequency. The lowest part along the tidal zone is generally dominated by common saltmarsh-grass (*Puccinellia maritima*) with species like glassworts (*Salicornia* spp.), annual seablite (*Suaeda maritima*) and lax-flowered sea-lavender (*Limonium humile*) also important. The invasive common cordgrass (*Spartina anglica*) can be locally abundant in this habitat. The mid-marsh zones are generally characterised by thrift (*Armeria maritima*) and/or sea plantain (*Plantago maritima*). This zone is generally transitional to an upper marsh herbaceous community with red fescue (*Festuca rubra*), saltmarsh rush (*Juncus gerardii*) and creeping bent. Atlantic salt meadows are distributed around most of the coastline of Ireland. The intricate topography of the Irish coastline with many inlets has created an abundance of sites that are sheltered and allow muddy sediments to accumulate, leading to the development of saltmarsh. Atlantic salt meadows can comprise a number of plant communities (McCorry & Ryle, 2009).

Based on most recent reporting the range of the habitats is documented as 25,900 km<sup>2</sup> with the range showing a “stable” trend both in the short and long-term. The documented pressures and threats on the habitat include: “*modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure*” (M)<sup>41</sup> and “*other invasive species*” (M). The overall trend in conservation status for this habitat is documented as “*deteriorating*” due to the fact that 0.2 km<sup>2</sup> of this habitat had been lost to anthropogenic causes during the last reporting period (NPWS, 2025b). With respect to SACs, it is reported that there is 22.80 km<sup>2</sup> of this habitat noted as QI within such designations in the Republic of Ireland with none of the anthropogenic loss noted above located within such designations during the last reporting period.

With respect to Lough Swilly SAC, saltmarshes are documented as “*well represented in the inner sheltered areas*” of the SAC and noted as “*Atlantic salt meadow type*” (NPWS, 2024a). The distribution of Atlantic salt meadow is predominantly distributed in small areas along the margins of the lough, however, at the mouth of the lough there is an area mapped as “*potential*” Atlantic salt meadow within the SAC boundary (NPWS, 2011a), however habitat surveys within this area within the CPO boundary did not record any habitat with affinity to Atlantic salt meadow. More detailed mapping of the Atlantic salt meadow is provided in NPWS (2011c) and estimates that the SAC contains 27.80ha, the closest confirmed Atlantic salt meadow habitat is 1.4km straight line distance from the proposed River Swilly crossing with the hydrological distance longer due to its sinuous nature.

Atlantic salt meadow habitat has been screened in for assessment under the conservation objectives due to potential adverse effects arising during pre-construction archaeological/GI surveys and the construction phase itself. Potential impacts and effects have been identified as a result of surface water run-off (sediment and pollutants) Adverse effects would be indirect (downstream sedimentation/ pollution/ changes in hydrological and flooding regime).

#### 6.6.3.3.2 Assessment of Adverse Effects on Integrity

With reference to Atlantic salt meadow ecology and conservation status, an assessment of adverse effects on integrity with respect this habitat has been completed with reference to published Conservation Objectives underpinned by published attributes and targets for these objectives. The Conservation Objective

<sup>41</sup> M = medium importance with reference to Article 17 Reporting

for Atlantic salt meadow for the Lough Swilly SAC is “to restore favourable conservation condition of Atlantic salt meadows in Lough Swilly SAC”. The assessment against the underpinning attributes and targets of this objective for estuaries is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

#### 6.6.3.3.2.1 Habitat Area – Construction Phase

The target for habitat area is “area stable or increasing, subject to natural processes, including erosion and succession”.

The proposed River Swilly Bridge (Section 2) occurs 1.4 km upstream of Atlantic salt meadow habitat 1330 as mapped in the SSCOs (NPWS, 2011a, c). The Isle Burn (EPA name Leslie Hill) Active Travel Bridge is over 6.5 km distant from Atlantic salt meadow habitat 1330 as mapped in the SSCOs (NPWS, 2011a, c). The expected construction sequence for the River Swilly bridge crossing is described in Appendix 1: Project Description, Section 9.14 and associated drawings. The bridge construction duration is estimated to be approximately 24 months, within an overall 36-month construction period that occurs on either side of the proposed bridge. Descriptions of the bridge construction sequence should be read in conjunction with Appendix 2 NIS Drawings: Drawings 28–29. The drawings show temporary work areas for the structure in relation to the SAC boundaries.

Habitat surveys found no habitats in close proximity to the River Swilly crossing or Isle Burn that had affinity to salt meadow habitats. Therefore, adverse effects to site integrity **can be ruled out** on Atlantic salt meadow as a result of changes in the habitat area, in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase.

#### Habitat Area – Operational Phase

The habitat area will not be affected during operation of the Proposed Development given that the three-span bridge at the River Swilly crossing (W2-18) includes a 108 m clear span over the River Swilly. There is no temporary or permanent instream footprint. Therefore, adverse effects to site integrity **can be ruled out** on Atlantic salt meadows as a result of changes in the habitat area, in the absence of mitigation measures. Therefore, **mitigation is not required** during the operational phase.

#### 6.6.3.3.2.2 Habitat Distribution

The target for habitat distribution is “no decline, subject to natural processes”.

Since there are no adverse effects on habitat area it follows that there will be no decline in habitat distribution of Atlantic salt meadow habitat within the SAC as a result of the construction or operation of the Proposed Development. Therefore, adverse effects to site integrity **can be ruled out** on Atlantic salt meadow as a result of changes in the habitat distribution, in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase.

#### 6.6.3.3.2.3 Physical Structure: Sediment Supply, Creeks and Pans, Flooding Regime – Construction Phase

The target for physical structure: sediment supply is to “maintain/restore natural circulation of sediments and organic matter, without any physical obstructions”.

The primary concern during construction at both bridge locations, primarily the River Swilly Bridge, would be risk of excessive sediment loss from construction areas. In a worst-case scenario, i.e., intense heavy rainfall and a complete absence of water quality protection measures, additional sedimentation of the downstream habitats could occur.

The target for physical structure: creeks and pans is to “maintain/restore creek and pan structure, subject to natural processes, including erosion and succession”.

Since there are no adverse effects on habitat area it follows that there will be no change in the physical structure of creeks and pans of Atlantic salt meadow habitat within the SAC as a result of the construction of the Proposed Development.

The target for physical structure: flooding regime is to “Maintain natural tidal regime”.

The Proposed Development will have no significant adverse changes in upstream or downstream flooding regime and the natural tidal regime will be maintained.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out as a result of the Proposed Development. Therefore, mitigation is required in order to prevent impacts on water quality (sediment and pollutants)** potentially affecting Atlantic salt meadows as a result of changes in the Physical Structure.

#### 6.6.3.3.2.4 Vegetation Structure and Composition: Zonation, Vegetation Height, Vegetation Cover, Typical Species and Sub-communities, Negative Indicator Species – *Spartina anglica*, -- Construction Phase

The target for vegetation structure: zonation is to “Maintain range of saltmarsh habitat zonations including transitional zones”. The target for vegetation structure: vegetation height is to “maintain structural variation within sward”. The target for vegetation structure: vegetation cover is measured by “percentage cover at a representative sample of monitoring stops”. The target for vegetation composition: typical species and sub-communities is to “maintain range of sub- communities with characteristic species listed in Saltmarsh Monitoring Proposed development”

The primary concern during construction at both bridge locations, the proposed River Swilly Bridge and the Isle Burn Bridge, would be risk of excessive sediment loss from construction areas; recognising that sediment dynamics is part of the natural ecological process associated with salt meadow habitats In a worst-case scenario, i.e., intense heavy rainfall and a complete absence of water quality protection measures, additional sedimentation of the downstream habitats could occur, which could affect zonation (especially transitional zones), vegetation height and vegetation cover and the typical species within sub communities.

The target for vegetation composition: negative indicator species is “no significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur”.

The Proposed Development will have no adverse effects on the factors which maintain or influence the current distribution of this species within mapped Atlantic saltmarsh.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out as a result of the Proposed Development. Therefore, mitigation is required in order to prevent impacts on water quality (sediment)** potentially affecting Atlantic salt meadows as a result of changes in the vegetational structure and composition.

#### 6.6.3.3.2.5 Vegetation Structure and Composition: Zonation, Vegetation Height, Vegetation Cover, Typical Species and Sub-communities, Negative Indicator Species – *Spartina anglica*, -- Operational Phase

The sole threat to habitats especially vegetational structure and composition would result from water quality issues. As described above, it would be expected that the proposed level of attenuation in ponds/wetlands and consequent treatment of road surface drainage would lead to at worst an imperceptible impact and at best a slightly positive impact on receiving water quality compared to baseline. Therefore, adverse effects to site integrity **can be ruled out** on Atlantic salt meadows as a result of changes in the vegetational structure and composition, in the absence of mitigation measures. Therefore, **mitigation is not required** during the operational phase.

#### 6.6.3.4 *Molinia* Meadows on Calcareous, Peaty or Clayey-silt-laden Soils (*Molinia careuleae*) [6410]

Mapping indicates that the distribution of this meadow type within the SAC are restricted to Inch Level where c. 11 ha of this habitat is reported to occur (DAHG, 2013) the closest of which is located c. 17.7 km northwest of the Proposed Development<sup>42</sup>.

Given this spatial context, it is assessed that the Proposed Development will have no adverse effects on this QI as there is no impact pathway between the Proposed Development and the QI. This assessment includes a consideration of potentially adverse changes in water quality as a result of the construction and operation of the Proposed Development which, even if they do occur, are sufficiently distant (17.7 kilometres northwest of Proposed Development) and subject to such dilution as to prevent adverse effects on *Molinia* Meadows. Adverse effects to site integrity **can be ruled out** on *Molinia* Meadows alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

Whilst at the date of preparation of this NIS, there are no Site Specific Conservation Objectives for *Molinia* meadows listed within the Site Specific Conservation Objectives for the Lough Swilly SAC (NPWS, 2011a); due to the distance and lack of impact pathway from the Proposed Development this has no impact on the conclusion of the assessment. Given the lack of impact pathway that exists, it can therefore be concluded as a matter of reasonable scientific certainty that the Proposed Development will not adversely affect the integrity of the Lough Swilly SAC with respect to this QI. This is irrespective of what terms Site Specific Conservation Objectives are belatedly added for this QI.

#### 6.6.3.5 Old Sessile Oak Woods with *Ilex* and *Blechnum* in the British Isles

Mapping (NPWS, 2011a) indicates that the distribution of this woodland type within the SAC are restricted to four areas, the closest of which is located c. 7.8 km north of the Proposed Development<sup>43</sup>.

Given this spatial context and the lack of a pathway (given this habitat is not hydrologically linked), it is assessed that the Proposed Development will have no adverse effects on this QI since the Proposed Development is sufficiently distant from this QI to not prevent the published attributes and targets (NPWS, 2011a) which underpin the Conservation Objective for this QI being maintained and achieved either during construction or operation of the Proposed Development. This includes a consideration of potentially adverse changes in air quality as a result of the construction and operation of the Proposed Development which is sufficiently distant (over 200 m) to avoid adverse effects on this woodland habitat. Adverse effects to site integrity **can be ruled out** on Old Sessile Oak Woods alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.6 *Lutra lutra* (Otter)

##### 6.6.3.6.1 Ecology and Conservation Status

Otter are geographically widespread in Ireland and its presence depends on the provision of suitable aquatic habitats, sufficient food and cover for resting and breeding. The territories of an individual otter may utilise a number of holts which tend to be natural crevices associated with the roots of trees growing along river and lake banks. Otter can breed at any time of year most appear to do so in the Spring and early Summer. Pregnancy lasts c. two months and a litter of cubs is typically two to three individuals. The cubs tend to remain in the natal holt for up to two months, however a mother may move cubs between holts within her territory periodically. The juvenile otter remain as a family group for around six months or longer before the young otter disperse to establish their own territories. Otters that forage at the coast may have flexible foraging times linked to the tides. At low tide, otters hunt in the exposed rock pools and seaweed-covered

<sup>42</sup> Approximate direct line measurement from proposed crossing of Lough Swilly by Section 2 of Proposed Development to closest part of mapped *Molinia meadows* on calcareous, peaty or clayey-silt-laden soils; respectively.

<sup>43</sup> Approximate direct line measurement from proposed crossing of Lough Swilly by Section 2 of Proposed Development to closest part of mapped old sessile oak woods with *Ilex* and *Blechnum*; respectively.

rocks for fish and invertebrates. Their diet can include other prey also when available e.g. frogs, crayfish, birds and small mammals<sup>44</sup>.

The Irish otter population remains one of the most stable in Europe with Ireland being described as a “*stronghold*” for the species. As of 2025, five national surveys have been completed since 1980/1981. Following initial indications of decline (1990/1991 and 2004/2005), the national survey (2010) indicated recovery to 1980 levels and the population is reported as “*stable*” both with respect to short- and long-term trends, the 2023/24 survey was published in 2025 (NPWS 2025c). It is documented that a significant number of otter are killed on roads with incidents of accidents increasing during periods of flooding when fast flowing rivers at bridge crossings become impassable and otter must venture onto roads to find alternatives routes.

A total of 44 SACs are designated for otter in Ireland of which the Lough Swilly SAC is one such designation for otter. The most recent assessment of conservation status considered that the population of otter in Ireland was “*favourable*” with respect to range, population, habitat and future prospects with the overall conservation trend identified as “*stable*”. With respect to otter within the Natura 2000 network, the short-term trend of population size within the network is documented as “*stable*” which is consistent with the reported national trend (NPWS, 2025c).

Otter is also QI species for the River Finn SAC (discussed later in this chapter), however it is unlikely that the population of the River Finn otters and those of the Swilly Estuary will significantly interact given the distance of separation. Each population is dealt with independently.

With respect to Lough Swilly, and as detailed in Section 4.1.3 above, the surveys completed to inform the Proposed Development identified the following:

- Otter active along the surveyed sections of Lough Swilly and surveyed tributaries both upstream and downstream of the Proposed Development bridge crossing of the SAC, and it is assumed that they utilise the majority of watercourses within the Proposed Development boundary for foraging and commuting.
- No confirmed active holts or couches were identified within the survey area of 600 m upstream and downstream of proposed water crossing locations; however, a potential inactive holt was recorded in proximity of the proposed Swilly bridge crossing.

#### 6.6.3.6.2 Assessment of Adverse Effects on Integrity

With reference to otter ecology and conservation status, an assessment of adverse effects on integrity with respect to otter has been completed with reference to published Conservation Objectives underpinned by published attributes and targets for these objectives. The Conservation Objective for otter for the Lough Swilly SAC is “*to maintain the favourable conservation condition of Otter in Lough Swilly SAC*” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for otter is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.3.6.2.1 Distribution – Construction Phase

The target for distribution is “*no significant decline*”.

As detailed above it is assumed through evidence collected during detailed surveys that otter are present within the majority of the watercourses within the Proposed Development boundary. However, the Proposed Development will not result in the direct loss of any known breeding or resting sites based on the current baseline. Therefore, there is no direct adverse effect on such features. However, otters are mobile species in a dynamic environment and therefore pre-cautionary measures are included within the mitigation proposed to ensure that the baseline in advance of construction works is updated.

<sup>44</sup> [Otter – The Vincent Wildlife Trust](#)

Given that otters are known to be active within the Lough Swilly Estuary SAC and the watercourses that connect to it, in the absence of mitigation, there is a risk of otter being killed or injured during the construction activities, e.g., as a result of falling into open excavations. It is considered in the absence of mitigation measures, that such impacts could affect the population of otters locally.

The primary concern during construction at the bridge locations, primarily the River Swilly Bridge, would be risk of excessive sediment loss from construction areas. If that occurred, increased turbidity may give rise to behavioural, physiological or physical changes in migratory freshwater fish (salmon, sea trout, river/sea lampreys, eel) and estuarine species of River Swilly or Isle Burn, the most common change being behavioural in terms of either avoiding or being attracted to turbidity plumes. In that regard, it is noted that estuarine and migratory fish species are adapted to variable background levels of turbidity within a naturally muddy, depositing transitional water environment. In the absence of mitigation measures, an adverse impact on site integrity cannot be ruled out.

The Proposed Development also has the potential to cause disturbance to commuting and foraging otter using the Lough Swilly and its tributaries, and associated flood plain. Disturbance as a result of the proposed Lough Swilly bridge construction includes excavations, platform formation, cofferdam installation and operation, piling and bridge installation, machinery and artificial lighting may affect movement along the watercourses or within the estuary. However, otter are most active at dusk and dawn and although works are to be completed during the day, there will also be some intermittent night-time working. Mindful of the typical activity habitats of otter, the Swilly Estuary and its tributaries will continue to provide a functional corridor for the movement of otter. It is not considered that this will significantly alter the accessibility of otters up and downstream, although there will be short periods of disruption during the construction phase particularly during the intermittent night-time working. Furthermore, given the current use of the environment surrounding the Lough Swilly, otter populations in the area are considered to already be habituated to presence of human activity and noise within the environment (i.e. anthropogenic factors). Although, the potential localised displacement as a result of disturbance impacts to commuting and foraging otter would be limited to local level for the duration of construction, adverse impacts may arise during the construction period within the Swilly Estuary complex for 24 to 36 months.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent impacts associated with water quality (sediment and pollutants), accidental killing/injury, noise emissions and artificial lighting** potentially affecting otter distribution during the construction phase.

#### 6.6.3.6.2.2 Distribution – Operational Phase

Road collisions between vehicles and otter is a known and identified risk to otter and therefore the operation of the road has, in principle, the potential to result in road collisions and otter fatalities or injuries. This has been accounted for early in the design of the Proposed Development to provide a bridge design over Lough Swilly which will allow the continued passage by the species even at times of flood. In addition, the design of water crossings of any affected tributaries of Lough Swilly also include provisions to enable the continued safe passage of otter along these watercourses. Although it is not considered that the operation of the Proposed Development would result in levels of mortality or injury that could result in a significant decline in otter population distribution within the SAC, as a precautionary measure it is good practice to implement the use of standard measures to avoid and minimise such avoidable fatalities and injuries. Mitigation measures will therefore be necessary to further avoid incidents of otter being killed and injured during operation e.g. the inclusion of permanent otter fencing consistent with TII guidance.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent impacts associated with accidental killing/injury** potentially affecting otter distribution during the operational phase.

#### 6.6.3.6.2.3 Extent of Terrestrial Habitat

The target for extent of terrestrial habitat is *"no significant decline. Area mapped and calculated as 95.7 ha above high-water mark 44 ha along riverbanks/around pools"*.

Due to the design of the Proposed Development, there will be no direct or indirect loss of any terrestrial habitat within the SAC including that suitable for use by otter. Although there are occasions where construction works will occur within 10m of the watercourse channels the small area where this occurs is so

small in the context of terrestrial habitat that it is deemed insignificant. Adverse effects to site integrity **can be ruled out** for the extent of terrestrial habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.6.2.4 Extent of Marine Habitat

The target for extent of marine habitat is “*no significant decline. Area mapped and calculated as 839.5 ha*”.

Due to the design of the Proposed Development, there will be no direct or indirect loss of any marine habitat, including that suitable for use by otter, within the Lough Swilly SAC. The extent of marine habitat will be unaffected by the Proposed Development either during construction or operation. Adverse effects to site integrity **can be ruled out** for the extent of marine habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.6.2.5 Extent of Freshwater (River) Habitat

The target for extent of freshwater (river) habitat is “*no significant decline. Length mapped and calculated as 15.5 km*”.

Due to the design of the Proposed Development, there will be no direct or indirect loss of any freshwater (river) habitat, including that suitable for use by otter, within the Lough Swilly SAC. The extent of this habitat will be unaffected by the Proposed Development either during construction or operation. Adverse effects to site integrity **can be ruled out** for the extent of freshwater (river) habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.6.2.6 Extent of Freshwater (Lake/Lagoon) Habitat

The target for extent of freshwater (lake) habitat is “*no significant decline. Area mapped and calculated as 83.7 ha*”.

Due to the design of the Proposed Development, there will be no direct or indirect loss of any freshwater (lake/lagoon) habitat, including that suitable for use by otter, within the Lough Swilly SAC. The extent of this habitat will be unaffected by the Proposed Development either during construction or operation. Adverse effects to site integrity **can be ruled out** for the extent of freshwater (lake/Lagoon) habitat on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.6.2.7 Couching Sites and Holts

The target for couching sites and holts is “*no significant decline*”.

There were no confirmed holts or couching or resting sites recorded during field surveys, albeit considerable evidence of otter activity along the Swilly Estuary and its tributaries was recorded. The construction and operational phase will not cause any adverse impacts on site integrity.

Given that otter are a mobile species, a pre-construction survey for otter will be carried out within the ZOI of the Proposed Development in order to identify any new territories and the establishment of any new breeding or couching sites. **Adverse effects to site integrity cannot be ruled out** for the Couching Sites and Holts on otter alone in the absence of mitigation measures. Therefore, **mitigation is required** during the construction phase.

#### 6.6.3.6.2.8 Fish Biomass Available

The target for fish biomass available is “*no significant decline*”. Reference is made in the notes which accompany this attribute and target note “*broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters*”.

As mentioned previously, the primary concern during construction at the bridge locations, primarily the River Swilly Bridge, would be risk of excessive sediment loss from construction areas. If that occurred, increased turbidity may give rise to behavioural, physiological or physical changes in migratory freshwater fish (salmon,

sea trout, river/sea lampreys, eel) and estuarine species of River Swilly or Isle Burn, the most common change being behavioural in terms of either avoiding or being attracted to turbidity plumes. In that regard, it is noted that estuarine and migratory fish species are adapted to variable background levels of turbidity within a naturally muddy, depositing transitional water environment. In the absence of mitigation measures, an **adverse impact** on site integrity cannot be ruled out in relation to water quality.

#### 6.6.3.6.2.9 Barriers to Connectivity

The target for barriers to connectivity is “*no significant increase*”.

Due to the design of the bridge crossings over the SAC and its tributaries, there will be free and unhindered passage of otter beneath these structures including at times of flood. The Proposed Development will not result in any new barriers to connectivity for otter within Lough Swilly SAC.

Adverse effects to site integrity **can be ruled out** in relation to barriers and connectivity on otter alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.3.7 Harbour Porpoise

The harbour porpoise is the smallest cetacean species occurring in Irish waters, with adults averaging just 1.4 to 1.8 m long. Inhabiting only the Northern Hemisphere, the species is mainly found in cold temperate and sub-polar waters, in the North-East Atlantic from Iceland and northern Norway to north-west Africa.

Harbour porpoise is the smallest, most widespread and abundant cetacean species in Irish waters (Berrow, 2001). It has been recorded off all coasts and over the continental shelf but is thought to be most abundant off the southwest coast (Wall et al. 2013). This species is largely confined to shallow continental shelf waters, less than 200m in depth, where they predominantly feed on demersal fish. Little is known about breeding, but it appears that most calves are born during June and July. Sightings of this species offshore are relatively uncommon, but this may be due in part to low sighting and acoustic survey effort in favourable sea conditions (Ó Cadhla *et al.*, 2004). They may be encountered in estuaries, bays, and around coastal headlands (Harris & Yalden, 2008). Harbour porpoise is listed on Annex II of the EU Habitats Directive and SACs have been required in order to protect a representative range of habitats for this species within Member States and across the European Union.

There are 16 SACs designated for harbour porpoise in Ireland, one of these being Lough Swilly SAC. However, harbour porpoise abundance has not been described within this European Site.

The most recent Article 17 conservation assessment for harbour porpoise in Ireland deemed the species as being in Inadequate conservation status (NPWS, 2025c). The range is deemed to be Favourable along with the habitat, but the long-term trends in population, future prospects and overall assessment of conservation status for harbour porpoise remain uncertain due to insufficient accurate data for this species prior to 1999-2000. However, with improved surveillance and numerous ongoing records of harbour porpoises in the last 18-20 years, the short-term trend indicates the continued existence of sufficient good quality habitat for the species (DHLGH, 2024).

A desk-based study utilising records from NBDC (2025) indicated that harbour porpoise has been sighted in the last 10 years in marine and coastal habitats within Lough Swilly SAC. Live sightings were recorded between 2016 and 2023 within the SAC. The closest live sighting was c. 24 km north-east of the Proposed Development. It has been shown that although harbour porpoise is an inshore species they have a preference for deeper waters ranging between 10 to 35m in depth (Bailey & Thompson, 2009).

The construction of the Proposed Development could result in direct and indirect adverse changes in water quality within the Lough Swilly SAC at the point of construction of the new bridge crossings, downstream of these crossings (dissipating to negligible levels beyond the head of the lough) and from construction works within the catchment of the Lough Swilly SAC which ultimately leads to the lough via its tributaries. Such adverse changes can arise from slit-laden run-off, the use of cement and hydrocarbons and the use of other potentially polluting chemicals or materials during construction. Such adverse changes could result in changes to the habitat and quality of the lough, including with respect to harbour porpoise prey species such as salmonids and marine species, downstream of the polluting event(s) on at least a temporary basis.

However, given the distance of the Proposed Development (24 km) from the documented sighting of Harbour porpoise and the dilution effect within estuaries, it is not considered that such a change could be significant enough to result in a significant decline in harbour porpoise.

The Proposed Development is sufficiently distant from the recorded locations of this QI within the SAC and, while a theoretical connection pathway may exist regarding potential for downstream effects to the areas where the QI is recorded within the SAC, given this spatial context, there is in fact no practical impact pathway capable of resulting in an adverse effect because of (a) the distance of the pathway and (b) marine influence on the area where the harbour porpoises are recorded, the combination of which mean that the dilution effect on any potential contaminants would result in negligible levels. Therefore, there is no impact pathway from the Proposed Development to this QI.

For the avoidance of doubt, the Proposed Development will not result in any direct loss of habitat that supports this QI or deterioration of its distribution or quality during the construction phase or the operational phase. Whilst at the date of preparation of this NIS, there are no Site Specific Conservation Objectives for harbour porpoise listed within the Site Specific Conservation Objectives for the Lough Swilly SAC (NPWS, 2011a), due to the lack of impact pathway that exists for this QI, there can be no impact on the conclusion of the assessment. Given the lack of impact pathway that exists, it can therefore be concluded as a matter of reasonable scientific certainty that the Proposed Development will not adversely affect the integrity of the Lough Swilly SAC with respect to this QI. This is irrespective of what terms Site Specific Conservation Objectives are belatedly added for this QI.

### 6.6.3.8 Lough Swilly SAC – Summary of Adverse Effects

A summary of adverse effects is set out in Table 6.5 and the need for mitigation to address those adverse effects is identified. The mitigations to address those adverse effects are set out in Chapter 7.

**Table 6.5: Summary of Adverse Effects and Requirement for Mitigations to address those Effect with respect to the Lough Swilly SAC**

Qualifying Interest/Special Conservation Interest	Adverse Effect(s) on Integrity? <sup>45</sup>	Requirement for Mitigation to address Adverse Effect(s)? (See Chapter 7)
[1130] Estuaries	<b>Yes</b> , potential for adverse effects	<b>Yes</b>
[1550] Coastal Lagoons	<b>No</b> . No pathway for adverse effect.	<b>No</b>
[1330] Atlantic salt meadows ( <i>Glauco Puccinellietalia maritima</i> )	<b>Yes</b> , potential for adverse effects	<b>Yes</b>
[6410] <i>Molinia</i> meadows on calcareous, peaty or clayey silt-laden soils ( <i>Molinion caeruleae</i> )	<b>No</b> . No pathway for adverse effect.	<b>No</b>
[91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles	<b>No</b> . No pathway for adverse effect.	<b>No</b>
[1355] Otter ( <i>Lutra lutra</i> )	<b>Yes</b> , potential for adverse effects	<b>Yes</b>
[1351] Harbour Porpoise ( <i>Phocoena phocoena</i> )	<b>No</b> . No pathway for adverse effect.	<b>No</b>

<sup>45</sup> Actual or potential adverse effect; applying the precautionary principle as required.

#### 6.6.4 Lough Swilly SPA (Site Code: 004075)

The Conservation Objectives of the Lough Swilly SPA (NPWS, 2011a) are:

- To maintain the favourable conservation condition of the following bird species in Lough Swilly SPA.
  - Great crested grebe (*Podiceps cristatus*) [A005]
  - Grey heron (*Ardea cinerea*) [A028]
  - Whooper swan (*Cygnus cygnus*) [A038]
  - Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395]
  - Greylag goose (*Anser anser*) [A043]
  - Shelduck (*Tadorna tadorna*) [A048]
  - Wigeon (*Anas penelope*) [A050]
  - Teal (*Anas crecca*) [A052]
  - Mallard (*Anas platyrhynchos*) [A053]
  - Shoveler (*Anas clypeata*) [A056]
  - Scaup (*Aythya marila*) [A062]
  - Goldeneye (*Bucephala clangula*) [A067]
  - Red-breasted merganser (*Mergus serrator*) [A069]
  - Coot (*Fulica atra*) [A125]
  - Oystercatcher (*Haematopus ostralegus*) [A130]
  - Knot (*Calidris canutus*) [A143]
  - Dunlin (*Calidris alpina*) [A149]
  - Curlew (*Numenius arquata*) [A160]
  - Redshank (*Tringa totanus*) [A162]
  - Greenshank (*Tringa nebularia*) [A164]
  - Black-headed gull (*Chroicocephalus ridibundus*) [A179]
  - Common gull (*Larus canus*) [A182]
  - Sandwich tern (*Sterna sandvicensis*) [A191]
  - Common tern (*Sterna hirundo*) [A193]
- To maintain the favourable conservation conditions of the wetland habitat and Water Birds [A999] in Lough Swilly SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

Each objective is defined by a list of attributes and targets which are expanded upon in the assessment below.

### 6.6.4.1 Identification of Potentially Relevant SCI Bird Species

Based on the ornithology surveys completed for the Proposed Development (as documented in Chapter 5) the potentially relevant SCI bird species of Lough Swilly SPA for this NIS as set out below. Based on the surveys completed, only part of the footprint of Section 2 (and its environs) provides any potential ex-situ function for the SCI species of Lough Swilly SPA. No land within and adjacent to Section 1 along with part of the footprint of Section 3 of the Proposed Development provides any potential ex-situ function for any of the Lough Swilly SPA SCI species.

In relation to Section 2 and from the full suite of surveys 2017 – 2026 of the Proposed Development boundary, there are a number of SCI species regularly utilising the lands associated with the proposed bridge crossing and lands within 500m of the proposed road alignment in the area to the north of the Letterkenny airfield and on the Swilly Burn flood plain. However, they occur in low numbers compared to the overall SPA populations and the national/internationally important numbers criteria.

The findings show that the lands downstream of the crossing area that are within the SPA boundary, the area to the north of the Letterkenny airfield, and the Big Isle area and significantly away from the potential disturbance effects of the construction and operation of the Proposed Development, are preferable for the majority of SCI species and the habitats present are capable of absorbing the SCI bird species, given the numbers that may be displaced as a result of the Proposed Development. Based on the surveys completed over multiple years, the five SCI species which were identified as being potentially relevant to the assessment of the Proposed Development with respect to the Lough Swilly SPA were curlew (*Numenius arquata*), teal (*Anas crecca*), whooper swan (*Cygnus cygnus*), greylag goose (*Anser anser*) and redshank (*Tringa totanus*).

#### 6.6.4.1.1 Curlew

Curlew are a wading bird typical of intertidal areas (mud and sand flats) which are typically reliant on such areas but are highly likely to utilise alternative habitats at certain times (e.g. high tides). In the case of curlew, damp grassland provides feeding opportunities during high tides. The species is documented as widespread within the SPA occupying approximately 86% of the SPA (89% of subsites). The SPA regularly supports 1% or more of the all-Ireland population of curlew with a baseline population of 1,720 and the most recent population from subsequent surveys at 1,839 (five-year average from 2005/06 – 2009/10) (NPWS, 2011d). The population within the SPA is considered to be intermediate (unfavourable) with a population trend of -17.6% (compared to an all-Ireland trend for the species of -25.7% and the documented international trend for the species noted as “decline” (NPWS, 2011d).

The disturbance distance, as set out within the NatureScot guidance<sup>46</sup>, for curlew during the non-breeding season is stated as between 200-650m. A conservative estimate of 500m for curlew has been taken forward when assessing the likely disturbance distances for this project given the existing level of disturbance from the operational noises and construction level that are present within the area as recorded during the surveys undertaken and the level of habituation shown.

With respect to the Proposed Development, curlew have been recorded in levels above the 1% threshold of the Lough Swilly SPA in three distinct locations in relation to the Proposed Development, within the Milk Isle Swilly Bridge location, the area to the north of the Letterkenny airfield and to the north of the Isle Burn bridge location. The survey results from the 2025/2026 and 2022/2023 survey seasons are mapped in Appendix 2 NIS Drawings, but are shown below in Figure 6-3 and Figure 6-4 for ease of reference.

<sup>46</sup> [Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance | NatureScot](#)

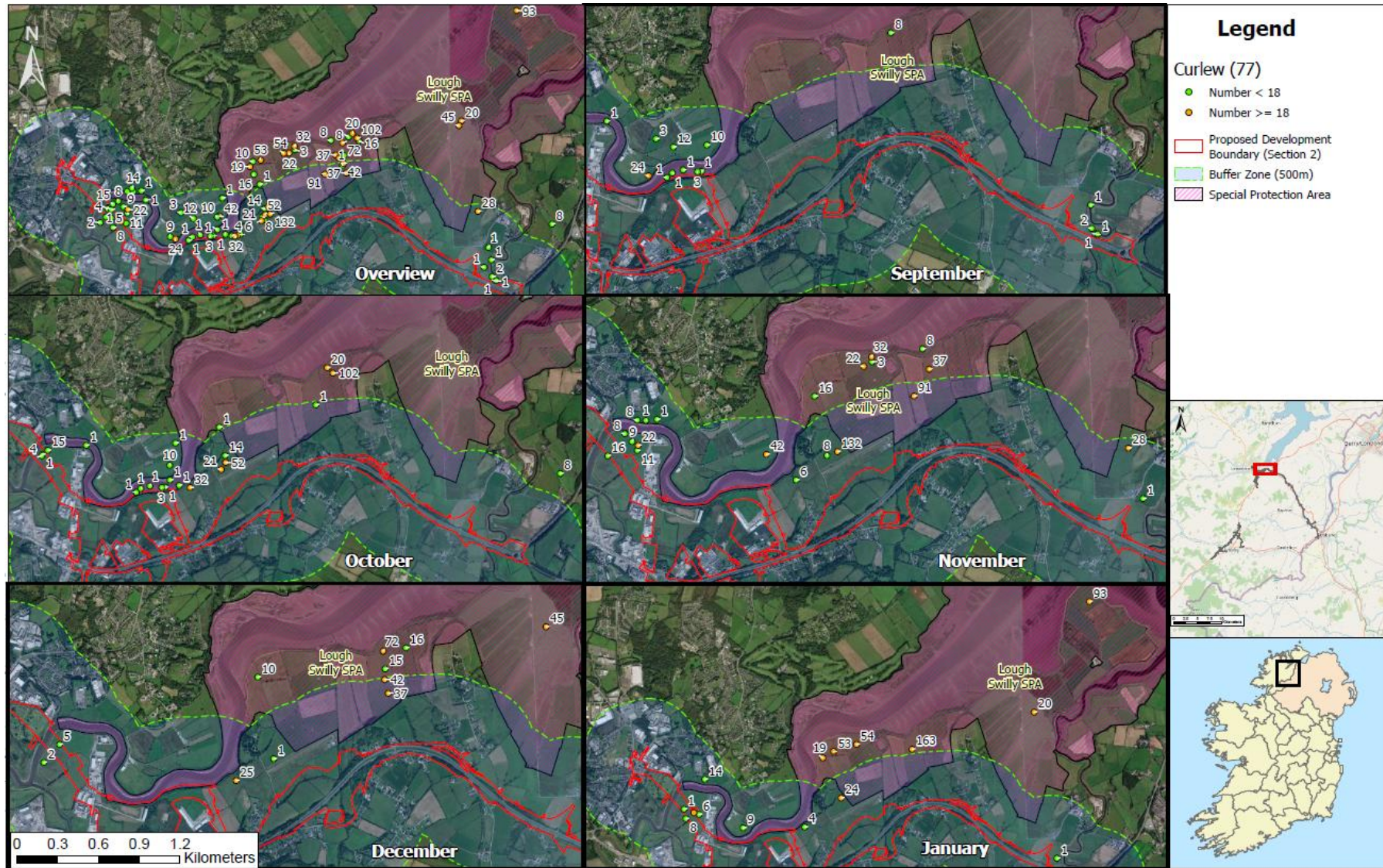


Figure 6-3: 2025/2026 Winter Bird Survey Results - (Curlew)



Figure 6-4: 2022/2023 Winter Bird Survey Results – (Curlew)

For the survey results shown in Figure 6-3 and Figure 6-4 it can be seen that curlew were recorded within the potential disturbance buffer, five times out of the 10 survey months as above the 1% threshold (orange dots) of the Lough Swilly SPA, within the Milk Isle area; Five out of the 10 survey months as above the 1% threshold of the Lough Swilly SPA in the area to the north of Letterkenny airfield; and three out of the 10 months as above the 1% threshold of the Lough Swilly SPA to the north of the Isle Burn bridge.

The largest curlew flock recorded within the disturbance buffer was 132 birds (7.7% of the baseline population) within the Letterkenny airfield area on one occasion.

Based on the surveys completed, the Proposed Development boundary and fields within 500m of construction works were considered to be of significance for curlew in the local Swilly Estuary context and within the context of the SPA, however there is sufficient areas within the locality within the areas to the north of the Letterkenny airfield and the Big Isle area within close proximity to the proposed works that are outside the disturbance zone, as well as areas in the wider SPA that are regularly used by curlew as shown in the SPA supporting Document (NPWS, 2011d).

#### 6.6.4.1.2 Teal

Teal is a species of dabbling duck typical of shallow subtidal, lagoons, intertidal muds and sandflats and which are typically reliant on such areas. They are a largely migratory species, moving south of their breeding range during the winter. Individuals breeding in Ireland are supplemented during the winter by birds from a range extending from Iceland, through Scandinavia to north-west Siberia. The species is documented as very widespread within the SPA. The SPA regularly supports 1% or more of the all-Ireland population of teal with a baseline population of 1,581 and most recent population of 2066, with an increasing population trend documented for the SPA based figures from between 1994 and 2008. The population of teal is considered to be in favourable conservation condition (= population stable/increasing). This trend is consistent with the documented all-Ireland and international trend for the species (NPWS, 2011d).

No specific disturbance distances for teal can be found within the Nature Scot guidance and a literature review has varying disturbances listed for teal and therefore a precautionary distance of 500m from Proposed Development will be taken.

With respect to the Proposed Development, teal have been recorded in levels above the 1% threshold of the Lough Swilly SPA in one main location within the main channel of the Swilly Estuary to the north of the proposed Swilly Bridge location. Teal were not recorded within this location during the 2022/2023 windscreen surveys but were recorded within this location during the 2025/2026 surveys and previously during the 2018-2020 surveys. The survey results from the 2025/2026 survey seasons are mapped in Appendix 2 NIS Drawings, but are shown below in Figure 6-5 for ease of reference.

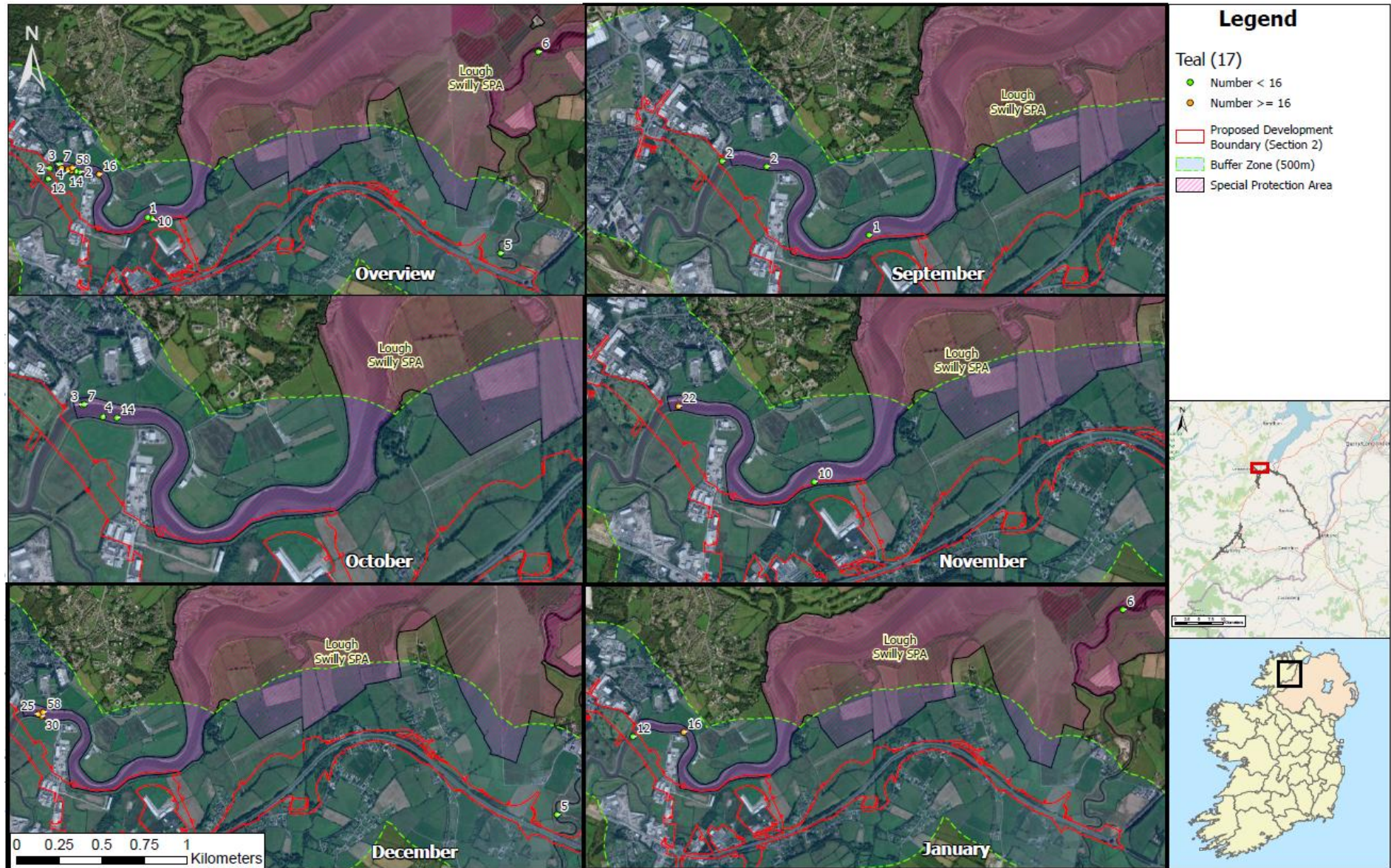


Figure 6-5: 2025/2026 Winter Bird Survey Results – (Teal)

The 2025/2026 survey data shows that teal utilise the main estuary channel on a regular basis and were recorded in numbers above the 1% threshold for the Lough Swilly SPA on three out of the five survey months. The peak flock count of 58 birds (3.7% of the baseline population) was recorded during the December survey. Given the nature of teal to be reliant on intertidal areas, sandflats and lagoons, it is likely that they are utilising areas within the survey area but within the estuary itself that could not be observed during the surveys, however these areas are likely to be outside the disturbance zone.

High tide counts targeted at the bridge crossing area during 2018 – 2020 did not find teal as one of the species present within the survey area with relative consistency being recorded five times out of the 12 surveys undertaken. However, they were recorded twice above the 1% threshold on two of those occasions, with the maximum count of 35 (2.2% of the baseline population).

During the dawn and dusk surveys carried out during 2019 – 2020 wintering season, teal were found to be present within the survey areas on a regular basis being recorded eight times out of the 12 surveys, however on only one occasion where these species above the 1% threshold of the SPA with a peak count of 18 (1.1% of the baseline population).

Therefore, out of the 24 surveys undertaken from 2018-2020 teal were only recorded above the 1% threshold for the Lough Swilly Spa on three of those occasions.

From the full suite of surveys from 2018 – 2026 show that teal regularly utilise the estuary habitat in close proximity to the proposed bridge crossing, however they usually occur in numbers that are not regarded as significant compared to the overall SPA population.

#### **6.6.4.1.3 Greylag Goose**

Greylag goose is a migratory species of large goose with the wintering population in Ireland originating from the Icelandic breeding population. A feral population of greylag goose is present in Ireland year-round. Greylag geese used to concentrate more on estuaries, where they fed on the roots of rushes and sedges. Since the intensification of agriculture in Ireland, greylag geese mostly feed on cereal stubble and grassland, while they have been observed to feed on potatoes. Greylag geese currently feed mostly on cereal stubble and grassland in their wintering areas. The SPA regularly supports 1% or more of the biogeographical population of greylag goose. The mean peak number of this species within the SPA during the baseline period (1995/96 – 1999/00) was 1,218 individuals with the most recent population estimated at 2,183 making the population of international importance.

The disturbance distance, as set out within the NatureScot guidance, for greylag goose during the non-breeding season is stated as between 200-600m. A conservative estimate of 500m for greylag goose has been taken forward when assessing the likely disturbance distances for this project given the existing level of disturbance from the operational noises and construction level that are present within the area as recorded during the surveys undertaken and the level of habituation shown.

With respect to the Proposed Development, greylag goose have been recorded in levels above the 1% threshold of the Lough Swilly SPA in two distinct locations in relation to the Proposed Development, within the Milk Isle Swilly Bridge location and the area to the north of the Letterkenny airfield. The survey results from the 2025/2026 and 2022/2023 survey seasons are mapped in Appendix 2 NIS Drawings, but are shown below in Figure 6-6 and Figure 6-7 for ease of reference.

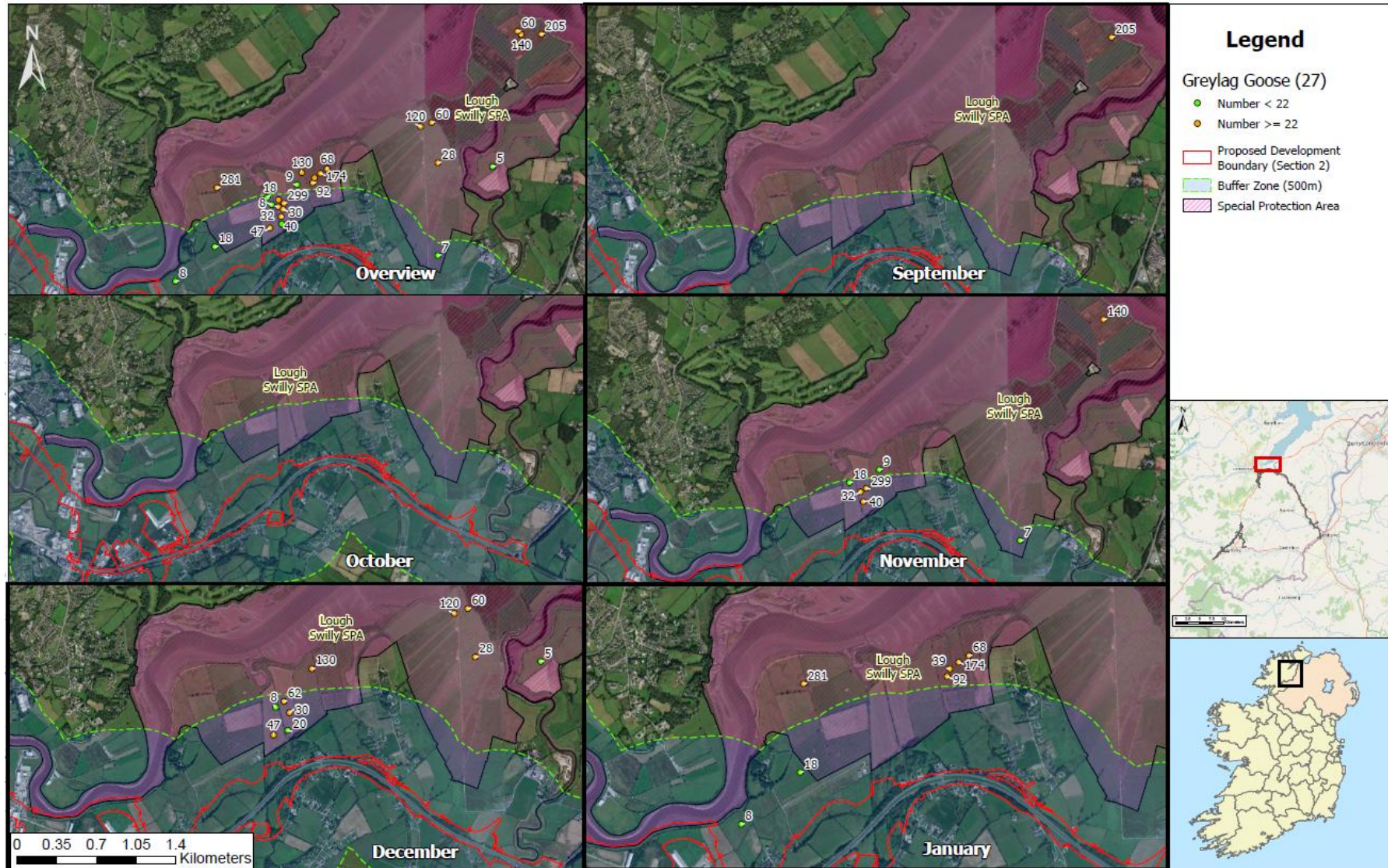


Figure 6-6: 2025/2026 Winter Bird Survey Results – (Greylag Goose)



Figure 6-7: 2022/2023 Winter Bird Survey Results – (Greylag Goose)

The 2023 to 2026 surveys show that the greylag goose were recorded within the potential disturbance zone above the 1% threshold of the Lough Swilly SPA on five out of the 10 survey months. They were recorded above the 1% threshold in the area to the north / northeast of the Letterkenny airfield on four out of the 10 survey months and in the area of Milk Isle on two out of the 10 survey months. The peak count of 350 individuals (13.7% of the most recent population) was located to the north of the Letterkenny airfield. The peak count within the Milk Isle area was 68 individuals (3.1% of the most recent population).

The 2017 to 2021 surveys mainly identified the greylag population utilising the area in proximity to the proposed works in section 2 within the Big Isle area and an area north of the Airfield, however the area to the north of the airfield only held 35 individuals approximately during each survey. This area was greater than 500m from the proposed works.

During the 2022/23 vantage point surveys the greylag goose were recorded on nine out of the 10 surveys in large numbers with a peak count of 2115 individuals in the Big Isle area from the Manorcunningham VP. Greylag goose were recorded on 5 of the 10 surveys, in lower numbers than the Big Isle area, with a peak count of only 230 individuals from the Airfield VP.

The surveys have shown that greylag goose have been recorded within the potential disturbance zone in relatively significant numbers. They have been recorded at the Milk Isle bridge crossing location in significant numbers, but they have only been recorded in this location during one survey year out of all the years covered and only on two occasions above the 1 % threshold. The more significant population has been recorded in the area to the north of the airfield location, however there is sufficient areas within the locality within the areas to the north of the Letterkenny airfield and the Big Isle area within close proximity to the proposed works that are outside the disturbance zone, as well as areas in the wider SPA that are regularly used by greylag goose as shown in the SPA supporting Document (NPWS, 2011d).

#### 6.6.4.1.4 Whooper Swan

Whooper swan are a migratory species and has a Palearctic breeding distribution which extends from Iceland to the Bering Sea. Most of the Icelandic breeding population overwinter in Britain and Ireland. It is documented that historically the species was known to winter in areas with freshwater wetland habitats or brackish lagoons and coastal bays. However, a change to feeding on terrestrial habitats has been observed since the mid-1990s with grassland and, increasingly, arable habitats used by foraging individuals. Whooper swans are considered to have a widespread winter distribution within the SPA and are typical within polderland – agricultural habitats within the SPA but are considered to be highly likely to utilise alternative habitats at certain times (e.g. high tide). The SPA regularly supports 1% or more of the biogeographical population of whooper swan with a baseline population of 1,673. With respect to whooper swan, Lough Swilly forms part of the Lough Swilly/Lough Foyle/River Foyle complex as the birds are documented to move frequently around the whole area. The area is particularly important as a staging area in late October/early November when it is documented that thousands of swans congregate at the site before making onward movements. The population is considered to be in favourable conservation condition (if population stable/increasing) which is consistent with the all-Ireland and international trend for the species (NPWS, 2011c). It is formally documented that whooper swan are recorded in a total of five subsites (distinct geographical areas divided up within the SPA) within the SPA, namely: Blanket Nook, Fahan Creek, Castle Shanaghan, Big Isle and, Inch Lough and Levels. During low tide surveys for the SPA, the swans were recorded with greatest frequency and highest numbers within the Inch Lough and Levels subsite and the importance of this subsite is documented. Smaller numbers are documented as foraging within the terrestrial habitats associated with the Swilly estuary and Big Isle subsites.

The disturbance distance, as set out within the NatureScot guidance, for whooper swan during the non-breeding season is stated as between 200-600m. A conservative estimate of 500m for curlew has been taken forward when assessing the likely disturbance distances for this project given the existing level of disturbance from the operational noise of the existing road and agricultural activities that are present within the area as recorded during the surveys undertaken and the level of habituation shown.

During the 2022/2023 surveys and 2025/2026 surveys within the Lough Swilly area of Section 2 whooper swan were only recorded on one occasion during all surveys with a count of two juveniles and therefore this area is not considered significant for whooper swan.

Whooper swan are known to utilise low-lying fields of improved agricultural grassland along the Swilly Burn floodplain in the townlands of Mulnaveagh and Tullytrap. A series of monthly surveys were undertaken, during the winter periods 2018/2019 and 2020/2021, to determine whooper swan occurrence within the vicinity of the proposed route alignment. The results of the surveys found that Swilly Burn floodplain is the only significant foraging area in the vicinity of the scheme with the foraging being mainly occurring at sites at a greater distance than 1 km to the east of the Proposed Development (see Appendix 6: Lifford Whooper Swan Report).

There was no sightings or records of swans foraging along or in the immediate vicinity of the proposed alignment at the Swilly Burn crossing.

A field immediately east of the proposed alignment at Tullytrap (shown as Site 1 in Figure 2 in Appendix 6: (Lifford Whooper Swan Report) was, when used for cropping potatoes, has been used for foraging by whooper swan after harvesting. The field was not in potato production in 2025/2026 and therefore its use or otherwise by whooper swan varies from year to year depending on farming activities prevalent at the time. The field is shown in Appendix 6: Lifford Whooper Swan Report at Figure 2 as Site 1.

During the surveys undertaken in the winter 2020-2021, swans were observed flying along the Swilly Burn in both an east-west and west-east orientation from Lough Foyle direction, as well as flying in a north-south orientation. While the watercourses may act as the main flyways, in view of the large populations of whooper swan wintering within the Swilly and Foyle estuaries, movement of birds could occur in any direction between core foraging and roosting areas and secondary sites further afield. It should be noted that no sites have been identified further west of the proposed Swilly Burn crossing location for foraging whooper swan and therefore, they are unlikely to fly further west along this corridor.

A further site to the west of the existing N14 on the flood plain of the Swilly Burn (shown as Site 2 in Figure 2 in Appendix 6: (Lifford Whooper Swan Report) was recorded as supporting significant numbers above the 1% threshold of the Lough Swilly SPA on three occasions with a peak count of 54 (3.2% of the Lough Swilly baseline population). This site is within the potential disturbance zone although the closest record for the swans is approximately 480m from the proposed road alignment and therefore is at the upper end of the potential disturbance buffer for this species.

During the 2025/2026 surveys whooper swan were only recorded on one occasion within this location with a peak count of 8 individuals so below the 1% threshold of the Lough Swilly SPA.

The surveys have shown that whooper swans have been recorded within the potential disturbance zone in relatively significant numbers, on a few occasions. It appears that the use of the areas in significant areas is opportunistic depending on the farming activities prevalent at the time. The surveys have shown that whooper swans do utilise areas further to the east along the Swilly Burn in greater numbers and frequency than recorded closer to the site.

#### 6.6.4.1.5 Redshank

The redshank (*Tringa totanus*) is a medium-sized wader. It is commonly seen on estuaries, mudflats and wet grasslands where it forages, and it occurs as both a breeding species and a winter visitor.

The species is documented as very widespread within the SPA. The site regularly supports 1% or more of the all-Ireland population of redshank. The mean peak number of this species within the SPA during the baseline period (1995/96 – 1999/00) was 1,404 individuals. It is deemed to be a favourable population which is described as stable/increasing.

The disturbance distance, as set out within the NatureScot guidance, for redshank during the non-breeding season is stated as between 200-300m. therefore a precautionary 300m was used in this instance although redshank are known to habituate to construction noise and other disturbances especially in more urban settings.

With respect to the Proposed Development, redshank have been recorded in levels above the 1% threshold of the Lough Swilly SPA within the potential disturbance zone for the species. Redshank has nearly always been recorded within the SPA and mainly in close proximity or within the estuarine habitats. The survey results from the 2025/2026 and 2022/2023 survey seasons are mapped in Appendix 2 NIS Drawings but are shown below in Figure 6-8 and Figure 6-9 for ease of reference.



Figure 6-8: 2025/2026 Winter Bird Survey Results – (Redshank)

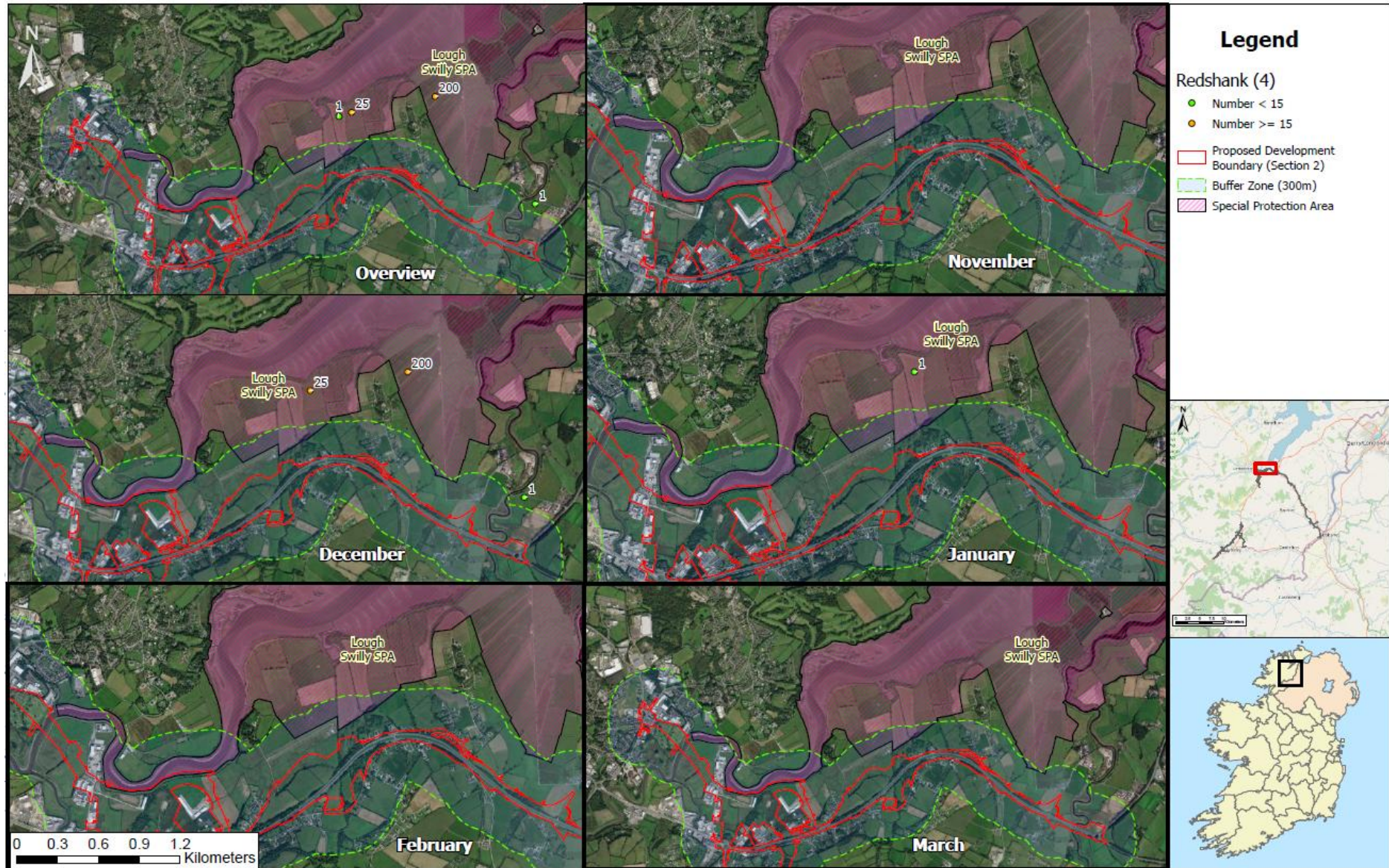


Figure 6-9: 2022/2025 Winter Bird Survey Results – (Redshank)

The figures above show that redshank although are relatively regularly recorded within the Lough Swilly SPA they have only once been recorded within the potential disturbance zone above the 1% threshold of the Lough Swilly SPA.

This is consistent with the surveys undertaken during 2018-2021, when redshank was also never recorded above the 1 % threshold.

Therefore, although the area is regularly used by redshank it can be concluded that the area is not a significant foraging area for redshank.

## 6.6.4.2 Assessment of Potentially Relevant SCI Bird Species

### 6.6.4.2.1 Curlew

The Conservation Objective for curlew for the Lough Swilly SPA is “*To maintain the favourable conservation condition of Curlew in Lough Swilly SPA, which is defined by the following list of attributes and targets*” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for curlew is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

#### 6.6.4.2.1.1 Population Trend – Construction and Operational Phase

The target for population trend is “*Long term population trend stable or increasing*”.

The population within the SPA is considered to be intermediate (unfavourable)<sup>47</sup> with a population trend (Current Site Trend 12years =1994-2007) of -17.6%, however this should also be considered against the national trend all-Ireland trend for the species of -25.7%) and the documented international trend for the species noted as “decline” (NPWS, 2011d). Therefore, there is a potential for factors at a larger spatial scale (e.g. regional and/or national) to be influencing the observed negative trend at the Lough Swilly SPA level.

Based on the surveys completed, the Proposed Development boundary and fields within 500m of construction works were considered to be of significance for curlew in the local Swilly Estuary context and within the context of the SPA.

It is therefore likely that curlew will be disturbed during construction due to noise disturbance and the presence of construction personnel. The disturbance during the construction phase will be short term (maximum 36 months) and is likely to be phased so that only certain areas will be affected at any one time. This will allow for disturbed birds to relocate into other suitable areas of habitat within the SPA both within the survey areas and in the wider SPA context, that have been shown to be suitable to support foraging and roosting curlew and are not subject to disturbance.

There is unlikely to be significant disturbance to curlew within the SPA during the operational phase of the development. The majority of the Section 2 scheme in proximity to the SPA is the upgrade of the existing alignment of the current carriage way. Therefore, curlew are habituated to the current use of the roadway in these locations. Where new elements of the road scheme, such as Milk Isle are proposed there will be limited disturbance of species from an area outside the SPA. However, it should be noted that in this location significant existing vehicle movements are present from the development along Bunagee Lane which the curlew have become habituated to.

Although an active travel network is being proposed along the main carriageway, the majority of this will be screened through existing planting and proposed planting or from existing development. The majority of the active travel network is also at a distance that would not result in disturbance to curlew. Where the active travel network is proposed along the Milk Isle and Swilly bridge crossing it is located on the southern side of the carriageway away from the SPA. Therefore, there is unlikely to be significant disturbance to curlew during the operational phase of the Proposed Development.

<sup>47</sup> = population decline in the range of 1-24%

The level of disturbance expected from the short-term effect of the construction work and the limited disturbance during the operational phase of the development is unlikely to affect the long-term population trend of curlew.

There are no predicted adverse effects to the long-term population trend. Adverse effects to site integrity **can be ruled out** for the population trend of curlew alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.1.2 Distribution – Construction and Operational Phase

The target for Distribution is *“No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation”*.

During the construction phase there is a potential for an temporary, change in the range of areas utilised by foraging and roosting curlew as a result of disturbance from construction activities. As outlined above the disturbance during the construction phase will be short term (maximum 36 months) and will to be phased so that only certain areas will be affected at any one time. This will allow for disturbed birds to be relocated into other suitable areas of habitat within the SPA both within the survey areas and in the wider SPA context, that have been shown to be suitable to support foraging and roosting curlew and are not subject to disturbance.

During the operational phase of the development, there will be a loss of the foraging and roosting area within the footprint of the Milk Isle carriageway. This is outside the SPA boundary and is considered to be an ex-situ foraging and roosting area. This small scale loss of a foraging and roosting area is not regarded as being significant in the overall numbers and range of areas used by curlew, given the context of the whole SPA and the available habitat that is present within the vicinity of the Proposed Scheme and the wider SPA. As outlined above disturbance during the operational phase is regarded as being minimal given the context of the Proposed Development within the area and through the level of existing and proposed screening from the scheme.

There are no predicted significant adverse effects to the distribution of curlew. Adverse effects to site integrity **can be ruled out** for the distribution of curlew alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.2 Teal

The Conservation Objective for teal for the Lough Swilly SPA is *“To maintain the favourable conservation condition of Teal in Lough Swilly SPA, which is defined by the following list of attributes and targets”* (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for teal is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.4.2.2.1 Population Trend – Construction and Operational Phase

The target for population trend is *“Long term population trend stable or increasing”*.

The population of teal is considered to be in favourable conservation condition (= population stable/increasing), with a population trend (Current Site Trend 12years =1994-2007) of +37%. When considered against the national all-Ireland trend for the species of +11.3%) and the documented international trend for the species noted as “increase” (NPWS, 2011d) the Lough Swilly SPA population is doing better than the national trend.

As detailed above teal were recorded utilising areas within the Lough Swilly SPA within 500m of the Proposed Development, mainly in the area within the Swilly estuary channel in proximity to the proposed Swilly Bridge. The peak count of these was above the 1% of the Lough Swilly population and therefore is of significance within the SPA context. However, the frequency in which the numbers were significant across all of the surveys undertaken from 2018 to 2026 is low with significant numbers recorded only during a few surveys.

It is therefore likely that teal will be disturbed during construction due to noise disturbance and the presence of construction personnel, but the numbers of birds being disturbed are not regarded to be significant, given the few times that significant numbers have been recorded.

There is limited data with regards to disturbance effects on teal published, however it is recorded that the disturbance response for teal is less with regards to cars than the presence of dog walkers or individual walkers. Given the locations of where teal have been recorded, within the estuary channel, and the lack of connection to the estuary channel from the Proposed Development, other than at the bridge crossing location. It is not considered that there will be significant disturbance to teal during the Operational phase of the Proposed Development.

Given the level of disturbance at the construction phase and the limited scope for disturbance during the operation phase, and given that the levels of teal recorded in proximity to the Proposed Development is very rarely above the 1% threshold of the SPA, it is considered that any disturbance from the Proposed Development is very unlikely to affect the long-term population trend for teal.

There are no predicted adverse effects to the long-term population trend. Adverse effects to site integrity **can be ruled out** for the population trend of teal alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.2 Distribution – Construction and Operational Phase

The target for Distribution is “*No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation*”.

During the construction phase there is a potential for a minor change in the local range of areas utilised by foraging and roosting teal as a result of disturbance from construction noise and the presence of construction personnel. However, given the number of teal recorded relevant to the Proposed Development and the amount of available habitat that is present within the Lough Swilly context that would not be affected by disturbance effects from construction, this short term (maximum 36 months), low level of disturbance is unlikely to affect the long term number and or range of areas used by teal.

It is not considered that there will be significant disturbance to teal during the Operational phase of the Proposed Development.

There are no predicted significant adverse effects to the distribution of teal. Adverse effects to site integrity **can be ruled out** for the distribution of teal alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.3 Greylag Goose

The Conservation Objective for greylag goose for the Lough Swilly SPA is “*To maintain the favourable conservation condition of Teal in Lough Swilly SPA, which is defined by the following list of attributes and targets*” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for greylag goose is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.4.2.3.1 Population Trend – Construction and Operational Phase

The target for population trend is “*Long term population trend stable or increasing*”.

The population of greylag goose is considered to be in favourable conservation condition (= population stable/increasing), with a population trend (Current Site Trend 12years =1994-2007) of +49.4%. When considered against the national all-Ireland trend for the species of +25%) and the documented international trend for the species noted as “stable” (NPWS, 2011d) the Lough Swilly SPA population is doing better than the national trend.

As detailed above the surveys have shown that greylag geese have been recorded within the potential disturbance zone in relatively significant numbers. They have been recorded at the Milk Isle bridge crossing location in significant numbers, but they have only been recorded in this location during one survey year out of all the years covered and only on two occasions above the 1 % threshold and this area is not considered a significant area for foraging greylag geese in the context of the SPA.

The more significant population has been recorded in the area to the north of the airfield location and has been recorded above the 1% threshold of the SPA on a number of occasions, within the potential disturbance zone.

It is therefore likely that greylag geese will be disturbed during construction due to noise disturbance and the presence of construction personnel. The disturbance during the construction phase will be short term (maximum 36 months) and is likely to be phased so that only certain areas will be affected at any one time. This will allow for disturbed birds to be relocated into other suitable areas of habitat within the SPA both within the survey areas and in the wider SPA context, that have been shown to be suitable to support foraging and roosting greylag geese and are not subject to disturbance.

There is unlikely to be significant disturbance to greylag geese within the SPA during the operational phase of the development. The majority of the Section 2 scheme in proximity to the SPA is the upgrade of the existing alignment of the current carriage way. Therefore, greylag geese have habituated to the current use of the roadway in these locations.

Although an active travel network is being proposed along the main carriageway, the majority of this will be screened through existing planting and proposed planting or from existing development. The majority of the active travel network is also at a distance that would not result in disturbance to greylag geese. Where the active travel network is closest to the area favoured by greylag geese to the north of the airfield it will be screened by hedgerow planting and is therefore unlikely to give rise to significant disturbance during the operational phase of the Proposed Development.

The level of disturbance expected from the short-term effect of the construction work and the limited disturbance during the operational phase of the development is unlikely to affect the long-term population trend of curlew.

There are no predicted significant adverse effects to the long term population trend. Adverse effects to site integrity **can be ruled out** for the population trend of greylag geese alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.3.2 Distribution – Construction and Operational Phase

The target for Distribution is “*No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation*”.

During the construction phase there is a potential for a small change in the range of areas utilised by foraging and roosting greylag geese as a result of disturbance from construction noise and the presence of construction personnel. As outlined above the disturbance during the construction phase will be short term (maximum 36 months) and will be phased so that only certain areas will be affected at any one time. This will allow for disturbed birds to be relocated into other suitable areas of habitat within the SPA both within the survey areas and in the wider SPA context, that have been shown to be suitable to support foraging and roosting greylag geese and are not subject to disturbance such as the areas further north of the airfield and the Big Ilse area.

During the operational phase of the development, there will be a loss of the foraging area within the footprint of the Milk Isle area. This is outside the SPA boundary and has only been recorded as used by greylag geese during 2022/2023 survey season and only on two occasions and therefore is not considered to be a significant area for ex-situ foraging and roosting.

This small scale loss of a foraging and roosting area is not regarded as being significant in the overall numbers and range of areas used by greylag geese, given the context of the whole SPA and the available habitat that is present within the vicinity of the Proposed Scheme and the wider SPA. As outlined above disturbance during the operational phase is regarded as being minimal given the context of the Proposed Development within the area and through the level of existing and proposed screening from the scheme.

There are no predicted significant adverse effects to the distribution of greylag geese. Adverse effects to site integrity **can be ruled out** for the distribution of greylag geese alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.4 Whooper Swan

The Conservation Objective for whooper swan for the Lough Swilly SPA is “*To maintain the favourable conservation condition of Whooper Swan in Lough Swilly SPA, which is defined by the following list of attributes and targets*” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for whooper swan is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.4.2.4.1 Population Trend – Construction and Operational Phase

The target for population trend is “*Long term population trend stable or increasing*”.

The population of whooper swan is considered to be in favourable conservation condition (= population stable/increasing), with a population trend (Current Site Trend 12years =1994-2007) of +30.7%. When considered against the national all-Ireland trend for the species of +44.3%) and the documented international trend for the species noted as “Increase” (NPWS, 2011d) the Lough Swilly SPA population is mirroring the national and international trend.

Whooper swan were not recorded in significant numbers within the immediate area around the Lough Swilly Estuary during the winter bird surveys with only two juvenile birds being recorded through all of the survey years.

However, an area of land along the Swilly Burn flood plain was identified as supporting ex-situ populations of foraging whooper swans. The surveys have shown that the sites in the general vicinity of the Swilly Burn are also used on a sporadic basis, with occurrence dependant on foraging suitability in any one year as determined by the farming activity (i.e. whether under grassland, tillage, potatoes, etc.). The Swilly Burn was also highlighted as a potential main flyway within the area from the populations within the Swilly and Foyle estuaries, however no record of birds roosting or foraging further west of the new Swilly Burn crossing have been recorded.

The majority of birds were recorded in areas outside the potential 500m disturbance range of the Proposed Development, but flocks were recorded within this 500m potential disturbance range in numbers greater than 1% of the Lough Swilly population, during the 2020/2021 survey period.

There is a potential for whooper swan to be disturbed during construction due to noise disturbance and the presence of construction personnel. However, given the frequency that whooper swan have been recorded within the vicinity of the Proposed Development and the amount of available habitat that is present within the Lough Swilly context, and these areas of ex-situ foraging resources within the Swilly Burn flood plain, outside the potential disturbance zone, this short term (maximum 36 months), low level of disturbance is unlikely to affect the long term population trend and prevent it from being stable or increasing.

The crossing of the Swilly Burn floodplain by the proposed Section 3 road will entail an embankment and clear span structure for the river. The bridge structure proposed is clear span using pre-cast W beams with a resultant low profile within the surrounding open landscape. The deck height is set at 3.2 m above the 1:100-year flood. Given that swans tend to fly at heights between 5-30m whilst commuting between foraging and roosting sites, and tend to have greater collision risk with wires (not proposed here) the low-profile structure will not present a collision risk to whooper swan during the operational phase whilst utilising the river corridor as a flight path, if they do pass further west than the bridge, even though no swans have been observed further west of the proposed bridge structure.

Given that the preferred foraging site within 500m of the proposed alignment is currently within 100-300m of the existing carriageway and therefore the swans are not significantly disturbed by vehicle road use. The closest point to the proposed alignment is at a distance of approximately 480m and at over 600m from the active travel network. Therefore, it is also considered that disturbance from users of the active travel network is highly unlikely especially given the screening that would be present too. It is not considered that there will be significant disturbance to whooper swan during the Operational phase of the Proposed Development.

There are no predicted significant adverse effects to the long term population trend. Adverse effects to site integrity **can be ruled out** for the population trend of whooper swan alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.4.2 Distribution – Construction and Operational Phase

The target for Distribution is “No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation”.

During the construction phase there is no disturbance to whooper swan within the Lough Swilly SPA. There is a potential for a small change in the range of areas utilised as ex-situ foraging whooper swan as a result of disturbance from construction noise and the presence of construction personnel in the Swilly Burn area. However, given the frequency in which whooper swan were recorded within the vicinity of the Proposed Development and the changeable nature of the habitats utilised by whooper swans from year to year it is not considered that any significant change in distribution would occur outside of natural patterns of variations.

As stated above it is not considered that there will be significant disturbance to whooper swan during the Operational phase of the Proposed Development.

There are no predicted significant adverse effects to the distribution of Whooper swan. Adverse effects to site integrity **can be ruled out** for the distribution of whooper swan alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.5 Redshank

The Conservation Objective for redshank for the Lough Swilly SPA is “To maintain the favourable conservation condition of Redshank in Lough Swilly SPA, which is defined by the following list of attributes and targets.” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for teal is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.4.2.5.1 Population Trend – Construction and Operational Phase

The target for population trend is “Long term population trend stable or increasing”.

The population of redshank is considered to be in favourable conservation condition (= population stable/increasing), with a population trend (Current Site Trend 12years =1994-2007) of +44.8%. When considered against the national all-Ireland trend for the species of +22.7%) and the documented international trend for the species noted as “stable/decline” (NPWS, 2011d) the Lough Swilly SPA population is doing better than the national trend and international.

As detailed above redshank have been noted mostly along the riverbanks of the Swilly Estuary in small numbers with only some observations being made on the improved grassland. It has only been found in significant numbers and within 300m of the proposed works when on the riverbanks of the Swilly. The peak count of 19 individuals (1.3% of the SPA population at designation) was observed on the bank of the Swilly adjacent to the rugby pitches during the 2025 update surveys. However, this is the only occasion that redshank have been observed above the 1% threshold of the Lough Swilly SPA, during all of the survey undertaken from 2018- 2026. It is therefore concluded that the areas within 300m of the Proposed Development does not form a significant component of the redshanks foraging and roosting areas.

It is therefore likely that only small numbers of redshank will be disturbed during the construction phase of the Proposed Development. Given the number and frequency of redshank recorded within the vicinity of the Proposed Development and the amount of available habitat that is present within the Lough Swilly context that would not be affected by construction noise and personnel, this short term (maximum 36 months), low level of disturbance is unlikely to affect the long term population trend and prevent it from being stable or increasing.

It is not considered that there will be significant disturbance to redshank during the Operational phase of the Proposed Development.

There are no predicted significant adverse effects to the long term population trend. Adverse effects to site integrity **can be ruled out** for the population trend of redshank alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.2.5.2 Distribution – Construction and Operational Phase

The target for Distribution is “No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation”.

During the construction phase there is a potential for a small change in the range of areas utilised by foraging and roosting redshank as a result of disturbance from construction noise and the presence of construction personnel. However, given the number of redshank recorded within the vicinity of the Proposed Development and the amount of available habitat that is present within the Lough Swilly context in the local area that would not be affected by construction disturbance, this short term (maximum 36 months), low level of disturbance is unlikely to affect the long term number and or range of areas used by redshank.

It is not considered that there will be significant disturbance to redshank during the Operational phase of the Proposed Development.

There are no predicted significant adverse effects to the distribution of redshank. Adverse effects to site integrity **can be ruled out** for the distribution of redshank alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.4.3 Assessment of Wetland and Waterbirds

The Conservation Objective for Wetlands and waterbirds for the Lough Swilly SPA is “To maintain the favourable conservation condition of the wetland habitat in Lough Swilly SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attributes and targets.” (NPWS, 2011a). The assessment against the underpinning attributes and targets of this objective for wetlands and waterbirds is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

##### 6.6.4.3.1.1 Habitat Area – Construction and Operational Phase

The target for Habitat Area Distribution is “The permanent area occupied by the wetland habitat is stable and not significantly less than the areas of 4,162, 2,419, 201 and 317 hectares for subtidal, intertidal, supratidal and lagoon (and associated) habitats respectively, other than that occurring from natural patterns of variation.”

The Proposed Development will not result in the loss of any land covered by the Lough Swilly SPA and there will be no change in the hydraulic function of the lough as a result of the Proposed Development. However, in the absence of mitigation, there could be instances of unintended incursion into the SPA or areas utilised by SCI species outside the SPA boundary by construction personnel, equipment or materials during construction. It is not considered that such instances of unintended incursion could prevent the favourable conservation status of those habitat resources that are utilised by regularly-occurring migratory waterbirds being maintained however good practice mitigation is included to avoid such instances.

Although direct loss of estuarine habitat is avoided through design, there is potential for downstream impacts on the SPA habitats due to changes in water quality during the construction and operation of the Proposed Development. Such changes could contribute to a reduction in the quality of the SPA habitats (e.g. pollutants entering sediments).

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent impacts associated with unintended incursion and water quality** potentially affecting wetlands and waterbirds during the construction and operational phase.

### 6.6.5 Lough Foyle SPA (Site Codes: 004087(ROI))

The Conservation Objectives of the Lough Foyle SPA (004087) (NPWS, 2014c) are:

- To maintain the favourable conservation condition of the following bird species in Lough Foyle SPA.
  - Red-throated diver (*Gavia stellata*) [A001]
  - Great crested grebe (*Podiceps cristatus*) [A005]
  - Bewick's wren (*Cygnus columbianus bewickii*) [A037]
  - Whooper swan (*Cygnus cygnus*) [A038]
  - Greylag goose (*Anser anser*) [A043]
  - Light-bellied brent goose (*Branta bernicla hrota*) [A046]
  - Shelduck (*Tadorna tadorna*) [A048]
  - Wigeon (*Anas penelope*) [A050]
  - Teal (*Anas crecca*) [A052]
  - Mallard (*Anas platyrhynchos*) [A053]
  - Eider (*Somateria mollissima*) [A063]
  - Red-breasted merganser (*Mergus serrator*) [A069]
  - Oystercatcher (*Haematopus ostralegus*) [A130]
  - Golden plover (*Pluvialis apricaria*) [A140]
  - Lapwing (*Vanellus vanellus*) [A142]
  - Knot (*Calidris canutus*) [A143]
  - Dunlin (*Calidris alpina*) [A149]
  - Bar-tailed godwit (*Limosa lapponica*) [A157]
  - Curlew (*Numenius arquata*) [A160]
  - Redshank (*Tringa totanus*) [A162]
  - Black-headed gull (*Chroicocephalus ridibundus*) [A179]
  - Common gull (*Larus canus*) [A182]
  - Herring gull (*Larus argentatus*) [A184]
- To maintain the favourable conservation conditions of the wetland habitat [A999] in Lough Foyle SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

### 6.6.5.1 Identification of Potentially Relevant SCI Bird Species

Unlike Lough Swilly SPA, the Proposed Development, during both construction and operation, will have no direct impacts and effects or indirect disturbance effects on the designated interests within the Lough Foyle SPA. The only potential effect relates to indirect effects arising from:

- The potential loss of land as a result of the Proposed Development which provides an ex-situ function to the designated interests of Lough Foyle SPA; or
- The disturbance of land within the vicinity of the Proposed Development which provides an ex-situ function to the designated interest of Lough Foyle SPA.

It is well documented and highlighted through Consultation with NPWS that many of the bird species move between the Lough Swilly/Lough Foyle/River Foyle complex. Based on the wintering bird surveys completed, the only land which potentially provides an ex-situ function to the designated interests of the Lough Foyle SPA are located within Section 2 of the Proposed Development and areas along Section 3 in regard to whooper swan; as assessed with respect to Lough Swilly SPA above.

With reference to that assessment, no adverse effects to Lough Swilly SPA were identified. Given that no adverse effects were identified for the relevant SCI bird species (designated interests) of Lough Swilly SPA, it is reasonable to conclude that no indirect effects from the sources above will result with respect to the Lough Foyle populations of those SCI bird species also.

### 6.6.5.2 Assessment of Wetlands

The Conservation Objective for Wetlands for the Lough Foyle SPA is “*To maintain the favourable conservation condition of the wetland habitat in Lough Foyle SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attributes and targets.*” (NPWS, 2014c). The assessment against the underpinning attributes and targets of this objective for wetlands is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

#### 6.6.5.2.1.1 Habitat Area – Construction and Operational Phase

The target for Habitat Area Distribution is “*The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 588 hectares, other than that occurring from natural patterns of variation.*”

The Proposed Development will not result in the loss of any land covered by the Lough Foyle SPAs and there will be no change in the hydraulic function of the lough as a result of the Proposed Development. Given the geographic separation of the Proposed Development from the SPA there is no risk of unintended incursion into the SPA by construction personnel, equipment or materials during construction. No mitigation is therefore required.

Although direct loss of estuarine habitat is avoided, there is potential for downstream impacts on the SPA habitats due to changes in water quality during the construction and operation of the Proposed Development. Such changes could contribute to a reduction in the quality of the SPA habitats (e.g. pollutants entering sediments). This in turn could affect the foraging resources of the relevant bird species that utilise the habitat.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent impacts associated with water quality** potentially affecting wetlands and waterbirds during the operational phase.

## 6.6.6 Lough Foyle SPA UK9020031 (NI))

The Conservation Objectives of the Lough Foyle SPA (UK9020031) (NIEA, 2015) are:

- To maintain each feature in favourable condition.
- The Features are:

- [A005] Great Crested Grebe (*Podiceps cristatus*)
- [A037] Bewick's Swan (*Cygnus columbianus bewickii*)
- [A038] Whooper Swan (*Cygnus cygnus*)
- [A043] Greylag Goose (*Anser anser*)
- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
- [A048] Shelduck (*Tadorna tadorna*)
- [A050] Wigeon (*Anas penelope*)
- [A052] Teal (*Anas crecca*)
- [A053] Mallard (*Anas platyrhynchos*)
- [A063] Eider (*Somateria mollissima*)
- [A069] Red-breasted Merganser (*Mergus serrator*)
- [A130] Oystercatcher (*Haematopus ostralegus*)
- [A140] Golden Plover (*Pluvialis apricaria*)
- [A142] Lapwing (*Vanellus vanellus*)
- [A143] Knot (*Calidris canutus*)
- [A149] Dunlin (*Calidris alpina*)
- [A157] Bar-tailed Godwit (*Limosa lapponica*)
- [A160] Curlew (*Numenius arquata*)
- [A162] Redshank (*Tringa totanus*)
- [A999] Habitat

#### 6.6.6.1 Identification of Potentially Relevant SCI Bird Species

Unlike Lough Swilly SPA, and as per Lough Foyle SPA (ROI) above, the Proposed Development, during both construction and operation, will have no direct impacts and effects or indirect disturbance effects on the designated interests within the Lough Foyle SPA (NI). The only potential effect relates to indirect effects arising from:

- The potential loss of land as a result of the Proposed Development which provides an ex-situ function to the designated interests of Lough Foyle SPA (NI); or
- The disturbance of land within the vicinity of the Proposed Development which provides an ex-situ function to the designated interest of Lough Foyle SPA (NI).

It is well documented and highlighted through Consultation with NPWS that many of the bird species move between the Lough Swilly/Lough Foyle/River Foyle complex. Based on the wintering bird surveys completed, the only land which potentially provides an ex-situ function to the designated interests of the Lough Foyle SPA (NI) are located within Section 2 and areas along Section 3 in regard to whooper swan, of the Proposed Development; as assessed with respect to Lough Swilly SPA above.

With reference to that assessment, no adverse effects to Lough Swilly SPA were identified. Given that no adverse effects were identified for the relevant SCI bird species (designated interests) of Lough Swilly SPA (NI), mirroring the assessment with the contiguous Lough Foyle SPA (ROI), it is reasonable to conclude that no indirect effects from the sources above will result with respect to the Lough Foyle SPA (NI) populations of those SCI bird species also.

Given the differences between the published Conservation Objectives of the ROI and NI, the following Conservation Objectives of Lough Foyle SPA (NI) are assessed:

### 6.6.6.2 Assessment of Habitat

The Conservation Objective for habitat for the Lough Foyle SPA (NI) is *“To maintain each feature in favourable condition”* (NIEA, 2015). The assessment against the underpinning attributes and targets of this objective for habitat is set out as follows and has been completed with reference to the Proposed Development as described in Appendix 1: Project Description and summarised in Chapter 3.

#### 6.6.6.2.1.1 Habitat Extent – Construction and Operational Phase

The targets for habitat extent is *“Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes”*

The Proposed Development will not result in the loss of any land covered by the Lough Foyle SPA (NI) and there will be no change in the hydraulic function of the Site as a result of the Proposed Development. Given the geographic separation of the Proposed Development from the SPA there is no risk of unintended incursion into the SPA by construction personnel, equipment or materials during construction.

There are no predicted significant adverse effects to the habitat extent. Adverse effects to site integrity **can be ruled out** for the habitat extent alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

#### 6.6.6.2.1.2 Extent of Different Habitats– Construction and Operational Phase

The targets for extent of different habitats is *“Maintain the extent of main habitat components subject to natural processes”*

Although direct loss of estuarine habitat at the Lough Swilly is avoided through design, there is potential for downstream impacts on the SPA habitats due to changes in water quality during the construction and operation of the Proposed Development. Such changes could contribute to a reduction in the quality of the SPA habitats (e.g. pollutants entering sediments). This in turn could affect the foraging resources of the relevant bird species that utilise the habitat.

In the absence of mitigation, **adverse effects to site integrity cannot be ruled out** as a result of the Proposed Development. Therefore, **mitigation is required in order to prevent impacts associated with water quality** potentially affecting the extent of different habitats during the construction and operational phase.

#### 6.6.6.2.1.3 Roost Sites – Construction and Operational Phase

The targets for roost sites is *“Maintain or enhance sites utilised as roosts”*

The Proposed Development will not result in the loss of any land covered by the Lough Foyle SPA (NI) and there will be no change in the hydraulic function of the Site as a result of the Proposed Development. Given the geographic separation of the Proposed Development from the SPA there is no risk of altering the location and number of roost sites.

There are no predicted significant adverse effects to the roost sites. Adverse effects to site integrity **can be ruled out** for the habitat extent alone in the absence of mitigation measures. Therefore, **mitigation is not required** during the construction phase or operational phase.

## 6.7 In-combination Effects

### 6.7.1 Methodology

Legislation, guidance and case law requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Proposed Development.

The assessment of in-combination effects has regard for existing and planned developments potentially affecting the River Finn SAC, Lough Swilly SAC, River Foyle and Tributaries SAC, Lough Swilly SPA and the two Lough Foyle SPAs with which a potential pathway has been identified in the foregoing sections of this NIS above. The assessment of existing developments is part of the baseline and has been assessed previously in this NIS. The assessment of planned developments is presented below.

RPS undertook a desk study to source publicly available information on plans, projects and activities within the defined ZoI using internet searches, planning databases and other available sources to identify other plans, projects and activities falling within the ZoI, which may have the potential to give rise to cumulative effects with the Proposed Scheme.

A search was conducted of national, regional and local plans which were deemed relevant to the Proposed Scheme. This list is not exhaustive of all plans and programmes, but instead focuses on those which may result in potential for adverse in-combination effect.

### 6.7.2 Plans

#### 6.7.2.1 National Development Plan

The Department of Public Expenditure and Reform (DPER) have published the National Development Plan (NDP), which covers the period from 2021-2030 and is the primary infrastructure investment plan adopted by the Government (DPER, 2021). The NDP is aligned with the delivery of the National Planning Framework: Ireland 2040 objectives and sets out the State's investment priorities to 2030 within the context of a changing demographic, the need for Ireland to move to a low carbon society, Brexit and the sustainable growth opportunities brought about by a growing population. The NDP 2021-2030 designates a number of national strategic outcomes and priorities of the plan including enhanced regional accessibility, compact growth and sustainable mobility.

The NDP recognises that the national roads network is a key backbone for both sustainable mobility and private transport provision across the country. It highlights the need for targeted investment in transport and road infrastructure, including the development of inter-urban roads and by-passes of regional town centres. Investment priorities over the period 2021-2030 assign €8 billion to the protection and renewal of national, regional and local roads, with continued investment in major road projects from the previous plan. Since 2018, a number of important national road projects have been built and completed under the NDP.

The strategic priorities of the NDP carry the potential for in-combination impacts with the Proposed Development on a variety of potential receptors, through pathways of habitat fragmentation / loss, increased disturbance, and surface/groundwater pollution. Such individual projects arising from these priorities will, however, be subject to their own AA requirements. The NDP 2021-2030 also sets biodiversity as a priority (i.e. Enhanced Amenity and Heritage – National Strategic outcome 7).

Thus, in-combination impacts from the National Development Plan 2021-2030 with the Proposed Development are not predicted.

#### 6.7.2.2 National Planning Framework First Revision (April 2025)

The *National Planning Framework First Revision* (hereafter referred to as the *NPF*), published in April 2025, replaced and updated the *National Planning Framework* originally published in 2018. The NPF is the primary articulation of spatial planning, development planning and land use policy in Ireland. It is a long-term strategy up to 2040 and it will focus on ensuring compatibility between future growth of cities / towns within

Ireland alongside environmental sustainability. It is intended that the NPF will both provide the focus to guide and inform future planning and set the framework for integrated investment decisions. The framework is based on directing development to existing settlements rather than allowing the continual expansion and sprawl of cities and towns. It provides each region with a set of objectives and key principles from which detailed plans are to be developed.

The NPF defines ten National Strategic Outcomes (NSOs) that represent a shared set of goals for every community across the country. NSOs of relevance to the TEN-T Priority Route Improvement and potential for in-combination effects with the Proposed Development are:

- **NSO 1: Compact Growth.** This objective seeks to manage the sustainable growth of cities, towns, and villages to create compact and attractive places in which people can live and work. NSO 1 seeks to achieve effective densities and consolidation of built form rather than further sprawl of urban development;
- **NSO 2: Enhanced Regional Accessibility.** This objective seeks to achieve better accessibility between the four cities and to the Northern and Western region to enable unrealised potential to be activated as well as better preparing for potential impacts from Brexit. The Proposed Development will facilitate the development of the Northern region through greater accessibility and connectivity between Donegal and Northern Ireland and the Republic of Ireland. Enhancing the accessibility of the North West will enhance the competitiveness and attractiveness of areas most exposed to the potential impacts of Brexit and this is stated in the NPF as follows:

*“Upgrading access to the North West border area utilising existing routes (N2/A14/A5).”*

- **NSO 3: Strengthening Rural Economies and Communities.** This requires development and diversification of the rural economy. The NPF specifically identifies the need to:

*“Invest in maintaining regional and local roads and strategic road improvement projects in rural areas to ensure access to critical services such as education, healthcare and employment.”*

The Proposed Development involves the targeted and appropriate intervention on three sections of the TEN-T Priority Route and national road network in Donegal. The intervention includes online improvements and upgrades, the bypassing of three urban centres, route realignment and the development of a complete, independent and integrated active travel network.

The NPF also contains National Policy Objectives (NPOs) for the protection of the environment and specifically European sites; including NPO85, NPO86, NPO87 and NPO88.

The NPF was subject to environmental assessment, including AA and SEA, which concluded that the implementation of the NPF would not result in adverse effects. Therefore, given this conclusion there is no potential for this Plan, particularly given the policy protections built into the NPF including with respect to European Sites, to result in in-combination adverse effects with the Proposed Development.

### 6.7.2.3 National Investment Framework for Transport in Ireland 2021

The Department of Transport, Tourism and Sport (DTTAS) has developed a successor high-level strategic framework to its Strategic Investment Framework for Land Transport (2015), the National Investment Framework for Transport in Ireland (NIFTI), for prioritising future investment in the land transport network. This is underpinned by and supports the spatial objectives and NSOs outlined in the NPF 2040. The new framework was published in December 2021. The NIFTI recognises the population growth targets outlined in the NPF and also the objectives of the Climate Action Plan. Investment under the NIFTI therefore aims to prioritise transport investment while enabling the delivery of a high-performing transport system. Four investment priorities are identified as follows:

- Decarbonisation
- Protection and Renewal
- Mobility of People and Goods in Urban Areas
- Enhanced Regional and Rural Connectivity

The 'modal hierarchy' favours active travel, followed by public transport, and then private vehicles. The 'intervention hierarchy' is structured as 'maintain, optimise, improve, new.'

The Proposed Development addresses many transport needs in the Donegal region. It improves the balance of the various travel modes and seeks to make alternative modes more attractive to both local residents and visitors.

The preparation and implementation of NIFTI must meet the provisions of the EU Habitats Directive (92/43/EEC) and transposing regulations (European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)). The conclusion of the NIS for NIFTI is that, following detailed assessment and appropriate mitigation for protecting European sites and their associated species and habitats, there will be no adverse effects on the integrity of any European sites, either alone or in-combination with other plans or projects. Significant individual infrastructure developments arising from the NIFTI will be subject to their own AA requirements and specific mitigation measures will need to be identified and implemented at the project-level AA stage. Furthermore, the Strategic Environmental Assessment (SEA) prepared for the NIFTI outlines the following objective for the protection of biodiversity, flora and fauna:

*'Protect and, where appropriate, enhance terrestrial, aquatic and soil biodiversity, particularly EU and national designated sites and protected species, and associated ecological corridors.'*

With the incorporation of these AA requirements and mitigation commitments, and the implementation of the objectives for the protection of European sites, the NIFTI is not foreseen to have any adverse effects to the ecological integrity of any European site. Thus, there are no predicted in-combination adverse effects from the NIFTI with the Proposed Development.

#### 6.7.2.4 National Roads 2040

National Roads 2040 (NR2040) is TII's strategy for realising the Project Ireland 2040, while also aligning to the DTTAS's NIFTI. It was published in full in April 2023. TII's vision for the strategy is that it will support the transport system while maintaining innovation, accessibility and safety. The strategy contains thirty commitments across a number of areas such as decarbonisation, urban congestion, technological change, population growth, and safety.

As part of the preparation of NR2040, environment assessments such as Appropriate Assessment (AA) have been undertaken in tandem with the development of the strategy to identify, at a strategic level, potential effects on the environment as a result of the strategy commitments/ actions. This assessment ensures the high-level of protection of the environment with a view to promoting sustainable development. The NR2040 recognises that the development and management of transport infrastructure must assess, avoid, reduce and mitigate adverse environmental impacts, including direct and indirect impacts to biodiversity and/or habitats. Significant individual road projects arising from the NR2040 will be subject to their own AA requirements and specific mitigation measures will need to be identified and implemented at the project-level AA stage.

With the incorporation of these AA requirements and mitigation commitments, the NR2040 is not foreseen to have any adverse effects on the ecological integrity of any European site. Thus, there are no predicted in-combination adverse effects from the NPF 2040 with the Proposed Development.

#### 6.7.2.5 National Biodiversity Action Plan 2023 - 2030

The *National Biodiversity Action Plan for 2023-2030* (DHLGH, 2024) demonstrates Ireland's continuing commitment to meeting and acting on its obligations to protect biodiversity through a series of targeted strategies and actions. Investment under the NDP is being provided to support the objectives of the National Biodiversity Action Plan, and its successor plan, including accelerating measures to conserve and restore peatlands and wetlands, combat the spread of invasive alien species, implement Local Biodiversity Action Plans and invest in agri-environment schemes.

This report and some of the mitigation measures proposed are considered consistent with specific objectives of the plan. For example, this report considers conservation objectives of relevant European sites (Outcome 2A) in order to ensure the conservation status of sites are met, while mitigation measures include for the

protection of watercourses (Outcome 2D: Action number 2D1) and the control of invasive alien plant species (Outcome 2H). Relevant objectives include:

- **Outcome 2D Action number 2D1:**  
*“By 2027, protection and restoration measures detailed in Ireland’s third RBMP are implemented to ensure that our natural waters are sustainably managed, that freshwater resources are protected so that there is no further deterioration; and where required, Ireland’s rivers, lakes and coastal water bodies are restored to at least good ecological status.”*
- **Outcome 2H:**  
*“Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.”*
- **Outcome 2A:**  
*“The protection of existing designated areas and protected species is strengthened and conservation and restoration within the existing protected area network are enhanced.”*

As the overall aim of the plan is to protect biodiversity and to continue and improve the transposition of the EU Habitats Directive and the EU Birds Directive into national legislation, there are no predicted in-combination adverse effects from the National Biodiversity Action Plan 2023 - 2030 with the Proposed Development.

#### 6.7.2.6 Letterkenny Plan and Local Transport Plan 2023-2029

The *Letterkenny Plan and Local Transport Plan 2023-2029* (herein referred as Transport Strategy) (DCC, 2024c) has been developed to be consistent with regional policies including the *Northern and Western Regional Assembly Regional and Spatial Economic Strategy 2020-2032*. During the period of the Strategy, it is intended that the national road network will be further developed in which the TEN-T Priority Route Improvement Project and associated public realm and sustainable transport enhancements in Donegal is noted. The Transport Strategy sets out primary objectives, including the strategic roads programme:

- **Objective LTP-T-O-2: “It is a policy of the council to:**
  - a) *Support and facilitate the appropriate development, extension and improvement of Letterkenny’s transport network*
  - b) *Not to permit development that would prejudice the implementation of a strategic roads project*
  - c) *Protect the corridors and routes and acquire the lands necessary for new roads and road improvement projects as identified.*

The Transport Strategy has been subject to SEA and AA, which were carried out in accordance with the strategy objectives set out in the Strategy and the strategic environmental objectives. All recommendations arising from the SEA and AA processes have been integrated into the Strategy and compliance with these measures will facilitate environmental protection and management.

All projects and plans arising from the Strategy will be screened for the need to undertake AA under Article 6 of the Habitats Directive. No projects giving rise to adverse effects on the integrity of European sites (cumulatively, directly or indirectly) shall be permitted on the basis of this Strategy (either individually or in combination with other plans or projects).

The NIS in support of the AA for the Transport Strategy concludes that with the incorporation of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where they cannot be avoided, the Strategy is not foreseen to give rise to any significant adverse effects on the integrity of the Natura 2000 network, alone or in combination with other plans or projects. Thus, the in-combination adverse effects from Letterkenny Plan and Local Transport Plan 2023-2029 with the Proposed Development are not predicted.

### 6.7.2.7 County Donegal Development Plan 2024 - 2030

The *County Donegal Development Plan 2024 - 2030* (DCC, 2024a) came into effect on 16 May 2024 and sets out an overall strategy for the proper planning and sustainable development of County Donegal over a six-year period. The Development Plan sets out guiding principles in relation to physical growth and renewal, economic, social and cultural activity, and environment protection and enhancement. The Development Plan sets out a vision to identify, protect, conserve and manage the cultural and natural heritage of the County and to encourage its sensitive integration into the sustainable development of the County for the benefit of present and future generations.

The Development Plan notes that *“A key consideration for the spatial strategy is the preparation of a common framework for spatial and environmental planning setting a context for a joint landscape character assessment, flood risk management, adaptive design approaches to development, increase awareness of the potential of the sea as a resource of renewable energy, and sustainable governance of maritime resources in the context of new legislation.”* It then sets out a number of policy objectives to ensure the protection of biodiversity in the County. Specific policies are included to protect European sites (SPAs and SACs) in addition to Natural Heritage Areas (NHAs) notably:

- **BIO-O-1**  
*“To preserve and enhance the biodiversity of the County in accordance with the relevant EU policies and national legislation.”*
- **BIO-P-1**  
*“To require all developments to comply with the requirements of the EU Habitats Directive and EU Bird Directive, including ensuring that development proposals: a. Do not adversely affect the integrity of any European/Natura 2000 site (i.e. Special Areas of Conservation and Special Protection Areas) including effects on ex-situ but functionally linked habitats, and species (e.g. Pearl Mussel) save where a plan must be carried out for imperative reasons of overriding public interest (IROPI).”*
- **BIO-P-2**  
Ensure that all developments seek to conserve/protect the qualifying interests of Ramsar Sites, Nature Reserves, Natural Heritage Areas (NHA), proposed Natural Heritage Areas (pNHA)... and any species protected under the Wildlife Act save to the extent necessary to provide for strategic infrastructure projects including but not restricted to the TEN-T Priority Route Improvement Project, Donegal... subject to such projects being in accordance with all relevant statutory and regulatory provisions. Otherwise, where no statutory or regulatory provisions apply this policy will be implemented by the Council in so far as same can be practicably and reasonably achieved within the context of such projects.”
- **T-O-1**  
*“To promote sustainable development and transportation strategies in urban and rural areas including the promotion of measures to: a. reduce energy demand in response to the likelihood of increases in energy and other costs due to long-term decline in non-renewable resources; b. reduce anthropogenic greenhouse gas emissions; and c. address the necessity of adaptation to climate change.”*

The “TEN-T Priority Route Improvement Project” is listed in Section 3.7 of the Development Plan where it is described:

- **CS-O-6**  
*“To coordinate and promote the delivery of key roads and access infrastructure (including the A5 Western Transport Corridor and A6 road projects, the TEN-T Priority Route Improvement Project, Donegal and improvements to the TEN-T network generally and the Bridgend Bypass Project) with the other relevant authorities including partners in the North West Strategic Growth Partnership and within the Northern and Western Regional Assembly so as to result in effective strategic connections to and throughout the County”*

Chapter 8 of the County Donegal Development Plan sets out the Infrastructure Strategy for the County which aims to provide for the maintenance and delivery of an efficient, integrated and coherent transport network in line with national and regional policies. The Development Plan provides an overview of the TEN-T Priority

Route Improvement Project in this chapter, and it is recognised as a Development of National and Regional Strategic Importance. It is an objective of the Council to:

- **T-O-11**

*To deliver improvements to the Trans European Transport Network (TEN-T), (as required by EU Regulation (EU) No.1 58315/2013 "Guidelines for the development of the Trans European Transport Network as part of the core and comprehensive transport network of Ireland."*

The Proposed Development works will not interfere with the design objectives of the Development Plan. The benefits of the TEN-T Priority Route Improvement Project are significant and wide-ranging including economic, safety, environmental, quality of life, enhancing regional accessibility, and strategic/cross border.

Due to the strategic nature of plans and the inclusion of policy objectives for protection of European sites and protected species within the County Donegal Development Plan 2024-2030, in-combination adverse effects with the Proposed Development are not predicted.

### 6.7.2.8 Draft Donegal Biodiversity Action Plan 2025 – 2030

The *Draft Donegal Biodiversity Action Plan 2025 – 2030* (DCC, 2024d) is the first local biodiversity action plan (LBAP) for the county. The upcoming Donegal Biodiversity Action Plan aims to align with Ireland's 4th National Biodiversity Action Plan (2023-2030) and address various threats to ecosystems at a local level. The Donegal LBAP will provide a framework and series of actions to conserve, enhance and raise awareness of the county's rich biodiversity. It will aim to maximise the contribution that it makes to the social, economic and environmental wellbeing of the county, taking into account local, national and international, including European priorities.

The Donegal LBAP will set out objectives and accompanying actions to conserve and create awareness about Donegal's biodiversity, which all contribute towards the protection of European sites and the species and habitats for which they are designated. As the overall aim of the Donegal LBAP will be to protect the natural environment and prevent biodiversity loss, in-combination adverse effects from the Donegal Biodiversity Action Plan 2025 - 2030 with the Proposed Development are not predicted.

### 6.7.2.9 County Donegal Heritage Plan 2023 – 2030

The County Donegal Heritage Plan 2023 - 2030 aims to raise awareness, understanding and appreciation of the rich and diverse heritage of Donegal (DCC, 2024b). It sets out a series of actions to interpret, conserve, manage and promote the county's natural heritage over the plan period and beyond.

The Heritage Plan contains several policies, objectives and actions to protect and aid biodiversity, natural heritage and European sites. In addition, the Heritage Plan was subject to AA Screening in accordance with the Habitats Directive, which concluded that the uses, development and effects arising from the plan (either individually or in combination with other plans and proposed developments) shall not give rise to significant impacts on the integrity of any European sites. Thus, in-combination adverse effects from the County Donegal Heritage Plan 2023-2030 with the Proposed Development are not predicted.

### 6.7.2.10 Water Action Plan 2024

The Water Framework Directive (WFD) provides a framework for the protection and improvement of rivers, lakes, marine and groundwaters in addition to water-dependent habitats. The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high-water quality status where it exists. The Water Action Plan 2024 sets out a proposed framework for the protection and improvement of Ireland's water environment in line with WFD objectives.

There are binding obligations on all Irish local authorities, including Donegal County Council, to achieve at least good status of surface waters, under the terms of the EU Water Framework Directive 2000/60/EC. The implementation of the Water Action Plan 2024 seeks compliance with the environmental objectives set under the plan, which will be documented for each water body. This includes compliance with the European Communities (Surface Waters) Regulations S.I. No. 272 of 2009 (as amended). The implementation of the Water Action Plan 2024 and achievement or maintenance of environmental objectives which will be set for

the receiving water bodies will have a positive impact on water dependent habitats and species within European sites.

The Water Action Plan 2024 is the third River Basin Management Plan for Ireland, and it outlines the measures the Irish government and other sectors are taking to improve water quality in Ireland's groundwater, rivers, lakes, estuarine and coastal waters and provide sustainable management of our water resources. It sets out a roadmap to restore Ireland's water bodies to the equivalent of 'good status' or better and to protect water from any further deterioration. The plan focuses on protecting and restoring water quality by preventing and reducing pollution, by restoring the natural ecosystem functions of rivers and by continuing to invest in water infrastructure.

The Water Action Plan 2024 outlines the approach that Ireland will take to protect waters. As the overall aim of the Water Action Plan is to protect and / or restore waters in Ireland, there are no predicted in-combination adverse effects from the Water Action Plan with the Proposed Development on any European site(s).

### 6.7.3 Proposed Developments (Projects)

In order to assess likelihood of significant effects of the Proposed Development in-combination with other proposed developments and approved developments, those identified through planning searches as outlined in the EIAR Chapter 19: Interactions and Cumulative Effects, were reviewed and assessed in terms of potential in-combination source and impact pathways which could affect the identified QIs and SCIs of the River Finn SAC, Lough Swilly SAC, River Foyle and Tributaries SAC, Lough Swilly SPA and the two Lough Foyle SPAs in combination with the Donegal TEN-T PRIPD.

Projects were considered on a case-by-case basis for screening in or out of the In-combination Assessment based upon the source- pathway- receptor conceptual model, the spatial/ temporal scales involved, data confidence, and receptor sensitivity. Given the significant geographical scale involved, a robust scoping exercise was carried out to identify only those projects with potential for likely significant in-combination effects on QIs and SCIs with the Proposed Development.

The following rationale was applied:

- Projects were screened in to the In-combination Assessment where they involve discharges to the IEF watercourses affected by the Proposed Development, and where those discharges involve water quality parameters that are similarly related to road construction (i.e. sediment, concrete, hydrocarbons). This included a number of larger housing developments whereby it was assumed they could overlap in the construction phase with similar potential for pollutant wash-out during construction.
- Projects were screened in to the In-combination Assessment where they involve discharges to the IEF watercourses affected by the Proposed Development, and where those discharges involve water quality parameters that are similarly related to road operation/ maintenance (i.e. sediment, heavy metals, hydrocarbons).
- Large infrastructure projects with direct physical impact on watercourses, e.g., proposed flood relief schemes, were screened in, depending on their location in relation to the Proposed Development.
- Larger Active Travel / Greenway projects were screened in where they were deemed to be of a scale requiring new earthworks or watercourse crossings that have potential for contaminated run-off during construction. Operational phase effects of Active Travel Projects were deemed not significant owing to lack of potential pollutant sources associated with road carriageway run-off.
- Small scale Active Travel / Greenway projects were screened out where they involve a repurposing of existing hardstanding or existing road carriageway, particularly if they had received consent as of November 2025. These projects do not require significant earthworks and/or new instream works (culverts).
- Projects were screened out where they have received planning permission and are likely to be constructed in advance of the Proposed Development, and where the application NIS found no adverse effect on conservation objectives or overall integrity on connected SAC and/or no significant negative

residual effects on receptors as a consequence of mitigations conditioned for that project, such that in-combination effects with the Proposed Development was deemed unlikely to be significant.

- Projects were screened out if the potential source character of pollutant washout in the construction phase were reasonably deemed to be of negligible scale, magnitude, duration or type as to reasonably be considered not significant. For example, site works occurring on an area of existing hardstanding in an industrial area where limited or no excavations are likely; excavation of a new football pitch (with the consideration that agricultural fields multiple that size are routinely ploughed and form part of the existing baseline).
- Projects were screened out if they share no hydrological connectivity (no pathway) or a theoretical or very tenuous pathway that could not reasonably have potential for in-combination effects, i.e., occurs in a separate surface water body or has extremely limited footprint within the same river water body as the Proposed Development. Professional judgement was applied in these cases so as to provide focus only upon potential for likely significant in-combination effects.
- Projects that involve discharges of nutrients (i.e., agricultural or waste water discharges of organic origin) were screened out, as organic nutrients are not significant parameters of concern with regards to road construction or operation.
- One-off housing projects were screened out, as these have low levels of construction phase emissions and will be required to connect to the public sewer or install a compliant on-site waste water treatment system.
- Residential and industrial development discharges were screened out as these will each connect to the public sewer, and/or their own water treatment facilities. Such discharges are ultimately controlled via appropriate emission limit values as conditions of emission licences, e.g., wastewater treatment plants, pig farms, food processing factories, etc.

Those applications screened in are displayed in Table 6.6 and their potential for in-combination impacts with the Proposed Development.

Note that, of the projects screened in but not yet submitted for planning approval (e.g., flood relief schemes) it is reasonable to assume none of these will have permission granted unless the individual project incorporates design, best practice and bespoke measures to mitigate adverse effects identified for those projects which includes, at a minimum, best practice construction phase water quality protection measures to protect aquatic habitats and species in line with industry guidelines (e.g., CIRIA C648, Murnane et al. 2006; Loughs Agency, 2016; IFI, 2016).

**Table 6.6: Projects for In-combination Assessment**

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
<p>A5 Western Transport Corridor (WTC) including the N14/ N15 to A5 Link (Appeal to judgement)</p>	<p>Occurs in Section 3 at the proposed River Finn crossing: N14/ N15 to A5 Link.</p>	<p>If the A5 WTC is constructed it will include the Trunk Road T3 which provides a connection to the proposed N14/N15 to A5 Link Bridge over River Finn in Section 3 of the Donegal TEN-T PRIPD. Note that if the A5 WTC is not built, subject to the current appeal, then the N14/N15 to A5 Link bridge as part of the Donegal TEN-T PRIPD will not be constructed. Hence this assessment considers both scenarios.</p> <p>Close hydrological connectivity exists between A5 WTC and Section 3 of Donegal TEN-T PRIPD in the lower River Finn / River Foyle catchment. The A5 WTC has no direct footprint on the Finn or Foyle rivers but occurs on the Northern Ireland side of the rivers Foyle and Finn, therefore any potential cumulative effects will be indirect, mainly related to potential wash out of construction related pollutants and primarily suspended solids. A review of the Environmental Statement for the A5 WTC concluded that owing to the suite of mitigation measures proposed in the area of water quality pollution during construction and drainage design (including SUDs features), likely effects (on aquatic habitats) owing to potential impact on water quality would not constitute a significant effect on the environment during construction or operation of the A5 WTC.</p> <p>Similarly, a suite of mitigation measures has been prescribed for the Donegal TEN-T PRIPD that will result in no significant residual effects on water quality (and associated aquatic habitats) of the lower Finn/Foyle rivers (Section 3). In terms of cumulative residual effects, if southern Section 3 of Donegal TEN-T PRIPD (Foyle catchment) and the section of the A5 WTC between Newbuildings, Co. Tyrone and Junction 7: Strabane N14/N15 (including the proposed Trunk Road T3) are constructed simultaneously, potential exists for slightly elevated cumulative peaks in concentration of (mainly) suspended solids in the receiving waters. Whilst this may be a slightly negative</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation of Proposed Development.</b></p>	<p><b>No</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>cumulative impact on water quality, it is necessary to examine the significance of its effect on aquatic receptors.</p> <p>The receiving waters are the tidal River Finn downstream of the proposed N14/N15 to A5 Link bridge in Section 3 of Donegal TEN-T PRIPD and the River Foyle downstream of the Mourne confluence. These lower river and transitional water reaches do not possess sensitive spawning or nursery habitats for salmon which are the Annex II QI species of River Finn SAC and River Foyle and Tributaries SAC. The receiving estuarine (transitional water) environment is routinely subject to natural variability in terms of turbidity and sediment dispersal. Whilst it cannot be ruled out that if there was concurrent construction of the two projects, some temporary periods of slightly elevated suspended solids may occur on the River Foyle and lower River Finn, the likelihood of these being measurable above background levels is low given the drained, sluggish and tidal nature of the receiving waters and the enormous dilution factor of the lower River Finn and River Foyle. Taking into account the river is of a depositing nature and habitats / species of the tidal river reaches are ordinarily subject to, and adapted for, intermittent turbidity increases, receptor sensitivity is not at the level it would be for a salmonid recruitment area. Indeed, the River Foyle and Tributaries SAC only includes the River Foyle in the cumulative ZOI as a link to the sea for salmon migrating to and from the spawning waters of the Mourne, Derg and Strule rivers in Northern Ireland (<sup>48</sup>NIEA, 2024). Similarly, the cumulatively affected reach of the lower River Finn is a migration/holding habitat only for fish movement to the upper Finn spawning habitats. There is no potential direct or indirect cumulative construction phase impact on sensitive spawning or nursery waters in relation to these two projects.</p>		

<sup>48</sup> NIEA (2024) River Foyle and Tributaries SAC (UK0030320) Conservation Objectives and Supporting Advice. Northern Ireland Environment Agency.

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>With the implementation of construction phase water quality protection measures for both projects, the effect of even slightly cumulatively elevated suspended solids (if they did occur, which is not a given) would not be likely to have significant negative effects because older migrating salmonids (returning adults and outward going smolts) are highly mobile, adaptable and respond behaviourally through avoidance, i.e., smolts moving quickly downstream and adults following instinct to move further upstream.</p> <p>No likely significant negative cumulative operational phase effect is predicted on aquatic receptors of the lower River Foyle or Foyle estuary during the operation phase of these combined projects owing to incorporation of sustainable drainage design measures (which confer run-off attenuation/ treatment) that are built into both projects.</p>		
<p>Barnesmore Gap Greenway. New greenway between Donegal Town and Ballybofey. (Phase 3: Design and Environmental Evaluation) potential Q1 2026 submission to ACP</p>	<p>Section 1: Burn Durnett sub-catchment and River Finn</p>	<p>Close hydrological connectivity exists with the proposed Greenway in Section 1 of Donegal TEN-T PRIPD. A review of available information on the Greenway project was undertaken, showing that as of early 2026, it was at an early design and environmental assessment stage. The Greenway is proposed to run between Donegal Town and Ballybofey/Stranorlar. Approximately half (12 km) of the proposed c. 22 km Greenway is in the River Finn (01 Foyle) water catchment. The preferred route option suggests interaction with watercourses within the Burn Durnett and River Finn catchment near Ballybofey/Stranorlar in proximity to Section 1 of the proposed Donegal TEN-T PRIPD. The Greenway design potentially includes: (i) potential instream works to refurbish a rail bridge over River Finn SAC downstream of Ballybofey, (ii) new (clear span) bridge over Burn Durnett river near Cappry to connect to the active travel element of the Proposed Development, (iii) several culverts on more minor watercourses that are not crossed by the Donegal TEN-T PRIPD in the upper Burn Durnett catchment, also noting that Greenway crossing widths are usually relatively minor (c. 5 -10 m). The Greenway project could give rise to similar construction phase emissions to water and aquatic habitats of River Finn and Burn</p>	<p><b>Yes, potential in-combination adverse effect on integrity during construction of Proposed Development.</b></p> <p><b>No potential in-combination adverse effect on integrity during operation of Proposed Development.</b></p>	<p><b>Yes, with respect to construction of Proposed Development and this Project</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>Daurnett giving rise to cumulative indirect impact on water quality that may indirectly affect aquatic habitats. It is noted that potential source areas (for e.g., sediment, hydrocarbons, concrete) for the Greenway will be smaller compared to Donegal TEN-T PRIPD, e.g., lesser scale of excavations for foot/cycle path. It can also be expected that the Greenway project will be required to include design, best practice and bespoke mitigations for pollutant loss prevention during construction to avoid adverse effects on water quality of the Burn Daurnett and River Finn SAC.</p> <p>Given the Greenway is still in the design stage, it can reasonably be expected that: (1) the Greenway design is likely to take into account the design of the Donegal TEN-T PRIPD, and (2) as for the current project, mitigation for instream and general construction works within the River Finn (Foyle) catchment for, e.g., culverts, bridge upgrade work, will be applied to the Greenway project including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952 (as for TEN-T PRIPD and set out in <b>Section 4</b> of this NIS) and that project will be subject to its own Appropriate Assessment reporting.</p> <p>That being said, applying the precautionary principle and assuming a direct overlap in the construction phases of the Greenway and Donegal TEN-T PRIPD, there is a combined potential for residual cumulative increases in water borne pollutants (mainly sediment) with indirect effects on fisheries habitats of the Burn Daurnett and River Finn, including spawning and nursery waters, with the River Finn SAC being the ultimate receiving water. Potentially significant indirect cumulative effects cannot therefore be ruled out in relation to the construction phase in Section 1 of the Proposed Development in the absence of further mitigation (refer to <b>Section 7.1.4</b>, below, for mitigation).</p> <p>There will be no likely significant operational phase cumulative negative effects on aquatic receptors in the Burn Daurnett and/or River Finn as there will be no barriers to fish movement introduced by either project and there are limited or no sources of operational phase run-off pollution from the Greenway (metals,</p>		

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
<p>Carrigans to Lifford Greenway Castlefin and Foyle Valley Greenway Link (Phase 2: Public Consultation)</p>	<p>Section 3: Runs along River Finn / Foyle corridor west bank.</p>	<p>sediment, hydrocarbons) that could have a significant cumulative impact on water quality in the catchment in combination with the Proposed Development.</p> <p>Close hydrological connectivity exists in Section 3. The emerging route corridor of this Greenway generally follows the western bank of the tidal River Foyle with crossings of River Deelee and Swilly Burn. These may or may not be new crossings, e.g., potential repurposing of existing R265 bridge (Swilly Burn). A review of available information on the Greenway route corridor suggests relatively limited potential for new culverts along the Greenway (apart from minor land drains).</p> <p>The Greenway project would potentially give rise to construction phase emissions to water (sediment, hydrocarbons, concrete) of a similar nature to residual emissions from the Donegal TEN-T PRIPD within Section 3, although the combined emission level would be unlikely to be cumulatively significant given the relatively modest scale of construction work / excavation required for the Greenway (i.e., smaller, manageable works / excavation areas). Furthermore, the receiving aquatic habitat lacks high sensitivity in terms of fisheries. The main receiving rivers in the cumulative ZOI (Deelee, Swilly Burn) are drained, tidal and depositing in the lower reaches, as is the River Foyle a short distance downstream. These river reaches are migration and holding habitats for fish only, with no potential for cumulative impact on sensitive salmonid spawning or nursery waters.</p> <p>It can reasonably be expected that the Greenway project will be required to include design, best practice and bespoke mitigations for pollutant loss prevention during construction to avoid adverse effects on water quality of watercourses it traverses and in the downstream ZOI. As for the current project, any mitigation for instream and general construction works within the River Finn (Foyle) catchment for, e.g., culverts, bridge upgrade work, will be the responsibility of that project, including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952 (as for TEN-T PRIPD and set out in <b>Section 4</b> of this NIS) and the Greenway</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b></p>	<p><b>No</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>project will be subject to its own Appropriate Assessment reporting.</p> <p>Given the tidal, depositing nature of the main stem rivers potentially cumulatively affected and with the implementation of water quality protection measures for both projects, the effect of even slightly cumulatively elevated suspended solids (in the unlikely event they did occur) would not have significantly negative effects. Firstly, the cumulative level of residual suspended solids (with mitigations in place for both projects) is very unlikely to be significantly increased over natural baseline variability for tidal and/or a transitional water environment such as the River Foyle. Secondly, the receiving environment lacks the sensitivity of, e.g., salmonid recruitment areas. Older migrating salmonids (returning adults and outward going smolts) that will be present in these reaches are highly mobile, adaptable and respond behaviourally through avoidance, i.e., smolts moving quickly downstream and adults following instinct to move further upstream.</p> <p>There will be no likely significant operational phase cumulative negative effects on aquatic receptors in the River Deelee or Swilly Burn, nor the downstream River Foyle as there are no significant sources (suspended solids, metals, hydrocarbons) of operational phase run-off pollution from the Greenway that are likely to have a significant cumulative impact on water quality in the catchment in combination with the Proposed Development.</p>		
<p>LK Green Connect, Letterkenny. Urban walking, cycling and public realm infrastructure development. (Design stage; potential Q1 2026 submission)</p>	<p>Section 2: Urban Letterkenny circa 2 km upstream of proposed River Swilly Bridge</p>	<p>Nearby hydrological connectivity exists in Section 2. The conceptual design indicates a series of connections along the River Swilly, including footpaths/trails and an urban wetland creation. There is potential interaction with small tributaries of River Swilly in urban Letterkenny (Sprackburn, Port Bridge Stream) which connect to the Swilly main channel c. 2.4 km upstream of the proposed River Swilly bridge in Section 2 of the Donegal TEN-T PRIPD. Possible walking/cycle paths extend along the Swilly riverbank as far as Port Bridge, located 1.5 km upstream of the proposed Section 2 bridge. The LK Green Connect design suggests some potential for culverts on the small</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b></p>	<p><b>No</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>tributaries and excavation for wetland creation and footpaths, but no direct impact on the Swilly main channel. The LK Green Connect project would potentially give rise to construction phase emissions to water (sediment, hydrocarbons, concrete) of a similar nature to residual emissions from the Donegal TEN-T PRIPD within Section 3, although the combined emission level would be unlikely to be cumulatively significant given the modest scale of construction work area / excavation required for the LK Green Connect project which is likely to be manageable with regards to prevention of potential construction phase pollutant wash-out. Furthermore, the lower River Swilly is tidal within the cumulative assessment reach and does not comprise sensitive salmonid spawning or nursery waters; it is a migration and holding habitat for anadromous and catadromous fish of the Swilly system. It's also noted that the receiving estuarine (transitional water) environment is subject to natural (and anthropogenic) variability in terms of turbidity and sediment mobilisation/dispersal from wider catchment sources and migrating fish are adapted physiologically and behaviourally to such variability.</p> <p>It can reasonably be expected that the LK Green Connect project will be required to include design, best practice and bespoke mitigations for potential pollutant loss prevention during construction to avoid adverse effects on water quality locally and in the downstream ZOI. The LK Green Connect project will also be subject to Appropriate Assessment with regards to Lough Swilly SAC.</p> <p>In a scenario where LK Green Connect and Section 2 of Donegal TEN-T PRIPD had a concurrent construction phase - given the relatively modest scale and nature of the LK Green Connect project, the large dilution capacity of the River Swilly and Lough Swilly in this location, and the mitigations both projects will employ to prevent pollutant wash out, the risk of cumulative suspended solids levels even being measurable within Lough Swilly is low. The effect in the estuarine environment, and on the migration of fish in the lower River Swilly will not be significantly</p>		

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>negative. There is no likelihood of significant residual negative construction phase cumulative effect on marine habitats of Lough Swilly, including qualifying interest Habitat 1130 'Estuaries' of Lough Swilly SAC as the cumulative level of residual suspended solids (with mitigations in place for both projects) will not be significantly increased over baseline variability.</p> <p>LK Green Connect has potentially positive operation phase effects owing to increased flood storage, with the benefits of reconnecting a large river to its floodplain (e.g., attenuation / sediment settlement, nutrient uptake within the created urban wetland) with potential for a slight positive effect on water quality within Lough Swilly in the long-term.</p>		
<p>N15 Corcam Bends (Stage 3 – Preferred Route Selection) (Potential ACP submission expected 2026)</p>	<p>Section 1: Immediately east of Proposed Development N15 tie in at nearest 200 m from River Finn SAC</p>	<p>Close hydrological connectivity exists in Section 1: N15 Corcam Bends Road Scheme commences to the east Stranorlar and continues for approximately 1.5 km east along the N15. It is located immediately east of proposed N15 tie-in of the Donegal TEN-T PRIPD in Section 1. The proposal is to upgrade the road to meet safety standards. Proposed works are c. 200m east of the Mullaghagarry culvert upgrade (Site W1-20) in Section 1 of the Donegal TEN-T PRIPD. There is tenuous hydrological connectivity via field drains and two small tributaries of the River Finn (and River Finn SAC) c. 700 m downstream of the confluence of the Mullaghagarry stream affected by Donegal TEN-T PRIPD. No direct impact on the River Finn main channel occurs from either project. Details of instream works (if any) for culvert upgrades on tributaries for N15 Corcam Bends are unknown, however, it can be expected that the project will be required to include design, best practice and bespoke mitigations for pollutant loss prevention during construction to avoid adverse effects on water quality locally and in the downstream ZOI.</p> <p>If the N15 Corcam Bends and Donegal TEN-T PRIPD construction phases occurred concurrently, excavations and instream works could be sources of intermittent suspended solids wash-out to the River Finn for the (temporary) duration of the former's construction. However, the N15 Corcam Bends project is of a modest scale locally, and very minor scale at a catchment</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b></p>	<p><b>No</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>level, with relatively small source areas for construction phase pollutant (mainly sediment) wash out to the River Finn. As for the current project, any instream works within the River Finn (Foyle) catchment (e.g., culverts if required), will be the responsibility of the N15 Corcam Bends project including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952 (as for Donegal TEN-T PRIPD and set out in <b>Section 4</b> of this NIS) and the project will be subject to its own Appropriate Assessment reporting.</p> <p>Considering the modest scale of the N15 Corcam Bends project, the tenuous connectivity to the River Finn, i.e., with ample opportunity to control pathways of construction phase run off to the River Finn, and the large dilution capacity of the River Finn main channel in this location, there is a very low likelihood of cumulative negative impact on water quality and hence no cumulative residual negative effects predicted on aquatic biota, including fisheries habitats of the River Finn as a result of possible combined construction of N15 Corcam Bends and Donegal TEN-T PRIPD.</p>		
<p>Riverine Community Park between Lifford in Co. Donegal and Strabane in Co. Derry (ACP Grant with Conditions 14/02/23)</p>	<p>Section 3: Circa 1.8 km downstream of proposed N14/N15 to A5 Link Bridge</p>	<p>Nearby hydrological connectivity exists in Section 3: The proposed riverine park includes a clear span cycle/foot bridge over the tidal River Foyle a short distance downstream of the confluence of the River Mourne and River Finn, 1.5 km downstream of the proposed N14/N15 to A5 Link bridge in Section 3. It includes and landscaping east and west of the river covering 22 ha (14.9 ha Lifford side; 7.8 ha Strabane side). The site has flood protection embankments on both banks. It includes SUDS measures to attenuate/treat hard surface run-off. Includes instream works for new ramped slipway (boats) and stepped access (kayaks), plus parking areas, amenity facilities, pathways and an access road, but there is no instream structure proposed that would create a barrier to fish movement or migratory routes. The EIA and NIS for the project proposes mitigation measures which are standard and best practice to protect water quality and prevent invasive species transfer, which will reduce the potential</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b></p>	<p><b>No</b></p>

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>for significant effects on the River Foyle and the habitats and species it supports. These measures are conditioned in the planning consent for the project (ACP 311542) in terms of water quality protection, biosecurity and invasive species management.</p> <p>If the Riverine Community Park and the southern elements of Section 3 of Donegal TEN-T PRIPD including N14/N15 to A5 Link bridge were constructed in the same timeframe, there is potential for cumulative elevation of construction phase pollutant wash-out, mainly suspended solids, in the River Foyle downstream of Lifford. The affected reach is potentially a short section of the River Foyle downstream of Lifford/Strabane (likely &lt;1km given the dilution capacity and depositing, tidal nature of the river). The receptor sensitivity is not high within the cumulative ZOI. There is no sensitive salmonid spawning and/or nursery habitat downstream of the Riverine project; the reach is a migration / holding habitat only. It is considered that the mitigation measures conditioned for the Riverine project and those prescribed for Donegal TEN-T PRIPD in the area of water quality protection, will reduce potential for significantly negative cumulative effects on the River Foyle and the habitats and migratory fish species it supports. Given the Riverine project received planning consent in 2023, and was officially launched with funding secured in January 2026, it is very likely to be constructed in advance of the Donegal TEN-T PRIPD, in which case there would be no potential for cumulative construction phase effects on aquatic habitats and fisheries. There is no potential for operational phase effects as both projects propose clear span bridges that do not create barriers to fish movement and migration.</p>		
<p><sup>49</sup>Ballybofey and Stranorlar Flood Relief Scheme (FRS)</p>	<p>Section 1: Works indicated on the same channels in that are crossed by</p>	<p>Close hydrological connectivity exists in Section 1. The FRS was in the early planning stage (Options) in early 2026 and timeframe to construction was unknown. The indicative FRS includes possible construction of discrete reaches of hard defence (flood</p>	<p><b>Yes, potential in-combination adverse effect on integrity during</b></p>	<p><b>Yes; with respect to construction of Proposed</b></p>

<sup>49</sup> <https://www.floodinfo.ie/frs/en/ballybofey-stranorlar/home/> (Accessed December 2025)

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
(Stage I: Scheme Development and Preliminary Design)	Section 1 of the Proposed Development.	<p>walls) in locations and has potential indirect (but nearby) overlap with Proposed Development on the following channels: Finn, Burn Durnett, Backlees and Treanamullin.</p> <p>Loughs Agency electrofishing data (2021-2024) records salmon and trout in the River Finn, Burn Durnett and Backlees (refer to <b>Appendix 8: Loughs Agency Fisheries Data 2020 - 2024</b>) which are each subject to potential cumulative construction phase impacts (i.e., instream interventions on the same channels) between the FRS and the Proposed Development. Potential cumulative impacts are related to instream works to install hard defences and/or upgrade culvert capacity (FRS related), in combination with culverts and general construction works (Donegal TEN-T PRIPD). As for Donegal TEN-T PRIPD (refer to <b>Section 4</b> of this NIS), mitigation for any instream works will be the responsibility of the individual FRS project and the FRS will be subject to its own Appropriate Assessment reporting, including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952. Furthermore, given the FRS is still in the early design stage, it can reasonably be expected that: (1) the FRS design and hydrological modelling will take into account the design of the Proposed Development, and (2) the timing of the construction phases at key locations, i.e., where there is a risk of cumulative water quality and fisheries habitat impacts, may be scheduled so as to avoid direct construction phase overlap between projects.</p> <p>That being said, applying the precautionary principle and assuming a direct overlap in the construction phases of the FRS and the Proposed Development, there is a residual, combined potential for cumulative increases in water borne pollutants (mainly sediment) and disturbance to fisheries habitats at several locations near Ballybofey (Section 1 of Proposed Development), with the River Finn SAC being the ultimate receiving water. Sensitive spawning and nursery habitats may be indirectly affected if instream works for the Donegal TEN-T PRIPD and the FRS occurred on the same watercourse in the same season. Potential cumulative effects would be related to temporary</p>	<p>construction of Proposed Development.</p> <p>However, no potential in-combination adverse effect on integrity during operation of Proposed Development.</p>	Development and this Project

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		disturbance of localised fish migration, and habitat degradation owing primarily to cumulative increases in suspended solids associated with excavations, and in-channel works. Potentially significant cumulative negative effects on aquatic ecological receptors cannot therefore be ruled out in relation to Section 1 of the Donegal TEN-T PRIPD and the Ballybofey / Stranorlar FRS combined, depending on the final design of the latter (currently unknown) and in the absence of further mitigation (refer to <b>Section 7.1.4</b> , below, for mitigation).		
<sup>50</sup> Castlefinn Flood Relief Scheme (FRS) Stage II: Planning Process	Sections 1 and 3: FRS is located 11.3 km downstream of Section 1 and 9.8 km upstream of Section 3 (at nearest).	<p>Moderately distant hydrological connectivity exists to Section 1 and 3 of Donegal TEN-T PRIPD: The FRS is located 11.3 km downstream of Section 1 and 9.8 km upstream of Section 3 (at nearest). Possible 2027 to late 2028 construction commencement. The FRS proposes short sections of hard defences on smaller tributaries of the River Finn in Castlefinn. The FRS would require several culverts and non-return valves through the proposed flood defences on the tributaries. There are no works indicated on River Finn main channel; hence no direct impacts or effects are possible. The River Finn at the confluence of the small tributaries is a meandering lowland river, comprising uniform, depositing, generally glide habitat, with limited, if any salmonid spawning habitat. The Finn at this point in the catchment is primarily a migration route for anadromous and catadromous fish (salmonids, river/sea lamprey, eel).</p> <p>The indicated instream works on the small tributaries have a very minor footprint in relation to overall catchment size and the hydrological links to Proposed Development works are distant - in Section 1 (11.3 km upstream) and Section 3 (9.8 km downstream) via River Finn.</p> <p>As for Donegal TEN-T PRIPD (refer to <b>Section 4</b> of this NIS), mitigation for any instream works, e.g., hard defences or culvert upgrades, will be the responsibility of the individual FRS project</p>	<b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b>	<b>No</b>

<sup>50</sup> <https://countydonegalfrs.ie/castlefinnfrs/> (Accessed December 2025)

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952, and the FRS project will be subject to its own Appropriate Assessment reporting.</p> <p>Any cumulative impact and effect would be indirect only, related to potential wash out of construction phase pollutants if there was a concurrent construction phase. However, given the location of the Castlefinn FRS in relation to the Proposed Development; the size of the catchment and dilution capacity of the River Finn, the nature of the River Finn aquatic habitat and the modest scale of works indicated (with no direct impact on the main channel), it is considered that indirect cumulative effects on the River Finn and the habitats and species it supports will be imperceptible at the scale involved and not significant.</p>		
<p><sup>51</sup>Raphoe Flood Relief Scheme (FRS) Stage II: Pre - Public Exhibition / Confirmation</p>	<p>Section 3: Located 2.8 km upstream of the proposed Swilly Burn River Bridge.</p>	<p>Nearby hydrological connectivity exists to Section 3: The FRS is located on the Swilly Burn at Raphoe, 2.8 km upstream of the crossing of the Swilly Burn River in Section 3 (the proposed Section 3 bridge is a further 7 km upstream of the River Finn / River Foyle and Tributaries SAC). The FRS has a possible 2026 construction commencement, although there is no published information (as of December 2025) for the Public Exhibition Stage, so it is unknown when the construction may commence. The FRS involves: (i) Primary measures: Diversion of surface water flow originating from the hills to the north and west of Raphoe by creation of new open channel with earthen embankments. Diverted flow will be directed to existing river channels to the south-west and south-east of the town to join the Swilly Burn, (ii) Secondary Measures: Hard defences, upstream storage, diversion of flow and overland floodway and associated drainage network improvements. None of the proposed measures occur on the main channel of the Swilly Burn itself. The FRS is set in separate water sub-catchments (Swilly Burn 010 and 020)</p>	<p><b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b></p>	<p><b>No</b></p>

<sup>51</sup> <http://raphoefrs.ie/> (Accessed December 2025)

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>to the Donegal TEN-T PRIPD (Swilly Burn_030) and there is no direct physical or hydrological overlap between the two projects. The only potential cumulative effects are indirect, related to potential cumulative construction phase wash-out (primarily of suspended solids) entering the Swilly Burn main channel from both projects, assuming concurrent construction phases (which is not a given). In that case the receiving water is the tidal, lower Swilly Burn 6.5 km upstream of the tidal River Foyle. The Swilly Burn at and downstream of the Section 3 bridge is tidal and highly modified by drainage and embankments. It forms a silted, generally depositing glide which has no salmonid spawning or nursery habitat but is a holding /migration route for anadromous and catadromous fish (salmonids, eel and potentially river/sea lamprey). Water quality is impaired which currently limits fisheries potential (partly linked to Raphoe wastewater treatment discharge). Loughs Agency electrofishing data (2020-2024) recorded trout but no salmon in the Swilly Burn (refer to <b>Appendix 8: Loughs Agency Fisheries Data 2020 - 2024</b>).</p> <p>From the limited information available, the proposed new open channels / embankments for Raphoe FRS mainly involve out of channel works. It can reasonably be assumed such works that occur near the channels can be constructed using best practice water quality protection measures specific to that project. As for Donegal TEN-T PRIPD (refer to <b>Section 4</b> of this NIS), mitigation for any instream works that are involved will be the responsibility of the individual FRS project, including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952, and the FRS project will be subject to its own Appropriate Assessment reporting.</p> <p>Given the tidal nature of the river downstream of the proposed Section 3 Swilly Burn bridge; the dilution capacity of the Swilly Burn (and downstream River Foyle), and with the implementation of water quality protection measures for both projects, there are no cumulative significant negative effects on aquatic biota predicted because sensitive spawning/ nursery habitats are not present in the cumulative ZOI, and any migrating fish are highly</p>		

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
<sup>52</sup> Lifford Flood Relief Scheme Stage I: Scheme Development and Preliminary Design	Section 3: Located 1.5 km downstream of the proposed N14/N15 to A5 Link Bridge of Section 3.	<p>mobile, adaptable and respond behaviourally to turbidity through avoidance.</p> <p>Nearby hydrological connectivity exists to Section 3. The Lifford FRS is in Stage I of planning; potential 2028 – 2030 construction period. The proposal involves hard defences (flood walls and embankments) along the left bank of the tidally influenced rivers Finn and Foyle and the right bank of the River Deelee, with tie-ins to existing embankments. Two local roads in the Roughan area will be raised. The tidally influenced channel forms the border between ROI and NI and the river is under designation as River Finn SAC (ROI) and River Foyle and Tributaries SAC (NI). It is a holding and migration route for the qualifying interest / feature species, salmon, in both (contiguous) SACs.</p> <p>The Constraints Study was prepared in 2021 (<sup>53</sup>RH, 2021) providing the most recently available information, which states <i>"As a general rule hard defences are kept as far back from the river channel or coastline as possible allowing the floodplain function to remain active. Where this is not possible, due to flood risk receptors being located within the floodplain, hard defences are placed around the property boundary to afford it protection. Where space allows, flood embankments are used but where space is restricted flood walls are utilised."</i> This suggests FRS instream works may not be involved and set-back construction areas could be managed within the riparian buffer zone.</p> <p>Conservatively, there is potential for cumulative water quality deterioration on the lower River Finn/Foyle if the Lifford FRS and Section 3 construction phases coincided, but the effect is unlikely to be significant because there are no sensitive spawning or nursery habitats in the cumulative ZOI. The River Foyle is expressly only included in the River Foyle and Tributaries SAC</p>	<b>No in-combination adverse effect on integrity either during construction or operation Proposed Development.</b>	<b>No</b>

<sup>52</sup> <https://liffordfrs.ie/> (Accessed December 2025)

<sup>53</sup> RH (2021) Lifford Flood Relief Scheme, Co. Donegal Environmental Constraints Study Report. Ryan Hanley Consulting Engineers.

Project (including Consent status)	Relationship and Potential Connectivity of Project to the Proposed Development	Description of Potential In-combination Effects of Project on the Proposed Development	In-combination Adverse Effects?	Mitigation Necessary to address In-combination Adverse Effects?
		<p>(NI) downstream of the Mourne River confluence to provide a linkage to the sea (<sup>54</sup>NIEA, 2024). The important salmon and <i>Ranunculus</i> habitats are located within upstream spawning/nursery tributaries of the Mourne and its tributaries and sub-tributaries of the Strule and Derg, within Northern Ireland.</p> <p>As for Donegal TEN-T PRIPD (refer to <b>Section 9B.3</b> of EIAR Chapter 9B Biodiversity – Aquatic), mitigation for any in-stream works, e.g., hard defences or culvert upgrades, will be the responsibility of the individual FRS project including project specific and typical water quality protection requirements as required by the Loughs Agency under the Foyle Fisheries Acts 1952, and the FRS project will be subject to its own Appropriate Assessment reporting.</p> <p>Considering the tidal nature and large dilution capacity of the River Foyle downstream of Lifford (including downstream of Deelee confluence) and with the implementation of water quality protection measures for both projects, it is considered the effect of, for example, slightly cumulatively elevated suspended solids (if they did occur, which is not a given), is not likely to have significant negative effects because sensitive spawning/ nursery habitats are not present in the cumulative ZOI, and any migrating fish present are highly mobile (e.g., adult salmon, out-going smolts), adaptable and would tend to respond behaviourally to turbidity through avoidance.</p>		

<sup>54</sup> NIEA (2024) River Foyle and Tributaries SAC Conservation Objectives V4. Northern Ireland Environment Agency.

## 6.7.4 In-combination Conclusion

Given the policies and objectives set out within the plans outlined above no plans are predicted to have adverse effects on the integrity of any European sites, either alone or in-combination.

Adherence to the overarching policies and objectives of the National Plans and the County Donegal Development Plan 2024 - 2030 and any future development plans ensure that the majority of the projects identified are also not predicted to have adverse effects on the integrity of any European sites, either alone or in-combination.

However, two projects, the Ballybofey and Stranorlar FRS and the Barnesmore Gap Greenway, were identified, in the absence of mitigation for potential cumulative effects and when applying the precautionary principle, to have potential to cause in-combination adverse effects on the integrity of the River Finn SAC relating to (i) water quality degradation, primarily sediment, hydrocarbon and concrete losses, and associated effects on aquatic biota; and (ii) temporary fisheries habitat disturbance during construction. Therefore, **mitigation is necessary** to avoid these adverse effects and ensure no adverse effects on the integrity of the SAC from the Proposed Development.

## 7 MITIGATION

The term “mitigation measures” are considered to be “*measures that aim to minimise, or even cancel, the negative impacts likely to arise when a plan or project is implemented so that the site’s integrity is not adversely affected. These measures are considered in the context of Article 6(3) and are an integral part of the specifications of a plan or project or conditional to its authorisation*” (EC, 2021). A number of mitigation measures are required to mitigate the potential adverse effects of the Proposed Development during pre-construction, construction and operation phases.

The following mitigation measures address potential adverse effects identified through the assessment completed in Section 0 . They have been developed with reference to the Project Description set out in Appendix 1- Project Description, the works programme (set out in Appendix 1: Project Description Section 4.9) and the construction phases (set out in Appendix 1: Project Description Section 4.10 – 4.13). Unless otherwise stated, the mitigation measures detailed below apply to all sections of the Proposed Development.

The mitigation measures set out below (Sections 7.1.2, 7.1.3, and 7.1.4) with respect to **habitats, species** and **aquatic environment** with respect to the following are also measures which will avoid, minimise and mitigate actual or potential **construction phase** adverse effects on the SACs and SPAs:

- Unintended Incursion
- Dust Management Plan
- Noise and Vibration Measures
- Invasive Species Measures
- Otter Measures
- Mammal Fencing
- Aquatic Measures – Pollution (suspended solids, hydrocarbons and concrete)
- Environmental Incidents and Accidents Measures
- Overwintering waterbirds

The mitigation measures set out below with respect to **habitats, species** and **aquatic environment** with respect to the following are also measures which will avoid, minimise and mitigate actual or potential **operational phase** adverse effects on the SACs and SPAs:

- Surface Water Drainage Design
- Environmental Incidents and Accidents
- Attenuation Ponds and Wetlands
- Drainage Maintenance Measures
- Maintenance of Mammal Fencing

All mitigations will be incorporated into the Environmental Operating Plan (EOP) for the Proposed Development.

At the time of writing, the following guidance applies to all construction works in and near watercourses:

- Loughs Agency (2016) Guidelines for Fisheries Protection during Development Works (Foyle and Carlingford areas). Environmental Guidelines Series No. 1

- IFI (2016) *Guidelines on protection of fisheries during construction works in and adjacent to waters*.
- NRA 'Guidelines for the crossing of Watercourses During Construction of National Road Schemes' (2008).
- Murnane et al. (2006) [CIRIA C648] *Control of water pollution from linear construction proposed developments*. Technical guidance.

The final EOP will be prepared with reference to the above guidance and any relevant updated guidance available at the time of its preparation.

### 7.1.1 Overarching Mitigation Measures

The Applicant will ensure the implementation of the mitigation, monitoring and other environmental commitments set out in this NIS (as mirrored within the EIAR for the Proposed Development) after any approval as may be granted by the Commission for the Project. The Applicant will employ a suitably qualified and experienced Project Ecologist who will form part of the Employer's Site Representative Team and who will oversee the implementation of the mitigation and monitoring measures for the Proposed Development. The Project Ecologist will be appointed prior to the commencement of any construction or enabling works; including any post-consent, pre-construction site investigations.

The Applicant will ensure that the contract(s) for the construction of the Proposed Development have a requirement that the Contractor(s) appoints a suitably qualified and competent Environmental Clerk of Works (ECoW). The ECoW will be appointed prior to the commencement of any construction or enabling works, including any post-consent, pre-construction site investigations. The ECoW will be responsible for and oversee the Contractor's environmental management of the construction works. The ECoW will, as necessary, liaise with the relevant environmental stakeholders, e.g. NPWS, IFI, Loughs Agency, and keep the Project Ecologist informed of all liaisons, decisions and agreements.

The Applicant will ensure that the Contract(s) for the construction of the Proposed Development allow for the regular checking of mitigation measures, monitoring and other environmental commitments, the cessation of construction works at any locations where these are not operating as planned, and the undertaking of corrective actions. In addition, the Contract(s) will include provision for the Project Ecologist to review and accept any corrective actions proposed by the Contractor(s) and/or their ECoW prior to their implementation (unless deemed urgent and necessary for the immediate protection of the environment), and monitoring of the efficacy of those corrective actions to ensure the aims and objectives of the environmental protection measures are achieved.

Post-construction, the Applicant will be responsible for the operational maintenance, monitoring and mitigation measures for the lifetime of the Proposed Development.

In addition to the fencing of the CPO boundary as part of the enabling works, any other vegetation within the CPO boundary which is capable of being retained during the construction works will be fenced-off with suitable protective fencing and location to be specified by the ECoW. The fencing will form a clear barrier between retained habitats within and adjacent to the CPO boundary which includes European Sites. This includes the retention of trees, hedgerow, woodland, aquatic features etc. The same measures as stipulated below with respect to avoiding unintended incursion will also be applied to these areas.

To avoid unintended incursion by personnel, equipment and materials, the construction site boundary will be fenced off and site access/egress points constructed. Only site access/egress points will be used by personnel and equipment. Signage will be placed at intervals along the fencing stating, "no access or storage of materials beyond this point" (or similar). The signage to face inwards into the construction site and clearly visible for all construction personnel. As part of the on-site ECoW induction for construction personnel, it will be stated that there will be no access to personnel or equipment and no storage of construction materials beyond the fenced construction boundary.

In addition to the overarching measures set out above, specific habitat, species and aquatic environment measures are detailed below.

## 7.1.2 Habitats

### 7.1.2.1 Construction Phase

#### 7.1.2.1.1 Mitigation Measures to Avoid/Minimise Air Quality Impacts (including Dust)

Measures to be implemented on the Proposed Development to avoid, prevent or reduce and, if possible, offset potential adverse effects from Dust are as follows:

- Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only.
- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential).
- All vehicles exiting the site shall make use of a wheel wash facility prior to entering onto public roads, to ensure mud, dust and other materials are not tracked onto public roads.
- Wheel washes, in so far as is practicable, shall be self-contained systems that do not require discharge of the wastewater to waterbodies.
- Public roads outside the site shall be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind.
- Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road.
- All vehicles must be suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum.

With the implementation of the above measures and monitoring during construction, it is expected that the levels of dust generated will be minimal and will result in adverse effects.

#### 7.1.2.1.2 Mitigation Measures for Noise and Vibration during Construction Activities

The extent of the blasting operations and the mitigation measures to be undertaken in relation to noise and vibration impacts in so far as same have the potential to impact any of the European Sites referred to herein are as follows:

- Contractors likely to generate significant levels of noise and vibration will employ the Best Practicable Means to minimise noise and vibration emissions and will be obliged to comply with the general recommendations of BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise* and BS 5228-2:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration* (together referred to as BS 5228). “Best Practicable Means” include:
  - Limiting the hours during which site activities likely to create high levels of vibration are permitted. Any work outside normal working hours shall only take place with the written permission of the local authority.
  - Establishing channels of communication between the Contractor/developer, Local Authority and residents.

- A noise and vibration monitoring programme will be implemented for the duration of the construction phase.
- As part of the implementation of mitigation, the EOP will include the following measures:
  - Channels of communication between the Contractor/developer, the Local Authority and residents will be established.
  - Records of any noise complaints relating to the construction operations will be and investigated as soon as possible and reported to the Local Authority’.
  - Plant such as pumps and generators used on or near sensitive locations will be contained within an acoustic enclosure and comply with the recommended noise levels.
  - Plant and machinery used on-site will comply with the European Commission (Construction Plant and Equipment) Permissible, Noise Levels Regulations, 1988 (S.I. No. 320 of 1988).
  - All noise producing equipment will comply with the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations 2001 (S.I. No 632 of 2001).
- Blasting will only be permitted between 09:00 and 18:00 hrs Monday to Friday inclusive. Blasting will not be permitted on weekends or public holidays.

#### 7.1.2.1.3 Mitigation Measures for Invasive Alien Species

Transfer of invasive alien plant species (IAPS) between sites within catchments and to other catchments will be prevented as per the IAPS Management Strategy set out in Appendix 13. IAPS Management Plan. The plan was prepared for the Proposed Development in line with TII Guidance (GE-ENV-01105, 2020) and the TII Standard (GE-ENV-01104, 2020) in relation to Management of Invasive Alien Plant Species on National Roads.

The risk of accidental transfer of the non-native invasive species will be avoided by adherence to current best practice protocol for avoiding the spread or transfer of invasive animals. These measures will be enforced during construction to ensure accidental spread does not occur on machinery or materials from / to the site. The developers will also adopt any modified or updated approaches to invasive alien species control ([www.invasives.ie](http://www.invasives.ie)). Any personnel that enter water as part of instream works on tributaries of the Swilly Burn will adhere to biosecurity protocols as set out in the Invasive Species Ireland Water Users Code of Practice (a joint development by NPWS and NIEA) which can be found online at: <https://invasives.ie/biosecurity/> (Accessed October 2025).

Asian clam (*C. fluminea*) has been recorded at the downstream end of the Swilly Burn near the proposed bridge (Site W3-14). There are no instream works at this or any other major river crossings in the Foyle catchment (rivers Deelee, Swilly Burn, Finn) but instream works are required on smaller tributaries of the Foyle catchment main channels. To avoid transference of clams or their waterborne juvenile stages, construction personnel are strictly forbidden to enter the water at the major bridge crossing locations. If accidental contact with water occurs in the rivers of Section 3: Swilly Burn, Deelee or Finn and/or Section 2: Swilly Estuary or Isle Burn (Lesliehill) - before moving to other areas within the catchment or any outside river, lake or estuary catchment the following biosecurity protocol shall be carried out:

- **Check** – Remove any visible matter, including any clams you can see, along with plant material or mud. Empty boots or drain all river water from containers.
- **Clean** – Washdown all clothing, equipment and any other gear that was in contact with river water using tap-water onto grass (or a dedicated washdown area within the site compound), at least 50 m away from any watercourse and not into a stormwater drain system.
- For any absorbent surfaces of equipment and/or materials that accidentally come into contact with river water use a suitable disinfection method for the item: (1) Hot water - Soak in hot tapwater (55°C) for at least 5 minutes; (2) Diluted bleach - Soak in household bleach in a 10% (1 in 10) ratio with water for 1

hour; (3) Virkon® Aquatic – use a spray bottle of solution according to manufacturer’s instructions to douse the equipment; (4) Freezing – overnight until solid.

- **Dry** – Allow gear to dry to touch, inside and out, then leave it to dry for at least 48 hours (2 days) before using again.

To avoid potential transfer of aquatic alien species or pathogens, there shall be no abstraction from any natural watercourse as part of construction activities. Any construction related water requirements will be served by tanker sourced from a municipal treatment supply.

### 7.1.2.2 Operational Phase

The measures set out below with respect to the **aquatic environment** are those that will avoid, minimise and mitigate the identified operational phase adverse effects on QI habitats:

- Aquatic Measures – Pollution (suspended sediments, hydrocarbons and concrete).
- Environmental Incidents and Accidents Measures.

## 7.1.3 Species

### 7.1.3.1 Construction Phase

#### 7.1.3.1.1 Pre-Construction Surveys

Prior to the commencement of construction works, the scope, programme and phasing of pre-construction habitat and species surveys will be defined by the ECoW in consultation with the Client and Contractor(s). Given the duration of the construction works, the update habitat and species surveys will need to be appropriately phased mindful of the planned work and seasonal constraints. This is to ensure that an up-to-date baseline is maintained to inform decision making prior to and during the construction phase of the Proposed development; including with respect to the need for derogation licensing. (Based on the current baseline conditions, no need species derogations relevant to QI species have been identified as necessary). Some of these surveys will be completed as part of Enabling Works set out in the Project Description. Others will be completed as the phases of construction are progressed along the route.

As relevant to address the potential adverse effects identified within this NIS, pre-construction surveys will be required with respect to the following:

- **Otter:** In addition to those surveys undertaken to date the following post-consent, pre-construction otter surveys will be completed and maintained up-to-date, thereafter, by the ECoW during the construction phase of the Proposed Development:
  - The sections of the River Finn and River Swilly which will be traverse by the new bridges and which will lie adjacent to the CPO boundary will be surveyed for otter holts or resting places (plus any other signs of otter activity) 200 m up and down stream of these locations. Measured from the outer edge of the construction footprint.
  - The sections of any other watercourse within the construction footprint or within 200 m of the construction footprint will be surveyed for otter holts or resting places (plus any other signs of otter activity).
  - The otter surveys will be completed with reference to Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes (NRA, 2006).
- **IAS:** To inform the IAS management and eradication works, an update IAS surveys will be completed.

Based on the findings of the pre-construction surveys, the adequacy of the mitigation for each of these species set out in the EIAR will be reviewed and, if necessary, added to accordingly by the ECoW. The pre-construction surveys will also inform the need or otherwise for derogation licensing (as detailed below). Any

adjustment to the mitigation measures will be agreed with the derogation licensing Authority in advance of them being implemented.

The pre-construction surveys will be supplemented by further inspection by the ECoW (as deemed necessary by them) immediately prior to site clearance.

#### **7.1.3.1.2 Derogation Licensing**

Based on the current baseline conditions, no species derogations relevant to QI species have been identified as necessary. However, mindful of the mobile nature of otter (the only relevant QI species for the Proposed Development), the need for derogation licensing for any particular phase of works will need to be kept under review and informed by the findings of the post-consent, pre-construction surveys. The level of surveying will need to be sufficient to inform any derogation licensing which may be required. The need for derogation licensing will be determined by the ECoW. The acquisition of derogation licences may be completed, in part, during the Enabling Works set out in the Project Description. The need for derogation licences will be kept under review by the ECoW as the construction works progress based on the findings of the pre-construction surveys completed.

#### **7.1.3.1.3 Monitoring during Site Clearance**

All vegetation removal will be monitored by an ECoW to ensure there is no disturbance protected species. If disturbance occurs, the ECoW will treat each species appropriately, e.g. contact NPWS for otter.

Where dense vegetation or inaccessibility prevents adequate determination of the presence or absence of otter holts as part of the pre-construction surveys, these areas will require monitoring during vegetation clearance to ensure that any holts present will be found and treated appropriately.

#### **7.1.3.1.4 Mitigation Measures for Otter**

Pre-construction surveys for otter are addressed above.

Although not required at present from the findings of the surveys undertaken to date, if pre-construction surveys highlight the presence of an active holt within 150m of proposed works the following will be applied. No construction personnel or machinery will be used within 150 m of otter holts unless subject to the provisions of a derogation licence. The location of otter holts to be determined during the pre-construction survey. During the pre-construction survey, otter holts located within the CPO boundary or within 150 m of this boundary will be clearly identified to all personnel working in the vicinity of the holt. Temporary boundary tape fencing (or similar) can be used at the discretion of the ECoW to identify such holts subject to such measures themselves not impacting on the use of the holt. Neither blasting nor pile-driving will be undertaken within 150 m of active holt during the breeding season, unless subject to provisions of a derogation licence.

In the event that holts are to be closed (wholly or partially), this will be completed in accordance with the necessary derogation licence and with reference to the Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes (NRA, 2006). The need for licence to be determined by the ECoW. The need for additional mitigation for derogation licensing purposes to be reviewed and determined by the ECoW and relayed, as necessary to the local authority. It is assumed that all active holts at the time of construction and within the CPO boundary will need to be closed in accordance with a derogation licence. Currently, no active holts are located within the CPO boundary and no derogation licence necessary. Where required, evacuation and destruction of holts will be carried out under the supervision of an appropriately qualified ecologist under derogation licence from the NPWS. In the event that derogation licence(s) will be required, these could require the loss of holt(s) to be compensated through the construction of artificial holt(s). The locations of such holts will be determined by the ECoW in liaison with the Contractor and the requirement of any derogation licence. The above provisions regarding otter fencing will apply to such artificial setts.

The design of the Proposed Development includes the following "built in" features which will aid connectivity of otters across the Proposed Development:

- Open-span bridge design over the River Finn, Cloghroe and Backlees (Section 1), River Swilly (Section 2) and over the River Deele, Swilly Burn and River Finn (A5 Link) (Section 3).

Box and pipe culverts. With respect to the box culverts, these will include mammal ledges where possible and, if not possible, associated dry passes. Dry-passes will be included for pipe culverts. The dry passes are included purely to facilitate mammal passage. The location and type of mammal underpass type is summarised below in Table 7.1, Table 7.2 and Table 7.3.

Otter fencing, to the specification set out in Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes (NRA, 2006), will be provided 50 m either side of each bridge or culvert and on both sides of the carriageway. The fencing to be tied into the bridge abutment or culvert/dry-pass headwall as necessary. Where gates are necessary within sections covered by such fencing, they will require concrete sills and mammal resistant mesh attached to the gate to exclude mammals from accessing the Proposed Development.

Any excavations greater in depth than 30 cm which are left open overnight will either be temporarily covered over or a temporary ramp suitable for use by otters (e.g. scaffold board at suitable angle) inserted. This to prevent the entrapment of otter within the excavations and/or to enable their escape from the excavation.

### 7.1.3.2 Operational Phase

#### 7.1.3.2.1 Management and Maintenance Measures

The “built in” features to allow the continued movement of otter across the road corridor will be subject to annual inspection to ensure their continued functionality for the movement of these species. The inspections will identify any maintenance required to maintain their functionality and any remedial actions necessary to maintain such functionality. The built-in features include the open-span bridges, box and pipe culverts and otter fencing.

Any additional measures identified as required in light of the findings of pre-construction surveys and delivered as part of derogation licences will be inspected annually to ensure their continued functionality for the purposes of which they were provided. The inspections will identify any maintenance required to maintain their functionality and any remedial actions necessary to maintain such functionality.

The management of any vegetation in retained land during the operational phase of the Proposed Development will be completed with cognisance to biodiversity, including otter.

#### 7.1.3.2.2 Artificial Lighting

Public lighting for the Proposed Development’s operational phase is discussed in the Project Description (see Appendix 1: Project Description) and shown in Appendix 2 NIS Drawings: Drawings 30–32 Operational Lighting. It is to be provided at roundabouts and mainline junctions, the design following best practice in relation to environmental considerations, including ecology. No artificial lighting is proposed over the major river and stream crossings. In relation to lighting design for ecology, the detailed design will adhere to the prescriptions set out within the Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes and the Guidelines for the Treatment of Bats during the Construction of National Road Schemes (NRA, 2006b), Bat Conservation Trust & Institution of Lighting Professionals (2018) *Guidance Note 08/18, Bats and artificial lighting in the UK*. Bats and the Built Environment series and Bat Mitigation Guidelines for Ireland (NPWS, 2022). Adopting this guidance would also be applicable with mitigating effects on otter also.

**Table 7.1: Locations of Mammal Mitigation Measures for Section 1**

Mitigation Ref.	Culvert Name	Location/Road Name	Chainage	Culvert Type	Mitigation Type	Species
MUP.S1.01	S1-CUL.01	L-6564 Connector Road	1+300	Box	Ledge	Otter
MUP.S1.02	S1-CUL.06	L-6564 Connector Road	0+105	Pipe	Drypass	Badger
MUP.S1.03	S1-CUL.07	L-6564 Connector Road (Farm Access)	0+270	Pipe	Drypass	Otter, badger
MUP.S1.04	S1-CUL.08	L-6564 Connector Road	0+355	Box	Ledge	Otter, badger
MUP.S1.05	S1-CUL.09	Mainline Section 1	0+220	Pipe	Drypass	Otter, badger
MUP.S1.06	S1-CUL.10	LX-1002 Link	0+208	Box	Ledge	Otter, badger
MUP.S1.07	S1-CUL.11	LX-1002 Link (Farm Access)	0+200	Box	Ledge	Otter, badger
MUP.S1.08	River Finn Bridge	Mainline Section 1	2+400	Bridge	Natural bank	Otter, badger
MUP.S1.09	S1-CUL.12	L-2754 Realignment (Farm Access)	0+060	Box	Ledge	Otter
MUP.S1.10	S1-CUL.13	L-2754 Realignment	0+155	Box	Ledge	Otter
MUP.S1.11	N15P032	Mainline Section 1	3+200	Pedestrian / Wildlife Underpass	Underpass	Badger
MUP.S1.12	S1-CUL.14	L-2734 Tie-in (Domestic Access)	0+335	Box	Ledge	Otter
MUP.S1.13	None	L-2784 CONNECTOR	0+170	None	Drypass	Badger
MUP.S1.14	River Backlees Bridge	River Backlees Bridge	4+125	Bridge	Natural bank	Otter
MUP.S1.15	S1-CUL.19	Existing N13	0+680	Box	Ledge	Otter, badger
MUP.S1.16	S1-CUL.20	Existing N13 (Farm Access)	0+470	Box	Ledge	Otter, badger
MUP.S1.17	S1-CUL.21	LX-1007-1 Northern Link Road	1+610	Box	Ledge	Otter, badger
MUP.S1.18	S1-CUL.22	LX-1007-1 Northern Link Road	1+765	Box	Ledge	Otter, badger
MUP.S1.19	S1-CUL.25	L-2714 Realignment (Farm Access)	0+375	Box	Ledge	Otter, badger
MUP.S1.20	S1-CUL.28	N15 Tie-in East	0+155	Twin Box	Ledge	Otter, badger
MUP.S1.21 MUP.S1.21	None	L-7084 Connector	1+300	None	Drypass	Badger
MUP.S1.22	S1-CUL.29	Mainline Section 1	7+920	Pipe	Drypass	Badger
MUP.S1.23	S1-CUL.30	L-6674 Realignment	0+505	Box	Ledge	Otter, badger
MUP.S1.24	S1-CUL.31	LX-1011 Connector Road	0+025	Box	Ledge	Otter
MUP.S1.25	S1-CUL.33	L-6674 Realignment	0+615	Box	Ledge	Otter, badger
MUP.S1.26	S1-CUL.34	L-6674 Realignment	0+310	Box	Ledge	Otter
MUP.S1.27	S1-CUL.35	Existing N13 (Cycleway)	N/A	Box	Ledge	Otter
MUP.S1.28	S1-CUL.36	Mainline Section 1	8+500	Box	Ledge	Otter
MUP.S1.29	N/A	River Cloghroe Bridge	0+300	Bridge	Natural bank	Otter, badger

**Table 7.2: Locations of Mammal Mitigation Measures for Section 2**

Mitigation Ref.	Culvert Name	Location/Road Name	Chainage	Culvert Type	Mitigation Type	Species
MUP.S2.01	S2-CUL.07	L-1094 Connector Road	0+235	Pipe	Drypass	Otter
MUP.S2.02	S2-CUL.08	L-1094 Link	0+129	Pipe	Drypass	Otter
MUP.S2.03	S2-CUL.09	LX-2004	0+024	Pipe	Drypass	Otter
MUP.S2.04	S2-CUL.12	L-5784 Realignment	0+400	Pipe	Drypass	Otter
MUP.S2.05	S2-CUL.13	Mainline Section 2.1	1+411	Pipe	Drypass	Otter
MUP.S2.06	S2-CUL.14	Mainline Section 2.1	1+680	Pipe	Drypass	Otter
MUP.S2.07	S2-CUL.15	Mainline Section 2.1 (Farm Access)	1+687	Pipe	Drypass	Otter
MUP.S2.08	S2-CUL.16	L-1114 Realignment	0+130	Box	Ledge	Otter
MUP.S2.09	S2-CUL.16A	Existing N13	0+625	Box	Ledge	Otter
MUP.S2.10	S2-CUL.17	Farm Access (at NX-2000 Link, CH1+830)	n/a	Box	Ledge	Otter
MUP.S2.11	S2-CUL.18	NX-2000 Link	1+630	Box	Ledge	Otter
MUP.S2.12	S2-CUL.19	LX-2011 Connector Road	0+550	Box	Ledge	Otter
MUP.S2.13	S2-CUL.20	LX-2010 Link	0+150	Box	Ledge	Otter
MUP.S2.14	S2-CUL.21	LX-2008 Bonagee Link	0+200	Box	Ledge	Otter
MUP.S2.15	S2-CUL.22	LX-2011 Connector Road	0+238	Box	Ledge	Otter
MUP.S2.16	S2-CUL.23	River Swilly Link	1+218	Box	Ledge	Otter
MUP.S2.17	S2-CUL.24	River Swilly Link	0+942	Box	Ledge	Otter
MUP.S2.18	S2-CUL.25	River Swilly Link	0+750	Box	Ledge	Otter
MUP.S2.19	N/A	Swilly Estuary Bridge	0+500	Bridge	Natural bank	Otter, badger
MUP.S2.20	S2-CUL.26	LX-2010 Tie-in	0+056	Box	Ledge	Otter
MUP.S2.21	S2-CUL.27	LX-2010 Tie-in	0+325	Pipe	Drypass	Otter
MUP.S2.22	S2-CUL.29	L-1154 West Tie-in	0+151	Box	Ledge	Otter, badger
MUP.S2.23	S2-CUL.30	LX-2013 Link South	0+120	Box	Ledge	Otter, badger
MUP.S2.24	S2-CUL.31	Trimnagh Link	0+048	Box	Ledge	Otter, badger
MUP.S2.25	Existing culvert	Mainline Section 2.1	1+250	Unknown	N/A	Otter, badger
MUP.S2.26	S2-CUL.32	LX-5824 Tie-in	0+128	Box	Ledge	Otter, badger
MUP.S2.27	River Isle Burn Active Travel Bridge Location	Mainline Section 2.1	3+400	Bridge	Natural bank	Otter

**Table 7.3: Locations of Mammal Mitigation Measures for Section 3**

Location Chainage	Reference	Key Actions
0+700	MUP.S3.S01	<ul style="list-style-type: none"> <li>Mammal passage along stream and adjacent two access tracks.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
1+100	MUP.S3.S02	<ul style="list-style-type: none"> <li>Mammal passage along stream and adjacent two access tracks.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
1+780	MUP.S3.S03	<ul style="list-style-type: none"> <li>Mammals passage across mainline, side road and access track.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
2+020	MUP.S3.S04	<ul style="list-style-type: none"> <li>Mammal passage along stream.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
2+190	MUP.S3.S05	<ul style="list-style-type: none"> <li>Mammal passage across disused railway.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
2+400	MUP.S3.S06	<ul style="list-style-type: none"> <li>Mammal passage along stream crossing on N14 Link road.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
3+700	MUP.S3.S07	<ul style="list-style-type: none"> <li>Mammal passage across mainline and side road.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
4+100	MUP.S3.S08	<ul style="list-style-type: none"> <li>Mammal passage along drainage culvert.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
4+500	MUP.S3.S09	<ul style="list-style-type: none"> <li>Mammal passage along stream crossing on mainline and side road to accommodate deer.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
5+700	MUP.S3.S10	<ul style="list-style-type: none"> <li>Mammal passage along drainage culvert.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
6+560	MUP.S3.S11	<ul style="list-style-type: none"> <li>Mammal passage along stream crossing on mainline and N14.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
7+130	MUP.S3.S12	<ul style="list-style-type: none"> <li>Mammal passage across mainline.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
7+400	MUP.S3.S13	<ul style="list-style-type: none"> <li>Mammal passage along stream crossing.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
8+200	MUP.S3.S14	<ul style="list-style-type: none"> <li>Mammals passage across mainline, N14 and access track.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
8+900	MUP.S3.S15	<ul style="list-style-type: none"> <li>Mammal passage across mainline.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
9+240	MUP.S3.S16	<ul style="list-style-type: none"> <li>Mammal passage along stream crossing on mainline.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
10+050	MUP.S3.S17	<ul style="list-style-type: none"> <li>Mammals passage along stream crossing on mainline and N14.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
10+380	MUP.S3.S18	<ul style="list-style-type: none"> <li>Mammals passage along stream crossing on mainline.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
11+500	MUP.S3.S19	<ul style="list-style-type: none"> <li>Mammals passage along both banks of Swilly Burn on mainline.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
11+650	MUP.S3.S20	<ul style="list-style-type: none"> <li>Mammals passage along stream culvert.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
11+960	MUP.S3.S21	<ul style="list-style-type: none"> <li>Mammals passage along stream culvert.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>
12+800	MUP.S3.S22	<ul style="list-style-type: none"> <li>Mammals passage along drainage culvert.</li> <li>Associated landscape planting to tie in to existing vegetation.</li> </ul>

Location Chainage	Reference	Key Actions
13+880	MUP.S3.S23	<ul style="list-style-type: none"> <li>• Mammals passage across mainline and L-2444 link.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
L-2444 road	MUP.S3.S24	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert on L-2444.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
L-2444 road	MUP.S3.S25	<ul style="list-style-type: none"> <li>• Mammals passage along farm underpass on L-2444.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
14+400	MUP.S3.S26	<ul style="list-style-type: none"> <li>• Mammals passage along both banks of River Deelee.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
14+830	MUP.S3.S27	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
14+940	MUP.S3.S28	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
15+140	MUP.S3.S29	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
15+580	MUP.S3.S30	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
15+800	MUP.S3.S31	<ul style="list-style-type: none"> <li>• Mammals passage along drainage culvert.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>
16+630	MUP.S3.S32	<ul style="list-style-type: none"> <li>• Mammals passage along both banks of River Finn.</li> <li>• Associated landscape planting to tie in to existing vegetation.</li> </ul>

## 7.1.4 Aquatic Environment

### 7.1.4.1 Construction Phase

#### 7.1.4.1.1 Instream Works – Timing Restrictions and Permits (All Sections)

There are no instream works directly within SAC channels as part of the Proposed Development, however, in order to avoid adverse effects on integrity of SACs (as identified) in relation to indirect effects of culvert works on channels outside (though connected to SACs) the contractor shall ensure that instream works shall only be undertaken during the period 1 May to 30 September as required by both the Loughs Agency and IFI to avoid accidental damage or siltation of salmonid spawning beds.

- Timing restrictions and fish removal during temporary works are required at specified fish bearing watercourse crossings as set out on a site-specific basis in Appendix 11.
- Instream works in fish bearing watercourses of the Foyle catchment (Section 1 and southern Section 3) will be carried out in accordance with Section 47 and Section 70 permits from the Loughs Agency, as set out in Section 4, above. This applies to all culvert installations, preparatory works, temporary crossings and diversions.
- Typical conditions for Section 47 and 70 permits as provided by the Loughs Agency relate to the protection of water quality during instream works and have been included for in the sub-sections below, both as part of the design of the Proposed Development and the suite of mitigation measures required to protect aquatic habitat quality, which apply across the whole project whether the waters are under Loughs Agency or IFI jurisdiction.
- Final detailed design and construction method statements for instream works on fisheries channels will be submitted to the Loughs Agency (Section 1 and southern Section 3) as required during the Section 47 permit application process. This applies to all culvert installations, temporary crossings and diversions. Construction methods shall employ water management methods and mitigations, as set out in the sub-sections below.
- Final detailed design and construction method statements for instream works on fisheries channels within the remit of IFI (Section 2 and northern Section 3) will be submitted to IFI at detailed design stage, well in advance of works commencing. This applies to all culvert installations, temporary crossings and diversions.
- The ECoW will ensure notification is made to IFI and Loughs Agency the weeks prior to actual commencement of construction works on watercourses (or a time frame specified in any condition of an electrofishing permit/licence) so that the appropriate agency can, if they deem fit, schedule a staff member to be on-site to observe e.g., during temporary stream diversions or electrofishing.
- Fish passage conditions on fish bearing streams will be maintained at all times even during temporary diversions (see Appendix 11 for site-specific details on fish bearing streams).
- As per Loughs Agency requirements, instream works activities shall not, including in conjunction with any other activities by any other persons:
  - Raise the waterway downstream to a suspended solids level in excess of 10 milligrams per litre above the upstream level in the mixing zone;
  - Cause the waterway downstream to contain visible oil or grease;
  - Cause the waterway downstream to contain any substance (other than as defined above) which will cause the waterway or water in an underground stratum to be toxic or injurious to fish or other aquatic organisms.

- Instream works will be carried out in adherence to IFI Biosecurity Protocol for Field Survey Work (Caffrey, 2010), regarding 'check, clean, dry' and disinfection stations for cleaning boots and equipment to prevent transference of pathogens between watercourses and waterbodies.

#### 7.1.4.1.2 Construction of Culverts

During the construction phase the Contractor shall ensure that:

- Culvert installation is in accordance with detailed design that includes site-specific construction phase mitigations set out in Appendix 11 relating to timing restrictions (fish bearing waters) and general water quality protection measures.
- Culverts shall be constructed in accordance with detailed design that includes site-specific operation phase mitigations set out in Appendix 12 relating to culvert specification /mitigation to ensure fish passage (i.e., low flow channels, baffles) as specified for each culvert.
- All instream works will occur in the dry using appropriate water management techniques (see Water Management Measures, below).
- Where watercourses are to be permanently or temporarily diverted or culverted, dewatering will be required (excepting where channels are dry during spring/summer). Fish removal is required for the installation of culverts at locations specified in Appendix 11.
- This shall be undertaken by suitably qualified electrofishing specialists in accordance with appropriate permits from the Loughs Agency (as per Section 4 of this NIS in relation to Sections 1 and 3 within the Foyle catchment) or Section 14 Authorisation from IFI (Section 2, within Lough Swilly catchment), as appropriate. Section 14 Authorisation from the Department of Climate, Energy and the Environment (DCEE) under the Fisheries Consolidation Act 1959 (as amended) is a regular process whereby the electrofishing specialist obtains consent from IFI to electrofish and relocate fish (locally, upstream or downstream) to avoid impact on fish in relation to a specific reach where dewatering is proposed.
- Bank protection at the entrance and exit of culverts will be rock armour, placing boulders one third of their size below bed level, built to a height that matches the prevailing (upstream / downstream) bank top level and back filled to allow riparian vegetation regrowth and planting. The Contractor shall adhere to IFI (2016) guidelines (pages 10-11) with regard to bank protection works at crossings.
- Adequate fish resting places (pools or slower water) will be provided for in the detailed design above and/or below culverts, as required.
- As per TII (2008) and IFI (2016) Guidance, culverts will require detailed designs that incorporate internal baffles to aide fish passage dependent on slope/length (see Culvert Design Measures, below) and design mitigations in Appendix 12.

#### 7.1.4.1.3 Culvert Design Measures (to Ensure Fish Passage)

Table 7.4 presents guidance taken from TII (2008) and IFI (2016) on the crossing of watercourses with culverts. The parameters for slope have been used to guide the requirement for baffles on fish bearing streams in Sections 1, 2 and 3. There is discrepancy noted between TII (2008) and IFI (2016) guidance on culvert slope and baffle requirement. Given that IFI (2016) is the more recent document, the mitigation for culverts in this assessment has considered overall length of culvert, pre-existing channel form (e.g., step-pool, riffle-run) and made a judgment on where baffles will be required to facilitate fish passage. The judgement was backed up by the international literature, which broadly agrees that a slope of <1% (even for length >30m) would not present a significant barrier to salmonid movement and generally a slope of 1-2%, depending on length and outlet character generally would not require baffles to facilitate fish passage (BCME, 2001; USFS, 2005; Scottish Government, 2012). At a minimum, all culverts on fish sensitive watercourses will require a low flow channel. Internal baffles are required in prescribed locations, as set out in Appendix 12 (Operational Phase Effects - Culverts).

**Table 7.4: Guideline Summary - Fish Passage at Culverts**

	Culvert length (m)	Effective Slope of Culvert Should Not Exceed:
TII (2008) Guidance	<24 m	≤1.0%, unless baffles are added
	>24 m	≤0.5%, unless baffles are added
	Any length	5.0% at any time, even with baffles
	Any length	If steeper slope (>5.0%) is indicated - will require specific design to allow fish to swim upstream without undue effort, e.g., notched baffles, baffles plus low-flow channel
IFI (2016) Guidelines	Any length	3%, unless baffles are added

The following are the overarching measures for culverts, noting that site specific measures (where required) are detailed out in Appendix 12:

- Bridges or box culverts have been specified for all fish bearing channels on the scheme.
- Box culverts will be set at least 500 mm below the existing bed level and mimic the gradient of the pre-existing channel long section. The culvert invert at the upstream and downstream end shall be the full 500mm embedment to ensure there is no defined lip or apron at the entry or exit.
- All pipe culverts on the scheme are >1.2 m diameter and no pipe culverts are used on salmonid watercourses. Pipe culverts have a 300mm embed below natural bed level.
- Preliminary specifications (height, width, slope) for culverts > 60 m in length were given special consideration for fish passage on channels with fisheries significance, i.e., by increasing height to improve light penetration (e.g., S1-CUL.25) and ensuring effective slope is low. These details are set out on a site-specific basis in Appendix 12 Operation Phase Impact Assessment (Culverts).
- Additional works to minimise erosion will be undertaken, e.g., rock armour, downstream pools, baffles to protect bank and channel flows. All such works will ensure fish passage is not obstructed.
- During construction original bed material will be stockpiled (where salvageable) and reinstated or, where imported, will consist rounded washed gravels derived from local rock type which will be either seeded upstream of smaller culverts or placed within the larger culvert before they become live.
- Culverts will, at detailed design stage, incorporate a two-stage (low-flow) channel, including any additional site-specific requirements for each culvert as set out in Appendix 12. Rock armour training will be used to mimic the existing bed width at entry and exit to ensure fish passage in low flow. In no instance shall flows be allowed to disperse across the bottom of a flat box culvert.
- There shall be no screening of temporary or permanent culverts to prevent rubbish build up as this can cause obstruction to fish passage.

#### 7.1.4.1.4 Stream Diversion and Channel Realignment Measures

Existing natural watercourse flow paths are proposed to be altered to suitably align proposed culvert crossings with the road at numerous locations across the three sections. These diversion works have been designed such that there will be no changes in the existing hydrological or water body scale morphological regimes of the relevant watercourses. Layout plans of the stream diversion works are provided in Appendix 2 NIS Drawings: Drawings 33–35 Culvert and Stream Diversions. Mitigation as per IFI (2016) guidelines will be adhered to in the design and construction of permanent and/or temporary stream diversions. The following channel realignment measures apply at all temporary and permanent stream diversions including those associated with culvert approaches and exits:

- Stream diversions and realignments are primarily associated with culvert installation that involve instream works, hence all measures set out above relating to instream works and culvert construction apply. This includes instream works timing restrictions and provision of final detailed construction method statements for all realignments to be submitted to the Loughs Agency (Section 1 and southern Section 3) and to IFI (Section 2 and northern Section 2) as appropriate.
- Preliminary designs of the two more significant permanent stream diversions have been provided in Appendix 2 NIS Drawings: Drawing 33 Section 1 Culvert and Stream Diversions for Cloghroe River (Site W1-14) at the N13 Northern Tie-in) and in Appendix 2 NIS Drawings: Drawing 35 Section 3 Culvert and Stream Diversions for the Swilly Burn tributary (Tullyrap Stream) between Ch. 9+200 to Ch10+200 (EPA name Drumbeg, Sites W3-12 / W3-13). These diversions will be constructed in accordance with the designs provided, and in accordance with permits from the Loughs Agency as discussed in Section 4 above.
- The Tullyrap watercourse realignment (EPA name Drumbeg, W3-12) in Section 3 between Ch. 9+200 to Ch10+200 will be constructed offline, i.e., in dry conditions, incorporating all features as described in Stream Diversion and Channel Realignment Measures, above. The new channel will be sinuous with varied flow regimes, comprising morphological characteristics conducive to fisheries habitats (riffle, glides and pools) generated by varying the channel width, using natural materials (locally sourced gravel and stone) and the judicious use of boulders to form restrictions that vary flow-types. The preliminary design follows principles defined in *Channels and Challenges – The enhancement of Salmonid Rivers* (O’Grady, 2006) and in alignment with Loughs Agency (2016) *Guidelines for Fisheries Protection during Development Works*. The channel will be backfilled on completion with locally sourced cobble and gravel with appropriate landscaping and riparian planting along the banks. Sufficient land-take has been included to accommodate the proposed channel and associated planting.
- Newly formed channel base widths will be designed to match the width of the original channel.
- Newly formed channel sections shall mimic (or improve) the existing habitats. They will incorporate instream substrates and meanders that give rise to flow type variation (riffle, glide and pool sequences) as found in fish bearing waters.
- New channel sections shall be fully constructed in dry conditions (using appropriate Water Management Measures, see below), i.e., offline construction, temporary diversion, dam and pump over, piping.
- Where in-stream bed material is to be removed from a dewatered section during construction, coarse aggregates (cobbles, gravels) shall be stockpiled for replacement in the reformed or new channel. Additional coarse material shall match the existing gravel size and be of local rock type origin.
- Permanent stream diversions shall be completed as far in advance as possible, i.e., allowing for “bedding in” of substrates and not before a cover of bankside vegetation (low grass at the very least) has established prior to connection of flow.
- The abandoned stretches of old watercourses shall be electro-fished before dewatering by suitably qualified personnel in accordance with permits from the Loughs Agency or Section 14 Authorisation from the IFI, as appropriate.
- Newly constructed river and stream channels shall have banks battered to a finished angle of not greater than 45 degrees on one bank and not greater than 30 degrees on the opposite banks, (to allow for maintenance of a low flow channel, and overflow and a flood flow channel).
- Banks shall be top soiled and seeded to ensure the growth and development of a broad range of local grasses and shrubs thereby facilitating development of stable bank root structures.
- Broadleaves shall be planted along newly created channel to provide a mixture of dapple and shade conditions. Such riparian tree planting shall be in scattered groups (not linear) set back from the watercourse channel to avoid “tunnelled” growth that can reduce instream productivity.

- Allowance has been made for vegetated riparian strips and planting between new road infrastructure and the newly formed channel to create shade and cover for fish. Riparian planting will be of native species and will be in scattered clumps, not linear plantings, to avoid tunnelled vegetation around watercourses.

#### 7.1.4.1.5 Water Management Measures – Culvert and Realignment Construction

- The preferred method for culvert installation shall be offline, which allows for flow to continue in the existing watercourse until the new channel and culvert have been constructed and bedded in before going live. The Contractor shall endeavour to construct offline as a first preference.
- In cases where online construction is unavoidable the options for water management on watercourses affected by the Proposed Development (i.e., all are small as larger channels are being bridged) are: dam and pump-over, temporary piping/fluming, temporary diversion channel.
- Temporary diversion channels will be the second most preferable option after offline construction.
- Temporary diversion channels for culvert installation shall provide for fish passage, be non-eroding, and be of similar width to the natural stream channel. The temporary channel must be lined with suitable grade of impermeable geotextile membrane, secured up the channel banks to form a complete seal, and lined with washed rounded gravels in the base (low fines). This will minimise erosion and solids export from the temporary channel.
- Temporary diversion channels will be designed to accommodate a Q10 flood event.
- The Dewatering Protocol for Watercourse Interventions, below, shall apply to the abandoned channel of a temporary diversion.
- The Dewatering Protocol for Watercourse Interventions, below, shall apply to those locations where it is necessary to dam (cofferdams, sandbagging, sheet piling) and pump-over, pipe or gravity flume to create a dry working area.

#### 7.1.4.1.6 Dewatering Protocol during Watercourse Interventions

Water drawdowns in streams will be necessary: (1) where culverts are installed online requiring temporary drying out using temporary diversion, temporary dam and pumping or piping, or cofferdam; (2) where watercourses are abandoned following permanent diversion. The following mitigation will apply:

- For online construction, damming shall occur at low flow. Sufficient pump or flume capacity will be on hand before operations commence to ensure that: (a) upstream flows can be adequately transferred, and (b) downstream flows are not stopped or significantly interrupted.
- For temporary diversions, an upstream and downstream earthen bund shall remain in place until the adjacent temporary channel is constructed and lined. A dam shall then be introduced both upstream and downstream with the bunds opened to the diversion at that stage. The dams will be kept in place while the reach is electrofished and drawn down.
- Any cofferdam or sheet pile materials will be cleaned and dried between river catchments and sites within river catchments to prevent spread of invasive species and biological agents.
- Sand-bags will be of good integrity (i.e., composed of high-grade polythene, not webbing or hessian), filled with clean, coarse grade sand with no fines at all, sealed and placed carefully so they do not burst. The dam shall be faced with impermeable geotextile on the upstream side to seal gaps if required.
- On fish bearing waters as prescribed in **Appendix 11**, electrofishing will be undertaken
- by a suitably qualified / experienced ecologist or fisheries scientist to remove and relocate fish from the dammed area (under appropriate permits from Loughs Agency or IFI). In some cases, it may be necessary to slightly draw down water prior to electrofishing, however that is unlikely given that affected watercourses are generally small in nature (i.e., larger channels are bridged).

- As per typical conditions of electrofishing permits from Loughs Agency and IFI, data on fish removed (e.g., species, abundance, size class) shall be submitted in report and excel format to Loughs Agency (Section 1 and southern Section 3) and IFI (Section 2 and northern Section 3).
- Where channels are permanently being abandoned, once fish are removed, residual water shall be allowed to soak to ground before infilling of the old channel.
- In areas of online construction, once fish are removed, the works area will be pumped dry.
- This water will be pumped into a temporary sediment attenuation pond or tank for settlement. Such ponds or tanks shall be sized to allow for sufficient volume and residence time to settle suspended solids before discharge, preferably to ground.
- An alternative for small volumes will be to pump to a constructed basin formed by hay bales covered with a porous geotextile fabric that will filter the pump-out water.
- Filtered out sediments shall be disposed of well away from the watercourse in a location where they cannot be entrained back to any watercourse or connected land drain.
- With any works involving river damming or cofferdams – there is always a need for additional pumping from the works area to retain dry conditions. Even small leaks through dams can lead to pooling of water, requiring intermittent pump out. This water can become contaminated with sediment or substances that are harmful to aquatic life.
- Water contaminated with spilled or leaked concrete within cofferdams or dewatered channels, including water that leaks and surrounds newly dry concrete, can be very alkaline. Such water will be pumped out and tankered off-site to an appropriate, licenced disposal facility.
- During pump-overs, on-site pumps will be screened according to IFI (2016) guidance to prevent fish being entrained, e.g., using an outer barrier of permeable terram fitted over a prefabricated frame, with a metal pumping strainer / grill fitted to the end of the pipe inside the exclusion barrier.

#### 7.1.4.1.7 Soil Deposition Areas

- Any spoil spread on lands or used in contouring will be kept at least 5 m back from the edges of ephemeral land drains or 10 m from larger streams and rivers.
- The sequence of deposition with respect to a nearby drain or watercourse will include that a set-back earthen bund (tamped down mound) will be installed in advance of the main period of deposition, with further deposition occurring sequentially behind. The earthen bund forms a barrier to prevent uncontrolled sediment run-off during rain events. A secure silt fence will be installed at the watercourse / drain side at the toe of the bund until the deposition area behind it is rolled, reseeded and revegetated to reduce sources and pathways of solids wash-out to surface waters.
- All deposition areas will be top-soiled, rolled and re-seeded as soon as they have been filled, to stabilise the area and reduce the possibility of solids wash-out to surface waters. A secure silt fence will be installed at the toe of the newly deposited material and left in-situ until the area is rolled, reseeded and revegetated. Coir matting may be used to cover the outer edges/faces of the areas to reduce erosion if there is a low chance of the area revegetating before the winter months. Such matting (protection) shall be installed in each case between October and March, inclusive.

#### 7.1.4.1.8 Silt Fencing Specification

- The bottom edge of the geotextile silt fence material must be installed to a 200 mm embed below ground level.
- Stakes should be placed at the ends, on any bends, and at 2 m intervals along the silt fence. Stakes need to be driven a minimum of 400 mm to provide adequate support.

- The silt fence must have a tensioned wire backing - a minimum of 2 lines of wire run along the stakes. The top wire is used to clip the geotextile onto to hold it up and provide strength against trapped sediment.
- Silt fences will be checked and maintained weekly at minimum, and always before any forecasted heavy rain event, and again following an event.

#### 7.1.4.1.9 Sediment Loss Prevention Measures

The following measures for erosion and sediment control shall be adhered to by the Contractor:

- It is intended that all interceptor drains and attenuation ponds will be installed and revegetated in advance of the main earthworks phase, to reduce source areas for solids export. If it is not possible for revegetation of these features to be established in advance (e.g., seasonally constrained), then alternative measures, such as geotextile lining of temporary settlement areas and provision of coir matting on erodible cut slopes will be employed.
- Any temporary attenuation ponds utilised during the construction phase will be correctly designed and sized to allow sufficient volume and residence time for the settlement of suspended solids.
- Temporary attenuation ponds shall outfall to nearby land drains, not watercourses. This provides an additional line of attenuation prior to connectivity to a watercourse.
- Where permanent attenuation ponds are used for solids settlement during the construction phase, these will be cleaned out as required, i.e., when silt build up is observed during the construction phase and again at the end of the construction period.
- Any sediment removal from attenuation ponds during the construction phase shall occur during dry conditions with a dry (favourable) forecast of low rainfall (<5 mm daily rainfall), both during and in the 2–3 days following the maintenance event. The inlet and outlet of the settlement area will be temporarily bunded during such construction phase maintenance cleaning so that contaminated discharge does not occur.
- Topsoil stripping in proximity to any watercourses will be undertaken in dry weather conditions. Long-term stockpiles within 50m of a watercourse or drain will be covered with geotextile or coir matting or sown with an appropriate native grass seed and allowed to revegetate (if during summer months).
- Any temporary stockpiling of earthwork spoil will be placed on flat ground at least 10 m back from the edge of a riverbank or 5 m back from the nearest drainage ditch and covered with geotextile or coir matting if it is not being respread locally within a few days.
- Stripped areas will be revegetated, particularly cut and fill slopes and disturbed slopes as soon as possible, e.g., by use of hydroseeding (larger areas), replacement of turves (smaller areas) etc. Mulches or other organic stabilisers will be used to minimise erosion until vegetation is established on sensitive soils. Hydroseeding shall not be carried out in close proximity to water, and these areas will be seeded by hand or placement turves used.
- Any preferable flow paths towards drains or water courses from construction areas will have features including cut-off drains, check dams, staked-down haybales, sandbags bunds, to slow run-off velocities, reduce erosive energy and prevent sediment entrainment to surface waters.
- The crossing of watercourses at natural fords will not be permitted owing to uncontrolled sediment losses that can be generated and the creation of fords on streams and rivers through the introduction of stone is prohibited. Crossing of watercourses during the construction phase will occur at the newly constructed culvert reaches.
- The workflow on each site in association with the scheme will be designed to minimise damage to the edge of watercourses by heavy construction vehicles, with avoidance of rutting which would increase the risk of gully erosion or solids wash-out during intense rainfall.

- Heavy vehicular movements will be restricted adjacent to watercourse and tidal areas to avoid sediment generation. Haul routes parallel to watercourses will be at nearest 5 m away from the bank top and will have a secure silt fence installed along the edge to prevent wash out, with check-dams on preferential flow paths (as above) to prevent solids wash out to the nearby surface water.
- Run-off from stockpiles will be collected via a shallow toe drain which will discharge to a temporary settlement pond. Sediment build-up will be removed at regular intervals by manual means only and will be re-used in landscaping when dry.
- The contractor will install wheel washes at compound and construction site exits to prevent sediment and dirt being transported on to the road network. These will be contained and treatment shall be employed, including through the use of adequately sized settlement tanks, to remove sediment before discharge to the environment. These areas will be separate to designated concrete chute wash-out areas.

#### 7.1.4.1.10 Concrete Pollution Prevention

The use and management of concrete, which has a deleterious effect on water chemistry and aquatic habitats and species, in or close to watercourses shall be carefully controlled to avoid spillage. Alternate construction methods have been proposed to ensure avoidance of contamination with concrete, e.g. use of pre-cast units, stream diversions to undertake works in the dry, and permanent formwork. All avoidance measures will reduce the risks associated with concreting works. Where the use of concrete near water cannot be avoided, e.g. for in situ stitching, the following control measures will be employed:

- Best practice to be used in bulk-liquid concrete management addressing pouring and handling, secure shuttering/formwork, adequate curing times.
- Where shuttering is used, measures should be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
- When working in or near the surface water and the application of in-situ materials cannot be avoided, the use of alternative materials such as biodegradable shutter oils shall be used.
- Cement dust must be controlled as it is alkaline and harmful to the surrounding ecology. Activities which result in the creation of cement dust must be controlled by light dampening down.
- Any plant operating close to the water will require special consideration of the transport of concrete from the point of discharge from the mixer to final discharge into the delivery pipe (tremie). There will be no slewing of concrete skips or mobile concrete pumps over or near surface waters.
- The main pouring phases of liquid concrete associated with major bridge works (River Finn x 2, Swilly, Isle Burn, Cloghroe, Deelee, Swilly Burn) will be carried out under regular checks by the ECoW who will have the authority to temporarily halt works and bolster pollutant loss measures if concrete leakage is that could reach surface water is observed.
- There will be no hosing of concrete, cement, grout or similar material spills into surface water drains. Such spills shall be contained immediately, and runoff prevented from entering the watercourse.
- Raw or uncured waste concrete will be disposed of by removal from the site.
- On-site bulk liquid concrete batching will not be allowed and will be specifically prohibited in the contract documents.
- Washout from concrete lorries, except for the chute, will not be permitted on site and will only take place at the batching plant (or other appropriate facility designated by the manufacturer).
- Chute washout will be carried out at designated locations only. These locations will be signposted. The concrete plant and all delivery drivers will be informed of their location with the order information and on arrival on site.

- Chute washout locations will be provided within an appropriate designated, contained impermeable area and treatment facilities including adequately sized settlement tanks.
- Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks will be trapped on-site to allow sediment to settle out and reach neutral pH before clarified water is released to a drain system or allowed to percolate into the ground or alternatively disposed of as waste to a licensed facility.

#### 7.1.4.1.11 Prevention of Pollution with Other Substances

The following guidelines based on Chilibeck *et al.* (1992) and NRA (2008) will be followed for the protection of all watercourses from pollution with other substances:

- Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the Proposed Development and an emergency response plan shall be in place, in case of accidental spillage.
- The storage of hydrocarbon pollutants (oils, fuel, chemicals, hydraulic fluids) will not occur within 100 m of all watercourses and will be undertaken in accordance with current best practice for oil storage (Enterprise Ireland, BPGCS005) on an impervious base within a bund and appropriately secured.
- All machinery operating in these locations will be steam-cleaned in advance of works and routinely checked to ensure no leakage of oils or lubricants occurs.
- All fuelling of machinery will be undertaken at least 50 m set-back from all watercourses.
- All hazardous materials on site will be stored within the site compounds in lockable, secondary containment designed to retain at least 110% of the storage contents.
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of.
- Oil booms and oil soakage pads will be kept on site to deal with any accidental spillage.
- Prior to any instream works, the Contractor will ensure that all construction equipment is mechanically sound to avoid leaks of oil, fuel, hydraulic fluids and grease.
- No hydrocarbon-based waste material of any kind will be directed into any river, stream or drain.

#### 7.1.4.1.12 Flood and Heavy Rainfall Preparedness

- Short- and long-range weather forecast will be monitored and works scheduled accordingly to avoid, e.g., fresh excavations and soil deposition activities near watercourses.
- The following forecasting systems are available and will be used on a daily/weekly basis and reviewed by an EcoW, as required, to allow planning of construction activities with a view to water quality protection:
  - General Forecasts: Available from the Met Éireann website ([www.met.ie/forecasts](http://www.met.ie/forecasts)) for national, regional and county scales. These provide general information on weather patterns including forecasted rainfall by the hour;
  - Atlantic Charts: Available from the Met Éireann website ([www.met.ie/forecasts/atlantic-charts/precipitation-pressure](http://www.met.ie/forecasts/atlantic-charts/precipitation-pressure)) these provide an indication of spread and quantitative rainfall amounts for the next 10 days;
  - Weather warnings: Available from the Met Éireann website ([www.met.ie/warnings-today.html](http://www.met.ie/warnings-today.html)). Provides advance information on possible occurrence of severe weather;

- Rainfall Radar Images: Available from the Met Éireann website ([www.met.ie/latest-reports/recent-rainfall-radar](http://www.met.ie/latest-reports/recent-rainfall-radar)) providing an animation of current rainfall extent and intensity, updated every 15 minutes.
- Follow an emergency response and evacuation procedure for all works areas including removal of potential contaminants and construction plant and equipment.
- Bolster sediment run-off control measures in advance of forecast heavy rain events.
- Backup pumps and generators to be in place where over-pumping is taking place to mitigate against construction period pump failure or unexpected flooding.

#### 7.1.4.1.13 Environmental Incidents and Accidents

- An emergency-operating plan shall be established to deal with incidents or accidents during construction that may give rise to pollution within any watercourse. This shall include means of containment in the event of accidental spillage of hydrocarbons or other pollutants (including oil booms, soakage pads, etc.).
- Throughout all stages of the construction phase of the Proposed Development the Contractor shall ensure that good housekeeping is maintained and that all site personnel are made aware of the importance of the freshwater environments and the requirement to avoid pollution of all types.
- Raw or uncured waste concrete will be disposed of by removal from the site.
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of.
- There shall be no discharge of un-attenuated water to the adjacent freshwater environment.

#### 7.1.4.1.14 Additional Ground Investigation Works - SAC Channels

All general pollutant loss control measures set out above also apply for the pre-main construction enabling and any additional ground investigation works. In relation to the proposed crossings of SAC

ivers and their floodplain, proposed pre-commencement GI works will be rotary core boreholes and will include archaeological surveys and testing. The location of additional ground investigation and (potential) archaeological testing are described in Appendix 1 Project Description as follows:

- River Finn crossing in Section 1 (upstream Ballybofey). Proposed GI works are 8 m (minimum) away from the river channel, which is outside the SAC boundary as there are no temporary bridge construction works required within the SAC.
- River Swilly crossing in Section 2 (downstream Letterkenny). Proposed GI works are 15 m (minimum) away from the river channel, which is outside the SAC boundary as there are no temporary bridge construction works required within the SAC.
- River Finn crossing in Section 3 (upstream Lifford/Strabane) which occurs within the SAC boundary. Proposed GI works are 7.9 m (minimum) away from the river channel, i.e., bridge piers are required to cross the SAC floodplain on the County Donegal, ROI (northern side) of the river.

The above ground investigation and archaeological test trenching do not involve discharges to water. The GI works occur within discrete areas that are subject to disturbance by the construction footprint in any case, i.e., bridge pier foundations. The GI works areas will be surrounded in silt fencing prior to works commencing. In Sections 1 and 2, the SAC boundary shall be clearly marked by temporary exclusion fencing so that unintended incursion into the SAC does not occur. In Section 3 (within River Finn SAC) the riverside exclusion zone (7.9 m) shall be marked using temporary fencing to ensure an intact vegetated buffer area is preserved between the GI / archaeological works and the watercourse.

Ground Investigation Works or Archaeological Surveys and testing at the above locations will only be undertaken where feasible, having considered both ground conditions and ecological considerations and will be set back from these channels as far as practicable beyond the exclusion zones as set out, above. In addition, within 25m of these SAC channels, the investigations and/or testing will employ focused sediment loss prevention measures as required, e.g., silt fencing around any areas of soil stripping associated with these activities. The ECoW shall ensure the SAC boundary is clearly marked and liaise with the work teams to ensure the prescribed set backs are adhered to and sediment loss prevention measures are implemented, as prescribed.

#### 7.1.4.1.15 Coniferous Forestry Felling

Small areas of coniferous forestry will require felling as part of general site clearance works. This applies in Section 1 at the northern N13 tie-in where circa 3.75 ha of forestry clearance will be required. This occurs on a minor tributary in the upper River Deelee catchment (Lisnaree, Site W1-12). The following Guidelines & Standards apply and will be complied with during felling operations:

- Forestry & Water Quality Guidelines (DAFM, 2000a)
- Forest Harvesting & the Environment Guidelines (DAFM, 2000b)
- Standards for Felling and Reafforestation (DAFM, 2019)

Specifically, this involves employing the following mitigation measures to protect water quality during felling operations:

##### **Water exclusion zones** (from Section 6.1 DAFM (2019)):

- Before operations commence, a 10 m wide exclusion zone will be identified along the edge of all aquatic zones and hotspots, and this will be marked clearly on a site map.
- All operators will be made aware of the exclusion zone and its purpose, through the pre-commencement awareness process and throughout operations. Machine traffic and timber stacking are not permitted within exclusion zones.
- Trees within the reach of the harvester arm will be felled by harvester and stacked outside the exclusion zone.
- Trees outside machine reach will be felled manually by chainsaw operators. Felled trees will be winched out of the exclusion zone where it is appropriate and safe to do so, or removed by extended harvester arm, for subsequent snedding and processing outside the exclusion zone.
- In all cases, trees will be felled away from the water feature.
- Regarding aquatic zones, watercourse banks must not be disturbed. No branches or debris will be allowed to enter the aquatic zone during operations. Any branches that do fall in will immediately and with care be removed.
- The accumulation of brash, logs and debris in on-site drains and any aquatic zones will be prevented.

##### **Silt and sediment control** (from Section 7 DAFM (2019)):

- Prior to the commencement of operations, silt traps will be installed within existing forest drains that connect with aquatic zones, either directly or indirect via relevant watercourses.
- Silt traps will be staggered along the length of the drain, and not only at the lower reaches towards its outflow.
- Silt trap designs will include log sections laid lengthways into the drain and/or the use of staked geotextile barriers.

- Silt fences will be installed where necessary, to block pathways for silt escapement where overland flow is possible.
- Once silt traps and silt fences become functional, they will be checked a minimum of twice weekly and maintained / repaired, as necessary, in order to ensure continued effectiveness throughout felling operations.
- Drainage channels which by-pass the vegetated buffer zone and provide direct connection between the felling area and the stream need to be intermittently blocked with staked plastic sheet pile to minimise the risk of silt and nutrient run-off into the receiving waters.
- Extraction and haul routes must be confined to the driest areas of the site and routed in order to minimise the amount of trafficking around the site. Wherever possible, low load bearing harvesters and forwarding machinery will be used. Thick brash mats will be used and maintained and will be removed once felling is complete. At no time will brash be allowed to accumulate in drains, no matter how small. If brash has to be stockpiled it will be in dry areas as far from drainage as possible.

#### **Temporary water crossings** (from Section 8 DAFM (2019)):

- Direct crossing over stream beds will not be permitted.
- Crossing of on-site forest drains / 'relevant watercourses' and aquatic zones will be avoided.
- The crossing of drains during felling and extraction will be minimised, and machine activity will be restricted to brashed extraction racks and haulage routes.
- Where a drain crossing is needed, a method will be selected that prevents the breakdown and erosion of drain sides.
- For larger drain crossings, i.e., those with standing water or obvious water flow, a heavy-duty plastic culvert will be deployed lengthways into the channel and covered with brash material.
- For smaller drain crossings, i.e., those that have no standing water and are generally dry, log sections will be temporarily laid lengthways into the channel and overlaid with brash.
- When installing and removing the temporary crossings, it will be ensured that no additional work is carried out within the aquatic zone, and that the upstream and downstream stream bed and bankside remain undisturbed.

The appointed ECoW will ensure all felling related water quality protection guidelines and standards are complied with during the pre-commencement and felling operation phases.

The ECoW will carry out daily visual checks of all measures employed to avoid or reduce impact of forestry residues, erosion, including inspections of temporary drainage infrastructure (e.g., drain crossings), silt control measures, extraction routes and log storage areas.

### **7.1.4.2 Operational Phase**

#### **7.1.4.2.1 Surface Water Drainage Design**

The surface water drainage network, and catchment run-off interceptors, incorporate numerous features that provide 'mitigation by design' in terms of attenuating and treating run-off which avoids and reduces potential impact on the receiving watercourses. Measures to attenuate and treat carriageway run-off have been incorporated into the design in accordance with TII Drainage Standards (TII, 2024), which include for use of Sustainable Drainage Options (TII, 2014) and Vegetated Drainage Systems (TII, 2015b). Details on the proposed drainage measures are set out in Chapter 11: Water.

The following have been incorporated within the surface water drainage network to contribute and facilitate attenuation and treatment of surface water run-off from the Proposed Development:

- Filter Drains
- Grassed Surface water channels (swales)
- Infiltration Trenches
- Attenuation Ponds (all ponds for the Proposed Development are lined)
- Class I forecourt interceptor and Class I By-Pass Separator at the Service Area.

Class I by-pass hydrocarbon interceptors will be provided upstream of each proposed outfall to a watercourse or constructed attenuation pond. These are primarily aimed at removing hydrocarbons from run-off, while swales and attenuation ponds reduce the concentrations of other types of pollutants, e.g. heavy metals and sediment, and reduce the rate of run-off discharged to receiving watercourses. The rate at which flow is discharged from the attenuation ponds is limited to the 'greenfield' run-off rate up to the 1% AEP event from that catchment area.

Where no surface water course or existing drainage network is available, soakaways are designed into the Proposed Development that will discharge run-off to ground. These have been designed in accordance with local hydrogeological conditions and in compliance with Groundwater Regulations<sup>55</sup> so that ground water is protected through the use of appropriate liners, where necessary.

#### 7.1.4.2.2 Environmental Incidents and Accidents

The surface water drainage system has been designed to limit the potential for contaminated surface water run-off to reach the surface water during the operational stage. An Accidental Spillage calculation was carried out according to TII Standards which shows there is no significant risk of watercourse pollution in the event of accidental spillage.

#### 7.1.4.2.3 Attenuation Ponds and Wetlands

Attenuation ponds (Constructed Wetlands (CW)) are provided at all major surface water outfalls along the length of the road scheme and are designed in accordance with TII Drainage Standards (TII, 2015a, b; 2024). Attenuation ponds are designed as hybrid wetlands, so they provide both an attenuation function and a water treatment function. The ponds will be planted with vegetation suitable for the specific zonation within the pond, i.e., permanently wet, marginal zones and dry slopes. Additionally, where discharge is to ground via infiltration, infiltration basins/trenches are provided as the means of surface water discharge.

Irish studies have shown CWs to be highly effective at removing road runoff pollutants (Healy *et al*, 2008; Bruen *et al*, 2006; NRA, 2014), through physical (settling and sedimentation), chemical (cation exchange and adsorption, oxidation and hydrolysis, precipitation) and biological processes including uptake of metals by wetland plants (Healy *et al.*, 2008). Reported removal efficiencies are up to 94% of TSS, 67% of total phosphate, 91% of total zinc, 67% of total cadmium, 60% of total lead and 78% of total copper (TII, 2014). Irish road runoff wetland attenuation studies showed peak flow rate reduction of 96%, with the wetland developing into habitat for many species.

CW planting will include (amongst other species) Common reed (*Phragmites australis*) and Reedmace (*Typha latifolia*), both of which occur naturally in Co. Donegal (NBDC records). These species are metal tolerant and tend not to accumulate metals to toxic levels, hence suitable to support CW treatment function (Healy *et al*, 2008). To ensure the continued functioning of the operational phase drainage treatment train, maintenance of CWs will involve sediment removal (minimum of every 25 years), regular monitoring of inlet and outlet (for blockage), and repair of the required wetland planting (as above) and landscaping where necessary (TII, 2014) to ensure:

- Continuous base flow through the system to maintain plants and micro-organisms.
- Sufficient residence time to allow for sediment particles to settle and the removal of pollutants through adhesion to vegetation.

<sup>55</sup> S.I. No. 9/2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010 and amendments (S.I. no. 389 of 2011, S.I. no. 149 of 2012, S.I. no. 366 of 2016 and S.I. no. 287 of 2022).

#### 7.1.4.2.4 Hydrocarbon Interceptor Maintenance

For the lifetime of the road project, TII will undertake a documented hydrocarbon interceptor maintenance schedule including regular maintenance and cleaning according to manufacturer guidance. This will ensure the continued functioning of the drainage treatment train.

#### 7.1.5 In-combination

Two projects, the Ballybofey and Stranorlar Flood Relief Scheme (FRS) and the Barnesmore Gap Greenway, were identified, that if the construction phase of these developments overlapped with the construction phase of the TEN-T PRIPD in-combination adverse effects could not be ruled out in relation to the Proposed Development on the integrity of River Finn SAC. The primary reason cumulative effects cannot be ruled out is because details of the other projects are currently unknown, i.e., relating to the FRS in particular which is still in the early design stage (options). It is considered that potentially significant cumulative negative effects on water quality, fisheries habitat and the aquatic Qualifying Interest species, Atlantic salmon, could arise from the Proposed Development in combination with the Ballybofey / Stranorlar Flood Relief Scheme (FRS), the Barnesmore Gap Greenway Project, or both, if: (a) there is overlap between the construction phases of the three projects, and (b) either the Ballybofey / Stranorlar FRS, the Barnesmore Gap Greenway Project, or both, involve instream construction elements within 1 km of elements that are part of the Proposed Development, on the same watercourse.

Cumulative negative effects on receiving watercourses would only occur if either of these projects had a concurrent construction phase with the Proposed Development and may be related to: (i) cumulative water quality degradation, i.e., combined, elevated sediment, hydrocarbon and concrete losses, and associated effects on aquatic biota; and (ii) temporary fisheries habitat disturbance if/where instream works occur within 1 km of elements on the same watercourse that are part of the Proposed Development in the same year.

It is possible that neither the Barnesmore Gap Greenway Project nor the Ballybofey / Stranorlar FRS will have any instream works requirement within 1 km of elements that are part of the Proposed Development, on the same watercourse in the same year. However, the details of these two projects are currently unknown because they are both in earlier design stages. Design and environmental assessment information available for those projects was reviewed by the author, and all that is currently indicated (as of early 2026) is the possibility of a separate physical interaction on a small number of watercourses that are also affected by the proposed Donegal TEN-T PRIPD as follows:

- Barnesmore Gap Greenway – new footbridge over the Burn Durnett at Cappry, to link in with Donegal TEN-T Active Travel route. New footbridge over River Finn downstream of Ballybofey.
- Ballybofey / Stranorlar FRS – possible proposal for hard defences on: (i) Burn Durnett at Cappry, (ii) River Finn at Drumboe Lower and behind Jacksons Hotel, (iii) Backlees Stream at Drumboe Upper.

If neither the Barnesmore Gap Greenway Project nor the Ballybofey / Stranorlar FRS require instream works within 1 km of elements that are part of the Proposed Development, on the same watercourse in the same year, then no possibility of any construction phase cumulative impact or effect exists over and the effects that have already been assessed and mitigated in Section 7.1.4 above in relation to the Donegal TEN-T PRIPD. The separation distance of 1 km is a conservative zone of influence considering the moderate to large volume, fast-flowing nature of the watercourses in question (Burn Durnett, River Finn) and is in line with the distance suggested within the TII Water Impact Assessment Overarching Technical Document (TII, 2025) to be applied to define a potential zone of influence in relation to surface water quality effects when there is limited information, e.g., in the early stages of potential projects (as is the case for Barnesmore Gap Greenway Project and Ballybofey / Stranorlar FRS).

Further, the Ballybofey / Stranorlar FRS, the Barnesmore Gap Greenway Project, and the Proposed Development each have different likely timelines to obtain the necessary planning permissions and approvals. As of early 2026, the Ballybofey / Stranorlar FRS is only at early stages of planning (Stage 1 Options), while Barnesmore Gap Greenway is slightly further ahead in the planning stages. There is, therefore, a distinct possibility that all three projects will have separate construction phases with no overlap between them, in which case there will equally be no possibility of any construction phase cumulative impacts and consequent effects on aquatic habitats and species.

However, taking the conservative scenario, and applying the precautionary approach, where : (i) there is overlap between the construction phases of the proposed Donegal TEN-T PRIPD and either, or both, the Ballybofey / Stranorlar FRS or Barnesmore Gap Greenway Project, **and** (ii) either the Ballybofey / Stranorlar FRS, the Barnesmore Gap Greenway Project, or both, will require instream construction elements within 1 km of elements that are part of the Proposed Development, on the same watercourse in the same year, then the following mitigation will be applied:

- Phasing of construction elements where they involve instream works on the same channel within 1 km of each other, such that instream works on the same channel do not occur in the same instream works season of May 1st to September 30th of any year.

This measure addresses the identified potential for in-combination effects on integrity of the River Finn SAC of the Proposed Development in-combination with the Ballybofey / Stranorlar FRS and/or the Barnesmore Gap Greenway Project. It is a practicable restriction that can be incorporated into the construction schedule for the Proposed Development which will avoid, prevent and reduce potentially significant cumulative negative effects (water quality degradation and associated effects on aquatic biota; temporary habitat disturbance / fragmentation during construction) on receiving watercourses and aquatic biota.

## 7.1.6 Transboundary Effects

### 7.1.6.1 Background

The River Finn upstream of Lifford / Strabane in Section 3 of the Proposed Development forms the international border between the Republic of Ireland (ROI) (County Donegal) and Northern Ireland (NI) (County Tyrone). The river at this location is under conservation designation in both jurisdictions: ROI River Finn SAC and NI River Foyle and Tributaries SAC.

Section 3 of the Proposed Development includes the N14/N15 to A5 Link bridge (south of Lifford) to the border with Northern Ireland on the River The N14/N15 to A5 Link will connect to a proposed Trunk Road T3 (A5 Western Transport Corridor to Land Frontier), which in-turn will connect to the proposed A5 Western Transport Corridor (WTC). That proposed Trunk Road T3 (of approximately 79 metres of new road) will be pursued by the Department of Infrastructure (DfI) in Northern Ireland to provide a link between the proposed A5 WTC (NI) and the Donegal PRIPD.

The distance across the River Finn and its floodplain between the proposed N14/N15 junction and the A5 WTC junction is approximately 385 m. The main element of the N14/N15 to A5 Link is the proposed River Finn bridge which is an eight-span structure with a length of approximately 284 m. The eight span structure (see Appendix 2 NIS Drawings: Drawing 25 River Finn Crossing Section 3) involves construction of:

- One abutment and six bridge piers across the floodplain in County Donegal (ROI).
- One abutment and one bridge pier in County Tyrone (NI).
- Clear span length of c.63 m (span 7) over the River Finn between the bridge piers in ROI and NI.

In June 2025, the High Court in Northern Ireland made a judgement regarding the A5 WTC whereby the permission granted for sections 2 and 3 of the A5 WTC was quashed. That decision has been appealed to the Court of Appeal in Northern Ireland.

The proposed N14/N15 to A5 Link including the proposed bridge over the River Finn (i.e. the link between the N14/N15 Lifford Junction and a proposed Trunk Road T3) will not be constructed until such time as a proposed Trunk Road T3 / Section 1 of the A5 WTC has been constructed or is under construction. As described in Section 4.8.1.2 of the Project Description in Appendix 1, the section of the Proposed Development from Ballindrait Junction to the N14/N15 Lifford Junction is an essential element of the Project and can operate effectively without the N14/N15 to A5 Link should construction of the N14/N15 to A5 Link be delayed or not proceed. In the scenario without the proposed N14/N15 to A5 Link, traffic will still use the existing N14/ N15 /A38 River Foyle bridge crossing at Lifford/ Strabane for traffic travelling to and from Northern Ireland.

The scenarios with and without the N14/ N15 to A5 Link from the Proposed Development to the A5 WTC are therefore considered in this NIS with respect to potential transboundary effects on aquatic receptors.

### 7.1.6.2 Transboundary Effects including N14/N15 to A5 Link

The N14/N15 to A5 Link is part of the Proposed Development. As such, it has been assessed in this Chapter within Section 6.6.1 (River Finn SAC) and Section 6.6.2 (River Foyle and Tributaries SAC) and Chapter 7 (mitigation measures), above. Effects were considered in the context of the River Finn SAC (ROI), its Qualifying Interests and conservation objectives (NPWS, 2017a) and the contiguous River Foyle and Tributaries SAC of Northern Ireland, its qualifying features and conservation objectives (NIEA, 2024). In the scenario where a proposed Trunk Road T3 / Section 1 of the A5 WTC has been constructed or is under construction and the N14/N15 to A5 Link is therefore constructed as part of the Proposed Development, the summary assessment of effects is as follows:

- With implementation of the specified design and mitigation measures (Chapter 7), the residual impacts of the proposed N14/N15 to A5 Link on aquatic receptors will be localised, indirect, negative, temporary, not significant. The Proposed Development will not affect the conservation status of salmon, which is the only aquatic Qualifying Interest / Feature species present in the reasonable Zone of Influence. The waters of the River Finn and Foyle, at and downstream of the proposed N14/N15 to A5 Link bridge are not spawning or sensitive nursery waters, but are holding and migration areas for older, inward/outward migrating (smolt, adult) life stages which are generally more resilient and adapted to estuarine environments that are often naturally slightly turbid, for example. There will be one swale drainage channel discharging to existing ephemeral drains outside the SAC boundary on the Finn floodplain from Section 3 Attenuation Pond No. 16. These drains currently outfall to the River Finn and there is no requirement for an additional drainage outfall directly to the river itself. HEWRAT calculations (see EIAR Chapter 11: Water) as per TII Standard DN-DNG-03065 demonstrate no significant operational phase effects on aquatic receptors are likely, i.e., all outfalls pass the acute and chronic HEWRAT criteria (sedimentation, copper and zinc concentrations). All relevant outfalls also pass the assessment relating to Environmental Quality Standards (EQS). All applicable outfalls pass the HEWRAT cumulative risk assessment, i.e., at locations where there is more than one discharge on the same reach of a watercourse. The proposed N14/N15 to A5 Link development will have no adverse effect on conservation objectives or integrity of the contiguous River Finn SAC (ROI) and River Foyle and Tributaries SAC of Northern Ireland.

### 7.1.6.3 Transboundary Effects without N14/N15 to A5 Link

In the scenario without the N14/N15 to A5 Link:

- There will be no potential for indirect effects on water quality and aquatic receptors related to the bridge construction. There will still be one swale drainage channel discharging to existing ephemeral drains outside the SAC boundary on the Finn floodplain from Section 3 Attenuation Pond No. 16. These drains currently outfall to the River Finn and there is no requirement for an additional drainage outfall directly to the river itself. HEWRAT calculations (see Chapter 11: Water) as per TII Standard DN-DNG-03065 show that all outfalls pass the HEWRAT criteria (sedimentation, copper and zinc concentrations) individually and cumulatively (where applicable). All outfalls also pass the assessment relating to Environmental Quality Standards (EQS). There will still be minor temporary works within the SAC boundary under this scenario, i.e., at the embankments for the active travel path, but no permanent footprint in the River Finn SAC (ROI) or River Foyle and Tributaries SAC (NI).
- With all mitigations employed in the areas of sediment and pollutant loss control during the construction phase of southern Section 3 (Finn catchment), the residual impact on aquatic receptors of the River Finn will be indirect neutral to temporary negative not significant. The Proposed Development will not affect the conservation status of salmon, which is the only aquatic Qualifying Interest / Feature species present in the reasonable Zone of Influence, i.e., in the older, migrating life stages, and will have no adverse effect on conservation objectives or integrity of the River Finn SAC (ROI) or River Foyle and Tributaries SAC of Northern Ireland.

#### 7.1.6.4 Other Transboundary Effects from Proposed Development

Whether the N14/N15 to A5 Link is constructed or not, there will be hydrological connectivity from Section 3 of the Proposed Development to the River Foyle and Tributaries SAC (NI) via the Swilly Burn and Deelee rivers. The proposed River Deelee bridge (Site W3-17) is 3.5 km upstream of the River Finn SAC boundary and an additional c. 5 km upstream of the River Foyle and Tributaries SAC boundary on the lower River Foyle. The proposed Swilly Burn bridge (Site W3-14) is 6.8 km upstream of the contiguous River Finn SAC (ROI) and River Foyle and Tributaries SAC (NI) boundary on the lower River Foyle. Salmon are the only aquatic Qualifying Interest present in the reasonable ZOI downstream of the Proposed Development. In this regard, the affected reaches of the lower Swilly Burn, Deelee, Finn and Foyle are not spawning or sensitive nursery waters, but are holding and migration areas for older, inward/outward migrating life stages (smolt, adults) which are generally more resilient and adapted to estuarine environments that are subject to natural variability in turbidity for example. Owing to: (1) proposed clear span bridge designs over the Deelee and Swilly Burn rivers, (2) mitigations implemented in the areas of sediment and pollutant loss control during construction, and at the separation distances involved along the lower reaches of these sluggish, tidally influenced rivers, transboundary construction phase effects on aquatic receptors will be indirect, short-term imperceptible negative and not significant.

Owing to the proposed drainage design (attenuation and consequent treatment), operational phase effects will be indirect, neutral-to-imperceptible and not significant. The Proposed Development will not affect the conservation objectives for salmon and there will be no adverse effect on integrity of the contiguous River Finn SAC (ROI) and River Foyle and Tributaries SAC of Northern Ireland.

## 8 CONCLUSION OF ASSESSMENT OF ADVERSE EFFECTS ON INTEGRITY (WITH MITIGATION)

It was concluded that in the absence of mitigation the Proposed Development could result in adverse effects on integrity with respect to the following European Sites: River Finn SAC, Lough Swilly SAC, Lough Foyle and Tributaries SAC, Lough Swilly SPA and the Lough Foyle SPAs. However, subject to the implementation of the mitigation measures detailed above, it can be concluded, beyond reasonable scientific doubt, that the Proposed Development will not result in any adverse effect on integrity on any of these European Sites. The assessment is summarised in Table 8.1 below.

**Table 8.1: Summary of Assessment**

European Site	QI or SCI	Potential Adverse Effects without Mitigation	Mitigation	Potential Adverse Effects with Mitigation
<b>River Finn SAC</b>	Oligotrophic Waters Containing Very Few Minerals of Sandy Plains ( <i>Littorelletalia uniflorae</i> )	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Northern Atlantic Wet Heaths and <i>Erica tetralix</i>	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Blanket Bogs (if active bog)	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Transition Mires and Quaking Bogs	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	<i>Salmo salar</i> (Atlantic Salmon)	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Habitats (Section 7.1.2) and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
	<i>Lutra lutra</i> (Otter)	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Species (Section 7.1.3) Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
<b>River Foyle and Tributaries SAC</b>	Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Atlantic Salmon <i>Salmo salar</i>	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Habitats (Section 7.1.2) and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
	Otter <i>Lutra lutra</i>	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Species (Section 7.1.3) Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity

European Site	QI or SCI	Potential Adverse Effects without Mitigation	Mitigation	Potential Adverse Effects with Mitigation
<b>Lough Swilly SAC</b>	Estuaries	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Habitats (Section 7.1.2) and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
	Coastal Lagoons	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Atlantic Salt Meadows (Glauco-Puccinellietalia maritimae)	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Habitats (Section 7.1.2) and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
	Molinia Meadows on Calcareous, Peaty or Clayey-silt-laden Soils ( <i>Molinia caeruleae</i> )	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	Old Sessile Oak Woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
	<i>Lutra lutra</i> (Otter)	Potential adverse effects on Integrity	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), Species (Section 7.1.2) Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
	Harbour Porpoise ( <i>Phocoena phocoena</i> )	No adverse effects on Integrity	None required	No Adverse Effects on Integrity
<b>Lough Swilly SPA</b>	SCI Species Listed at Section 6.6.4	No potential adverse effects on Integrity however precautionary mitigation measures recommended.	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity
<b>Lough Foyle SPAs</b>	SCI Species Listed at Section 6.6.5	No potential adverse effects on Integrity however precautionary mitigation measures recommended.	Yes, with respect to Overarching Mitigation Measures (Section 7.1.1), and Aquatic Environment (Section 7.1.4) for Construction and Operation	No Adverse Effects on Integrity

This Natura Impact Statement has considered the potential for adverse effects arising from the Proposed Development that would have the potential to adversely affect the integrity of any European Site(s), with regard to its qualifying interests, special conservation interests and conservation objectives. The Proposed Development crosses over the Lough Swilly SAC, River Finn SAC, River Foyle and Tributaries SAC and is in close proximity to the Lough Swilly SPA. It is also known that SCI species of the Lough Foyle SPAs utilise lands in close proximity to the Proposed Development as ex-situ foraging grounds.

The potential for direct, indirect and in-combination effects affecting the above designations has therefore been assessed in this NIS. The assessment has been informed by field surveys and specialist reporting with reference to the ecological communities and habitats potentially affected by the Proposed Development, in order to provide a robust scientific basis for evaluations.

To mitigate adverse effects on a European Site that are likely to arise as a result of the Proposed Development, mitigation measures are specified in Chapter 7. These mitigation measures will be carried out

during the construction and operational phases of the Proposed Development. With the implementation of mitigation measures, the Proposed Development will not result in direct, indirect or in-combination impacts which would have the potential to adversely affect the qualifying interests/special conservation interests of any the European Sites assessed within this report having regard to the range, population densities and conservation status of the habitats and species for which these sites are designated (i.e. conservation objectives).

The Proposed Development will not, beyond reasonable scientific doubt, adversely affect the integrity of any European Site. No reasonable scientific doubt remains as to the absence of any such adverse effects on the integrity of any European Site from this road development, either individually or in combination with other plans or projects.

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**Studies were also carried out in accordance with the following legislation:**

- 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));
- Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014;
- European Union (Birds and Natural Habitats) (Amendment) Regulations 2021 (S.I. No. 293/2021)
- European Communities (Environmental Liability) Regulations, 2008 (S.I. No. 547 of 2008);
- European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 84 of 1988);
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, S.I. No. 296 of 2018, as amended;
- Flora Protection Order, 2022;
- Planning and Development Act, 2000 (as amended);
- Roads Acts 1993 to 2007(as amended);
- Water Framework Directive (2000/60/EC), and
- Wildlife Act 1976, as amended.

# APPENDIX 1

## PROJECT DESCRIPTION

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## LOUGHS AGENCY DATA

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## OLIGOTROPHIC WATER

# APPENDIX 11

## CONSTRUCTION PHASE IMPACTS - CULVERTS

# APPENDIX 12

## OPERATIONAL PHASE IMPACTS - CULVERTS

# APPENDIX 13

## INVASIVE SPECIES MANAGEMENT PLAN