FLYNN FURNEY
ENVIRONMENTAL CONSULTANTS

Appropriate Assessment Screening Report

Document Details

Client: Ward and Burke
Scheme Name: Adare Rationalisation
Document Title: Appropriate Assessment Screening Report

Rev	Status	Date	Author(s)	Approved by
01	Completed	08/10/2024	CP	JN
02	Completed	22/10/2024	CP	JN
03	Completed	14/11/2024	JN	JN
04	Completed	19/12/2024	JN	SKF
05	Completed	15/01/2025	JN	SKF
06	Completed	17/01/2024	JN	SKF

Table of Contents

1. Introduction

This report comprises information in support of screening for Appropriate Assessment (AA) in line with the requirements of Article 6[3] of the EU Habitats Directive (EC 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora; the Planning and Development (Amendment) Act 2010; and the European Union (Birds and Natural Habitats) Regulations 2011 as amended, for the proposed construction of the watermains within the Adare area of Limerick, County Limerick.

This screening exercise aims to determine whether the proposed works have the potential to significantly impact upon the conservation objectives and overall integrity of any Natura 2000 sites. This assessment is based upon a desk study and field work carried out by suitably qualified ecologists. Also included is a general assessment of the ecological status of the site and the potential impacts of the proposed works on the ecology of the surrounding area, including Designated Sites.

The following definitions are used for the terms “impact” and “effect”:

Impact – Actions resulting in changes to an ecological feature, e.g. the construction activities of a development removing a hedgerow.

Effect – Outcome to an ecological feature from an impact, e.g. the effects on an animal population from loss of a hedgerow.

The Competent Authority is obliged to examine the likely significant effects individually or in combination, of the proposed development on European Designated Sites in light of their specific Qualifying Interests (QIs) and Conservation Objectives (COs). If AA screening determines that there is likely to be significant effects on one or more of these sites, or the impacts are uncertain, then full AA must be carried out for the proposed development, including the compilation of a Natura Impact Statement to inform the decision making.

For the purposes of this assessment, a “significant effect” is:

“...an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ ... or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity).

Effects can be considered significant at a wide range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project.

In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)."

- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (2018)

Sections 4 and 5 of the report comprises the AA Screening that specifically focuses on the potential for impacts on Natura 2000 sites deemed to be at risk from the proposed development.

2. Background to Screening for Appropriate Assessment

2.1. European Designated Sites

Sites designated for the conservation of nature in Ireland include:

- Special Areas of Conservation (SACs);
- Special Protection Areas (SPAs), and;
- Natural Heritage Areas (NHAs)

SPAs and SACs form the Natura 2000 network of sites. It is these sites that are of relevance to the screening process for this Appropriate Assessment Screening.

SPAs and SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. SPAs and SACs are designated under EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.

Natural Heritage Area (NHA) is the basic designation for wildlife in Ireland. These are areas considered important for their habitats or species of plants and animals whose habitat requires protection and are protected by the Wildlife (Amendment) Act of 2000.

All European Designated Sites (henceforth simply referred to as "Designated Sites") that are connected to the proposed development were considered during the desktop study in order to assess the potential for significant effects upon their QIs and COs. This stage of the process is used to determine whether any of the Designated Sites can be regarded as not being relevant to the process of Appropriate Assessment of the project, having no potential to be significantly affected.

2.2. Legislative Context

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6 paragraphs 3 and 4 of the Habitats Directive 92/43/EEC' (Oxford Brookes University, 2001). This report and contributory fieldwork were carried out in accordance with guidelines given by the Department of Environment, Heritage and Local Government (2009, amended February 2010).

The assessment process is given in Articles 6[3] and 6[4] of the Habitats Directive and is commonly referred to as "Appropriate Assessment" or AA.

Article 6 of the Habitats Directive sets out provisions which govern the conservation and management of Natura 2000 sites. Article 6[3] and 6[4] of the Habitats Directive set out the decision-making tests for plans

and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6[3] establishes the requirement for Appropriate Assessment:

> "Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and 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 implication 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] continues:

> "If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.
>
> It is the responsibility of the proponent of the plan or project to provide the relevant information (ecological surveys, research, analysis etc.) for submission to the 'competent national authority'. If satisfied that the information is complete and objective, the competent authority will use this information to screen the project, i.e. to determine if an AA is required and to carry out the AA, if one is deemed necessary. The competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned."

The appropriate assessment process has four stages. Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. The four stages are:

1. Screening to determine if an appropriate assessment is required;
2. Appropriate assessment;

3. Consideration of alternative solutions, and;
4. Imperative reasons of overriding public interest/derogation.

Stage 1: Screening for AA

This report provides a stage one Screening for Appropriate Assessment. It aims to establish whether the plan or project is directly connected with or necessary to the management of Designated Sites; or in view of best scientific knowledge, if the plan or project, individually or in combination with other plans or projects, is likely to have a significant effect on a Designated Site. This is done by examining the proposed plan or project and the COs of any Designated Sites that might potentially be affected.

The study is based on a preliminary impact assessment using both publicly available data and data collected during site surveys. This is followed by a determination of whether there is a risk that the effects identified could significantly impact any Natura 2000 sites, and if so an Appropriate Assessment (AA) is required. The need to apply the precautionary principle in making any key decisions in relation to the tests of AA has been confirmed by European Court of Justice case law. Therefore, where significant effects are likely, possible or uncertain at screening stage, a stage two AA will be required.

3. Methodology

3.1. Desk Study

A desktop study was carried out as part of this screening process to gain an understanding of the surrounding human and natural environments. This included a review of available data from a range of sources on the site and its immediate environs.

This assessment was conducted by Claudia Pascali (BSc, surveyor and author), Jason Nash (BSc, MIFM, surveyor and reviewer) and Simon Furney (MCIEEM, MIFM, reviewer).

3.2. Data Used To Carry Out The Assessment

The following sources of data were employed in October 2024:

- Environmental Protection Agency (EPA) Appropriate Assessment Tool;
- EPA Maps (to identify watercourses, hydrology and Natura 2000 site boundaries);
- National Parks and Wildlife Service (NPWS) protected species database and online mapping;
- The Geological Survey of Ireland hydrological and lidar data and map viewer;
- The National Biodiversity Data Centre archives;
- Inland Fisheries Ireland, and;
- An Bord Pleanála's online database

Relevant findings from consulting these sources have been incorporated into the following report where necessary.

3.3. SPR Model

This assessment was carried out using the source-pathway-receptor (SPR) approach, a standard tool in environmental assessment. The SPR concept in ecological impact assessment relates to the idea that for the risk of an impact to occur, a source is needed (e.g. a development site); an environmental receptor is present (a lake); and finally there must a pathway between the source and the receptor (a watercourse linking the development site to the lake). Even though there might be a risk of an impact occurring, it does not necessarily mean that it will occur, and in the event that it does occur, it may not have significant effects on the receiving environment. Identification of a risk means that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the risk and the characteristics of the receptor.

In this instance, the most relevant receptors are any relevant Natura 2000 sites with connectivity of the proposed works. These were considered during the desktop study stage of this screening assessment in order to assess the potential for significant effects upon their QIs and COs.

3.4. Field Survey

The field survey was carried out on the 12th of September, and the 2nd of October 2024. Baseline ecological conditions were assessed. Habitats were classified according to A Guide to Habitats in Ireland (Fossitt, 2000). Where applicable, the habitat types and species usage were recorded (Smith et al. 2011; Scannell and Synnott, 1987; Wyse Jackson et al. 2016). Habitats were classified and dominant plant species noted according to the guidelines given by the JNCC (2010) with reference to best practice guidance for habitat survey and mapping (Smith et al., 2011) and Census Catalogue of the Flora of Ireland (Scannell & Synnott, 1987).

4. Screening of Designated Sites

4.1. Site Location

The proposed works area is located south of Limerick City, Co. Limerick, running between the two towns of Adare and Croom. The total length of the proposed project is approximately 9157m, with starting point at Grid reference: R 50569 44652 and finishing point at grid reference R 45334 44969. Works are intended to follow local road L1420 for the most part, with sections of national road N20 and regional road R519 also affected. The landscape surrounding the works area consists of improved agricultural land, with the urban sprawl of Croom and Adare framing the extremities of the works area.

4.2. Receiving Environment

The surrounding habitats are pasture (GA1 - Improved agricultural grassland, WL1 Hedgerows, WL2 Treelines), broadleaf woodland (WD1 – Mixed broadleaf woodland) and low density commercial and residential buildings (BL3 - Buildings and artificial surfaces). The river Maigue (FW2 – Lowland depositing river) runs perpendicular to the project, crossing the area of proposed works at grid reference R 47991 43807.

Habitats of significant ecological value that were observed within the immediate surroundings of the works area are further described below in Table 1, with descriptions adapted from "A Guide to Habitats in Ireland" by Julie A. Fossitt, 2000.

Table 1. Description of habitats of significant ecological value found within and adjacent to the site.

Habitat Type	Species Occurring
Hedgerows WL1 and Treelines WL2	These habitats occurred along the entirety of the proposed works area, along the relevant local and regional roads. Hazel (*Corylus avellana*) and Sycamore (*Acer pseudoplatanus*) were the most commonly encountered species, along with Hawthorn (*Crataegus monogyna*), Ash(*Fraxinus excelsior*) and Wych Elm (*Ulmus glabra*). Hedgerows near private dwellings were often composed of Cherry Laurel (*Prunus laurocerasus*).
Improved Agricultural Grassland GA1	Agricultural grasslands were the prevalent habitat type found in the adjacent landscape, with the majority of the fields used for pasture. These were primarily composed of agricultural grasses such as Perennial Rye-grass (*Lolium perenne*) and sparse broadleaf herbes such as Plantain (*Platago spp*.) and Clover (*Trifolium spp*.).
Mixed broadleaf woodland - WD1	This habitat is located to the east of the Maigue crossing, where it runs parallel to the works area for 350m. Species found in this habitat are Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Beech (*Fagus sylvatica*) and Horse Chestnut (*Aesculus hippocastanum*).
Lowland Depositing River FW2	The section of the Maigue directly adjacent to the works area is slow flowing, with fine sediment present on the river bed. Evidence of high nutrient input is visible. Aquatic plant such as Water Crowfoot (*Ranunculus aquatilis*), Yellow Water Lily (*Nuphar lutea*), and water-starworts (*Callitriche spp*.). Common Club-rush (*Schoenoplectus lacustris*), Common Reed (*Phragmites australis*), Reed Canary-grass (Phalaris arundinacea), and Branched Burr-reed (*Sparganium erectum*) fringe the sides of the river.

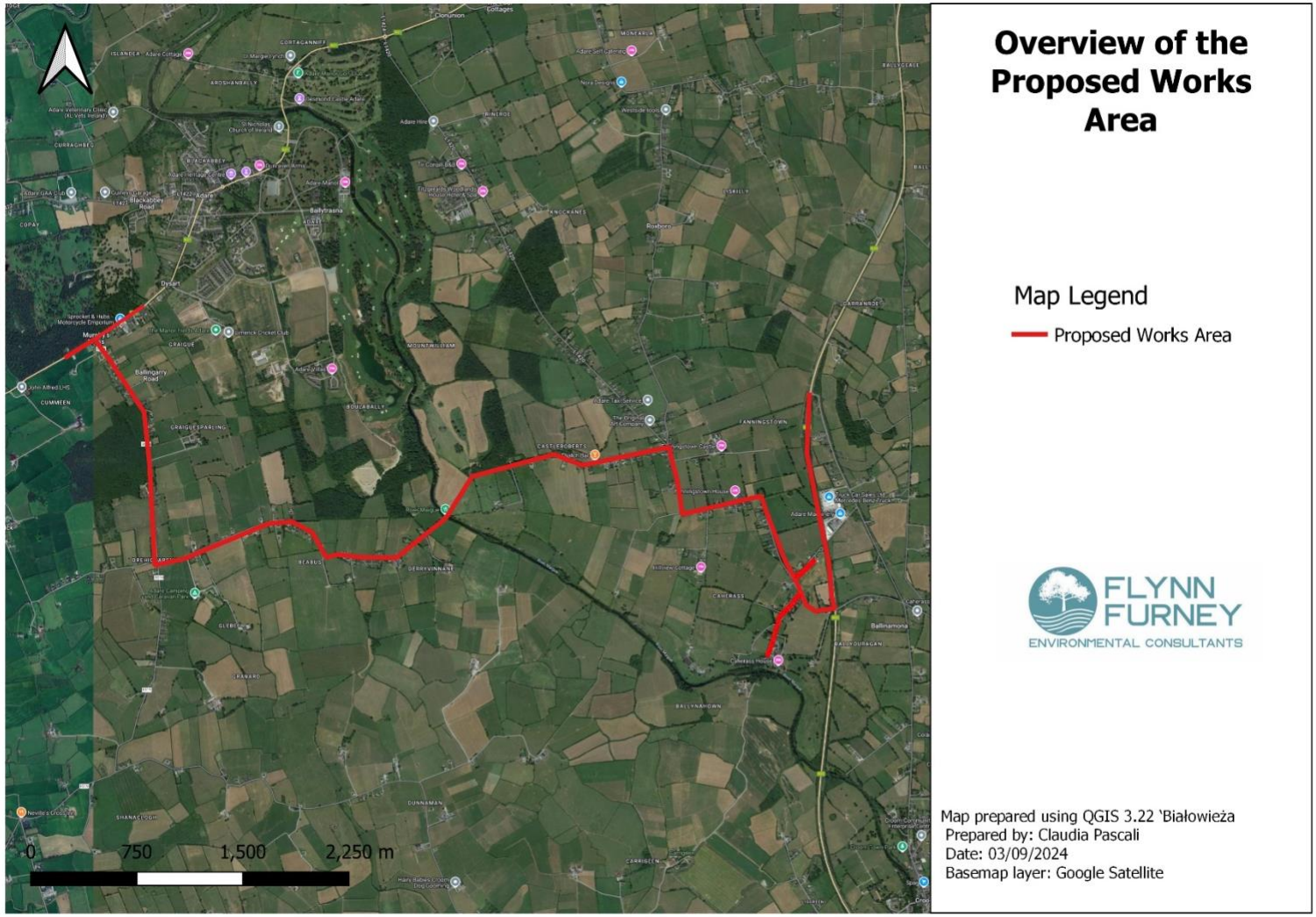

Figure 1. Overview of works area

4.2.1. Surface water and groundwater

The proposed works area crosses the River Maigue near the locality of Boulabally (R 47983 43843), as seen in Figure 2. Groundwater vulnerability under the works area varies throughout its footprint, but it is described as high for the majority of the works area, particularly in proximity of River Maigue. Areas of moderate and extreme groundwater vulnerability are also described (Figure 3). Subsoil permeability is mostly described as moderate, with a few sections not yet been mapped (Figure 4). Given the lack of works at depth, no risk to any designated or local site is predicted as a result of possible impacts to groundwater.

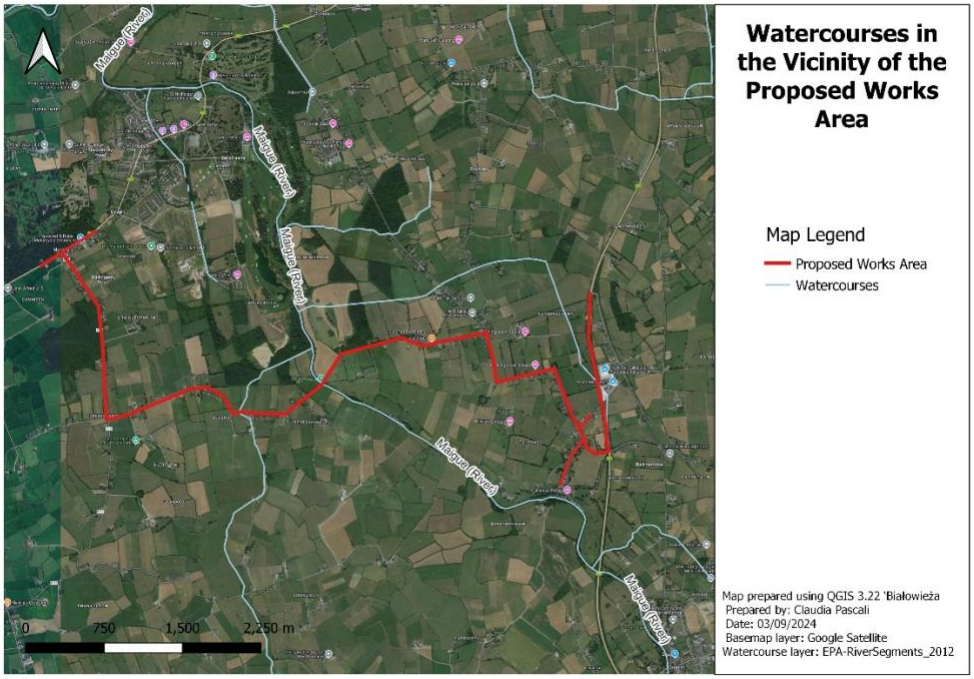

Figure 2. Overview of the local water courses.

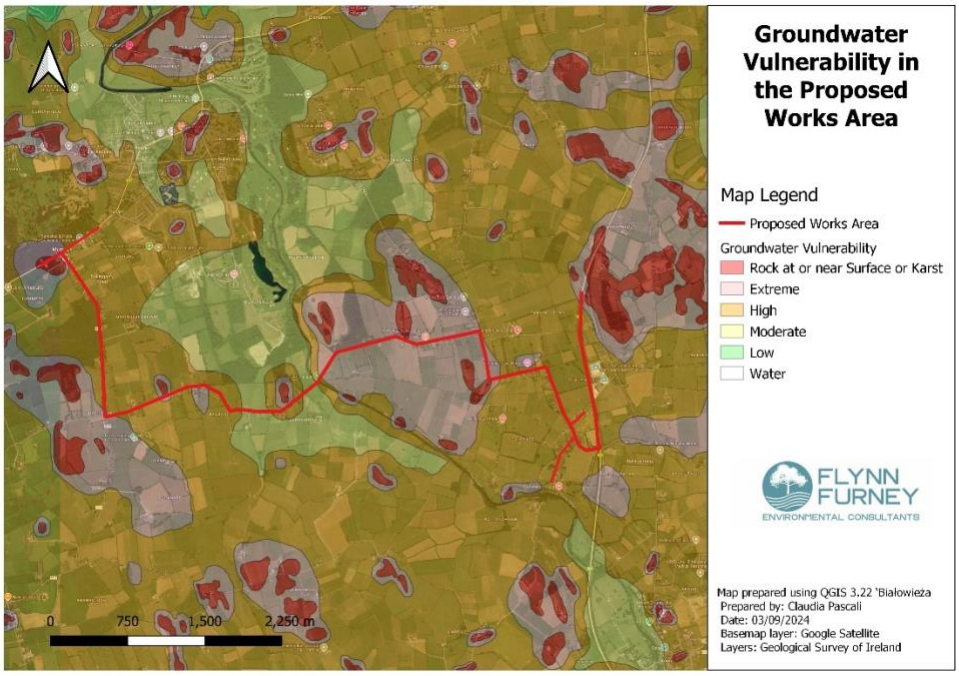

Figure 3. Overview of the groundwater vulnerability in the Proposed Works Area.

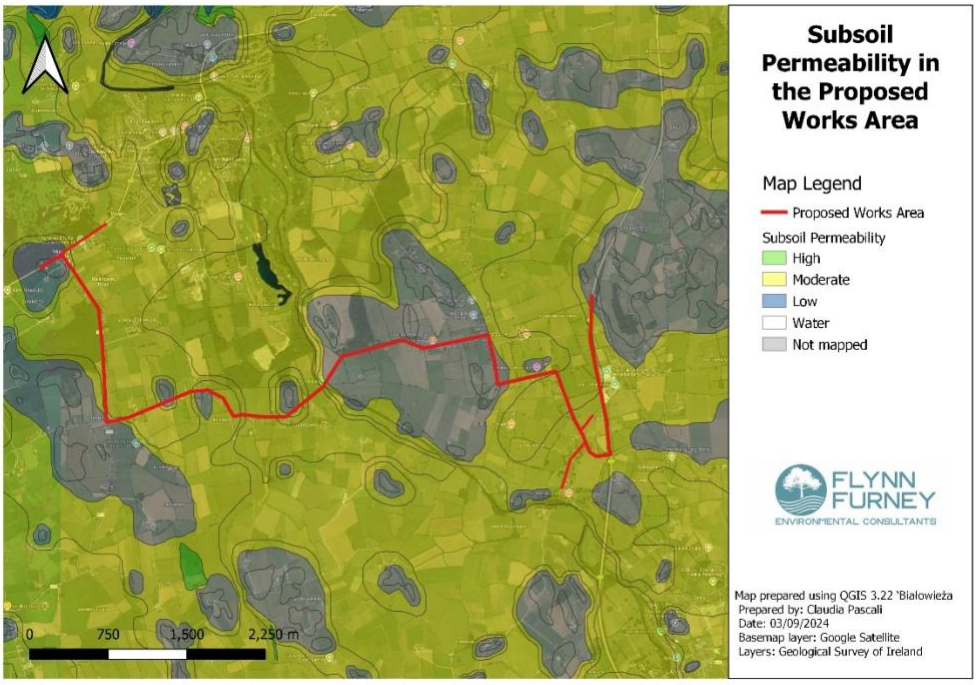

Figure 4. Overview of the Subsoil Permeability in the Proposed Works Area

4.2.3. Breeding Birds

All species of wild bird that occur naturally in Ireland are fully protected at all times by the Wildlife Act and relevant amending legislation. Similarly, all birds naturally occurring in the wild state are afforded a measure of protection by the EU Birds Directive but derogations may reduce protection for specific reasons. As such, any vegetation clearance must be carried out outside of the bird nesting season (March 1st - August 31st). A dedicated breeding bird survey was not carried out. However, all birds seen and heard were recorded and are reported in Table 2.

Table 2. List of bird species observed during the survey

Species name	Scientific name	Conservation Status
Jackdaw	*Coloeus monedula*	Green
Robin	*Erithacus rubecula*	Green
Wren	*Troglodytes troglodytes*	Green
Rook	*Corvus frugilegus*	Green
Kingfisher	*Alcedo atthis*	Amber
Grey Heron	*Ardea cinerea*	Green
House Martins	*Delichon urbicum*	Amber
Cormorant*	*Phalacrocorax carbo*	Amber
Mute Swan	*Cygnus olor*	Amber

* Cormorant is a Qualifying Interest of River Shannon and River Fergus Estuary SPA, and the only bird species that are Special Conservation Interests of a SPA found within the survey site. were found within the survey site. This particular QI will be assessed further in section 5.

4.2.4. Amphibians

A dedicated amphibian survey was not carried out as the works will not be entering any areas where Frogs (*Rana temporaria*) or Newts (*Lissotriton vulgaris*) are likely to spawn.

4.2.5. Mammals

The presence of Otter (*Lutra lutra*) was noted along the banks of the river Maigue during a dedicated otter survey, which covered 150m of ground either side of the Maigue crossing point, on both sides of the river. Figure 5 below reports details of the locations and the activity recorded. Slides, couches, and tracks were recorded, with the closest couch being recorded 115m to the east. Holts were absent.

The droppings of a Badger (*Meles meles*) were noted in the field to the west of the river crossing, however no sett was identified in the vicinity of the proposed river crossing works area. No signs of activity of any other protected mammal species were found within the footprint of the proposed development.

Figure 5. Details of Otter Activity in the vicinity of the works site.

4.2.6. Significance of Flora and Fauna

No species listed on Annex II of the Habitats Directive were found to be occurring on the site. Evidence of protected mammals is detailed in section 4.2.5 above. Possible impacts to Otters will be assessed further in section 5. While all bird species are protected to some extent under Irish legislation, the habitat types found here do not offer nesting habitat for any (Birds Directive) Annex species. No flora from the Flora Protection Order list was found during the field survey.

4.2.7. Invasive Species

The Wildlife Acts, 1976 and 2000, contain a number of provisions relating to invasive non-native species (INNS), covering several sections and subsections of the Acts. It is prohibited, without licence, to plant or

otherwise cause to grow in a wild state, in any place in the State, any species of flora, or the flowers, roots, seeds or spores of invasive flora listed on the Third Schedule.

Articles 49 and 50 of the aforementioned Acts set out the legal implications associated with alien invasive species and Schedule 3 (the Third Schedule) of the regulations lists non-native species subject to the restrictions of Articles 49 and 50, which make it an offence to plant, disperse, allow dispersal or cause the spread of invasive species.

During the survey, five alien invasive species were recorded on the grounds adjacent to the proposed works area: Giant Hogweed (*Heracleum mantegazzianum*), Water Fern (*Azolla filiculoides)*, Cherry Laurel (*Prunus laurocerasus*), Wall Cotoneaster (*Cotoneaster horizontalis*) and Snowberry (*Symphoricarpos albus*). These will be discussed further in a separate Invasive Species Survey Report.

4.3. Proposed Works

Works include the rationalization and construction of approximately 9517m of rising mains along L1420, R519, and N20. Site investigation will involve slit trenches and trial pits on the proposed route, with each one being excavated and backfilled in the same day. Replacement main sizes will be a minimum 315mm, 4.5MLD. Chlorination is likely to be required, as standard. Methodology for this is detailed in Section 4.3.1. Methodology for installing mains along the road will be open cut. The works are to cross the River Maigue upstream of the Lower River Shannon SAC. The water main will be installed through Horizontal Directional Drilling (HDD), with pipes installed approximately 4m below the riverbed. This method is suitable as local geological composition (pale limestone with calcite veins and clay infill of minor fissures) is not conducive to frack out. Launch pit and receptor pits will be located 50m from the banks, and measure approximately 25m^2 in area. An underground drain on the southern side of the river, which exits a concrete pipe, will be avoided in order to ensure silt laden water from proposed works does not enter it. Topsoil stripping will be required in this area and no other vegetation requires removal. Pit areas are located at a lower elevation then the riverbank on both sides of the river, meaning run-off from the works area is not a concern. Another small watercourse (Dunnaman) located to the west of the River Maigue will be crossed by open trench within the surface of the road over the culvert. The Dunnaman River exhibits high degrees of anthropogenic influence and was considered to be of a low ecological value.

Works are summarized below:

Table 3. Summary of proposed works.

Item	Description	Qty
1	Installation of 315mm pipe	9517m
1	Chlorination required	
1	River Maigue Crossing	

4.3.1 Chlorination and De-Chlorination Process

Chlorination

1. Prior to chlorination, the pipeline will undergo pressure testing to verify that there are no leaks.
2. The chlorination process of the 9.2 km trunk main from Croom towards Adare involves the controlled introduction of chlorine to the pipeline to disinfect it and ensure that it meets safe water quality standards before being placed into service.
3. The chlorination will commence on the N20 and the column of chlorinated water will move through the pipeline towards the Resevoir in Adare. The chlorine will be fed into the line using a dosing pump set at the required rate of 5L/hr. The amount of water flowing into the line will be recorded using the dosing arrangement pictured below.
4. It is proposed to use a 14% concentration of Sodium Hypochlorite to dose the line to achieve a concentration of 20ppm as per the works requirements.
5. Filling shall continue until such time as chlorinated water is received at Adare reservoir from the hydrant within the site at which point each section of pipework shall have had 24hr contact time. De-chlorination process noted below.

De-Chlorination

1. The chlorinated water will be dechlorinated prior to discharge to avoid pollution of natural waters and artificial watercourse's. This is standard procedure for a project of this nature to safeguard local environments and is not intended as a mitigation measure for the nearby Lower River Shannon SAC.
2. The chlorine in the water will be neutralised by a chemical called Sodium Bisulphite. Neutralisation dosing will be carried out in the same manner as the chlorine dosing. The Sodium Bisulphate shall be dosed into a towable water tanker/IBC tank.

3. Samples shall be taken to determine the level of free chlorine available in the main. From this, the required dose rate shall be set on the pump so that suitable neutralisation has taken place. Samples shall be taken throughout the scouring process to ensure all chlorine is neutralised as it leaves the pipe.
4. These samples shall be read using a Chlorine Test Kit.
5. The quantity of Sodium Bisulphite required to neutralise 20ppm of sodium hypochlorite is calculated using the molecular weights of the different compounds.
6. Once neutralised, the dechlorinated water will be discharged through the existing run to waste at the resevoir which has the capacity to deal with the volumes required which will be approximately 20m3 per hour.

4.4. Works, Site Characteristics And Risks To The Environment

The principal risks posed from the project proposal relate to loss or disturbance of habitat and reduction of water quality in the River Maigue and Dunnaman. No Annex I or otherwise designated habitats occur within the footprint of the proposed works. Two qualifying interests of two Natura 2000 sites were found to occur here. These will be further assessed in section 5.

4.5. Nearby Designated Sites

The nearest designated sites to the works area are listed below along with distances of the designated sites to the proposed site of works.

Table 4. List of designated sites in the vicinity of the proposed works site

	Site Name & Designation	**Distance**
1	Lower River Shannon SAC - 002165	3.4 km
2	Curraghchase Woods SAC - 000174	5.1 km
3	Askeaton Fen Compex SAC – 002279	7.6 km
4	Tory Hill SAC - 000439	3.2 km
5	River Shannon and River Fergus Estuaries SPA - 004077	8.6 km

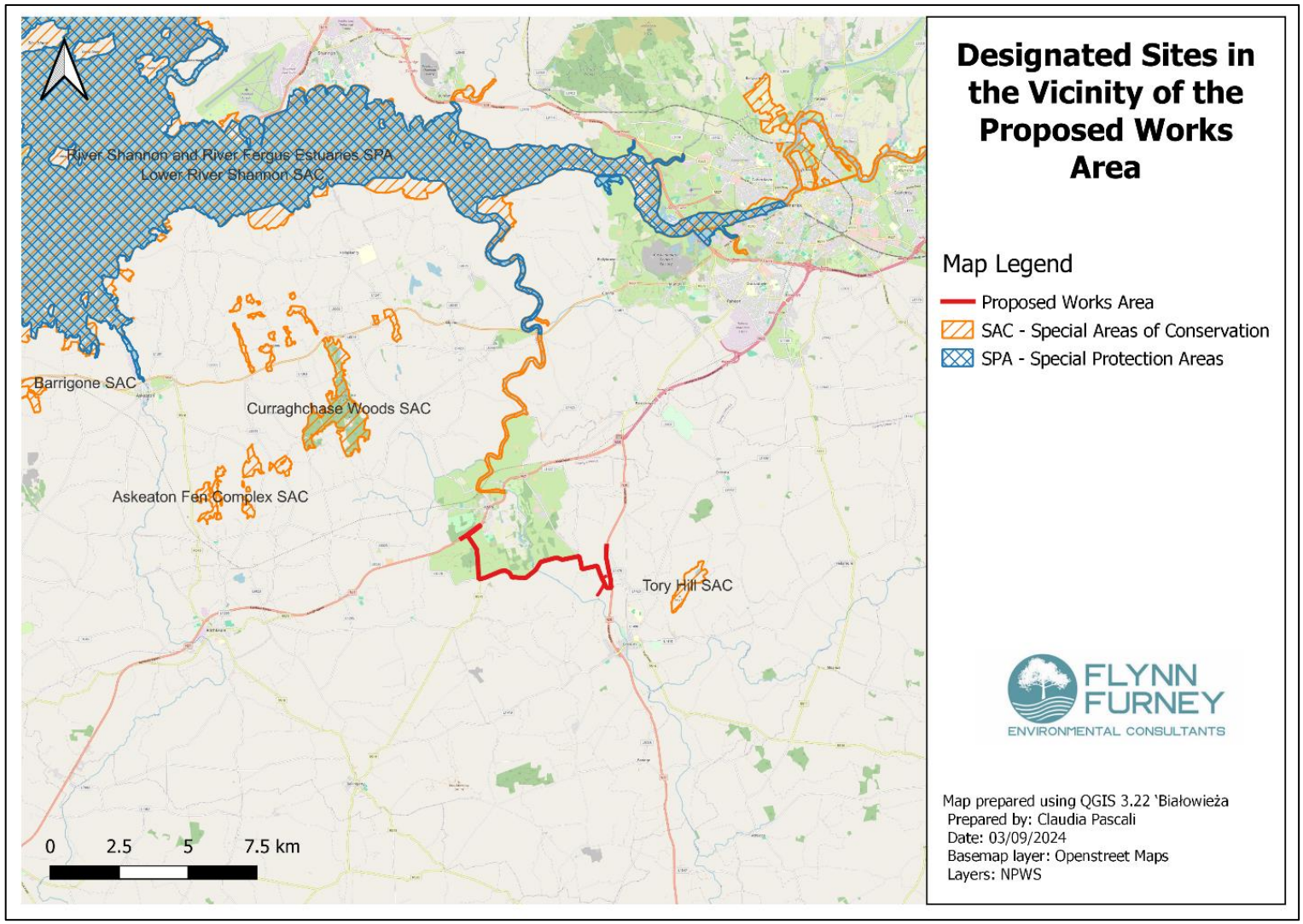

Figure 6. Proximity of the works to the nearby Designated Sites.

Table 5. Designated Sites near the proposed project.

Site Name	Qualifying Interests (* denotes a priority habitat)	Distance (km)	Source-Pathway-Receptor Link	Rationale
Lower River Shannon SAC - 002165	• Sandbanks which are slightly covered by sea water all the time [1110] • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons [1150] • Large shallow inlets and bays [1160] • Reefs [1170] • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] • Molinia meadows on calcareous,	3.4	A source-pathway-receptor link exists at the River Maigue crossing point. The river flows into waters of the Mouth of the Shannon, where this SAC is located.	As connectivity between the proposed works area and the designated area was identified at River Maigue crossing, possible impacts to this SAC will be assessed further in section 5.

	peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] • Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] • Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] • Petromyzon marinus (Sea Lamprey) [1095] • Lampetra planeri (Brook Lamprey) [1096] • Lampetra fluviatilis (River Lamprey) [1099] • Salmo salar (Salmon) [1106] • Tursiops truncatus (Common Bottlenose Dolphin) [1349] • Lutra lutra (Otter) [1355]			
Curraghchase Woods SAC - 000174	• Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] • Taxus baccata woods of the British Isles [91J0] • Vertigo moulinsiana (Desmoulin's Whorl Snail) [1016] • Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	5.1	No source-pathway-receptor links and no risk of a likely significant effects identified, either alone or in combination with other plans or projects.	Lack of connectivity between the proposed works area and the designated area. No works or activities proposed could conceivably impact upon the species or the habitats described in the qualifying interests of the Natura 2000 site, due to distance (bats normally forage within 2.5km of their roosts) and no requirement for vegetation removal.

Askeaton Fen Compex SAC – 002279	• Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] • Alkaline fens [7230]	7.6	No source-pathway-receptor links and no risk of a likely significant effects identified, either alone or in combination with other plans or projects.	Lack of connectivity between the proposed works area and the designated area. No works or activities proposed could conceivably impact upon the species or the habitats described in the qualifying interests of the Natura 2000 site.
Tory Hill SAC - 000439	• Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] • Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] • Alkaline fens [7230]	3.2	No source-pathway-receptor links and no risk of a likely significant effects identified, either alone or in combination with other plans or projects.	Lack of connectivity between the proposed works area and the designated area. No works or activities proposed could conceivably impact upon the species or the habitats described in the qualifying interests of the Natura 2000 site, due to distance, nature of works and its location being upstream of proposed works.
River Shannon and River Fergus Estuaries SPA - 004077	• Cormorant (Phalacrocorax carbo) [A017] • Whooper Swan (Cygnus cygnus) [A038] • Light-bellied Brent Goose (Branta bernicla hrota) [A046] • Shelduck (Tadorna tadorna) [A048] • Wigeon (Anas penelope) [A050] • Teal (Anas crecca) [A052] • Pintail (Anas acuta) [A054] • Shoveler (Anas clypeata) [A056] • Scaup (Aythya marila) [A062] • Ringed Plover (Charadrius hiaticula) [A137] • Golden Plover (Pluvialis apricaria) [A140]	8.6	A source-pathway-receptor link exists at the River Maigue crossing point. The river flows into waters of the Mouth of the Shannon, where this SAC is located.	Hydrological connectivity exists between the proposed works area and the designated area identified at River Maigue crossing. As a Cormorant was observed during the field survey, possible impacts to this particular QI will be assessed further in section 5. As for the remaining QIs, no other species was observed in the proposed works area. Considering the extent of the hydrological pathway between the works area and the designated site, the dilution capacity within the receiving SPA, and the limited scale and duration

	• Grey Plover (Pluvialis squatarola) [A141] • Lapwing (Vanellus vanellus) [A142] • Knot (Calidris canutus) [A143] • Dunlin (Calidris alpina) [A149] • Black-tailed Godwit (Limosa limosa) [A156] • Bar-tailed Godwit (Limosa lapponica) [A157] • Curlew (Numenius arquata) [A160] • Redshank (Tringa totanus) [A162] • Greenshank (Tringa nebularia) [A164] • Black-headed Gull (Chroicocephalus ridibundus) [A179] • Wetland and Waterbirds [A999]			of works, it is determined that there will be no significant impact on water quality that could adversely influence the remaining Qualifying Interests (QIs) for which this site is designated. Furthermore, dedicated bird surveys are not deemed to be required due to distance from the Natura 2000 site of river crossing works, short duration of river crossing works (4 weeks) and low habitat suitability for ex-situ QI's as this area is intensively farmed. If any QI's were to opportunistically utilise the area, an abundance of similar habitat is present within the surrounding environs and they are likely habituated to certain levels of disturbance due to agricultural activities and nearby traffic.

It must be noted that there may be inaccuracies with some of the boundaries of Designated Sites on NPWS digital mapping, therefore the SAC and SPA boundaries used for this assessment are interpreted based on available data.

The Lower River Shannon SAC is the Natura 2000 site closest to the proposed works at the River Maigue crossing. Potential connectivity was identified between this designated site and the proposed site of works. There is thus a potential pathway for impacts. It is considered extremely unlikely that the proposed development could impact upon this designated site. However, to ensure all possible impacts are screened for and to ensure that the precautionary principle is adhered to, this site is considered further in this screening exercise.

A detailed specific assessment of possible effects to this Natura 2000 site from the proposed development is provided in section 5. No risk to the conservation objectives of any other Natura 2000 designated sites is considered likely due to one or more of the following:

- Lack of connectivity between the works areas and any designated area
- Distance between the designated area and the works area and/or;
- No likely significant change to chemical or physiological condition of any designated site as a result of the proposed development.

<u>These other sites are therefore not considered further in this screening exercise.</u>

5. Further Assessment of Relevant Designated Sites

The above initial screening has identified one SAC (Lower River Shannon) as requiring further consideration in this assessment. The potential for impacts on the conservation interests of these sites arising from the proposed works is assessed in the following table:

Table 6. Further assessment of relevant designated sites

Assessment of Potential for Impacts on qualifying interests of Lower River Shannon SAC			
Qualifying Interest/Conservation Objective	**Relevant to Proposed Works**	**Potential for Impacts**	**Rationale**
Sandbanks which are slightly covered by sea water all the time [1110]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Estuaries [1130]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no

			significant impact on water quality that could adversely influence this QI.
Mudflats and sandflats not covered by seawater at low tide [1140]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Coastal lagoons [1150]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Large shallow inlets and bays [1160]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment.

			• Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Reefs [1170]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Perennial vegetation of stony banks [1220]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Salicornia and other annuals colonising mud and sand [1310]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.

Mediterranean salt meadows (Juncetalia maritimi) [1410]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	*No*	*Nil*	• This QI is described for three high conservation elements which occur within this SAC. Of these three sub-types, Triangular Club-rush (*Schoenoplectus triqueter*) is the only one for which a source-pathway-receptor link exists via the River Maigue crossing, as this element exists downstream of the project area, in the tidal reaches of the river. • This plant thrives where there are weakly brackish to freshwater conditions and large fluctuations in water levels (Rich & Fitzgerald, 2002). • The proposed project does not have potential for direct impacts on this QI as there is no spatial overlap between the habitat supporting this species and the proposed works area. • Indirect impacts to water quality that might affect the distribution of the species are not predicted due to the scope, scale and duration of the project, the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving environment. • Considering the limited scale and duration of the proposed works, it is determined that there will be no

			significant impact on water quality that could adversely influence this QI.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality that could affect this species are not predicted: the distribution of the Molinia Meadows are located upstream or without any hydrological connection, and hence they are not likely to be the recipient of any significant impact on water quality that could adversely influence this habitat. • Considering the limited scale and duration of the proposed works, the lack of connectivity, and the negligible potential for interaction with proposed works, it is determined that there will be no significant impact on this QI.
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this habitat as it does not occur within area proposed for development. • Indirect impacts to water quality that could affect this species are not predicted: the distribution of the Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsior* in this SAC is limited to locations situated upstream of the proposed works site, and hence they cannot be the recipient of any significant impact on water quality that could adversely influence this habitat. • Considering the limited scale and duration of the proposed works, the lack of connectivity, and the negligible potential for interaction with proposed works, it is determined that there will be no significant impact on water quality that could adversely influence this QI.

Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this species as it does not occur within area proposed for development. • Indirect impacts to water quality that could affect this species are not predicted: the distribution of *M. margaritifera* in this SAC is limited to River Cloon, in County Clare, which is located within a different catchment on the northern side of the Shannon estuary. • It therefore cannot be the recipient of any significant impact on water quality that could adversely influence this QI.
<u>Lamprey species:</u> Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099]	*No*	*Nil*	• It is considered the proposed project does not have potential for direct impacts on these species. • No gravel beds where these species may spawn are present at the river crossing point and instream works are not proposed, hence there is no spatial overlap between the spawning habitat supporting these species and the proposed works area. • Whilst silt beds which may support lamprey ammocoetes are present within close proximity to the crossing point, no impact to these is envisaged as instream works are not proposed and launch/receptor pits will be located in green field areas 50m back form the riverbank. • Pit areas are located at a lower elevation then the riverbank on both sides of the river, meaning run-off from the works area is not a concern. • An underground drain on the southern side of the river, which exits a concrete pipe, will be avoided in order to ensure silt laden water from proposed works does not enter it. • Indirect impacts to water quality are not predicted due to the nature of works: no direct in-stream works are planned as pipelines will be installed via HDD.

			• Potential for frack out is considered to be absent as drilling will occur 4m below the bed of the River Maigue. • Whilst chlorination of the pipeline is required post-works, it will be dechlorinated and tested prior to discharge through the existing run to waste at the reservoir in Adare which has the capacity to deal with the volumes required which will be approximately 20m3 per hour. • The Dunnaman watercourse will be crossed within the road over the culvert and it is considered there is no potential for any run-off from this works which would cause significant negative effects on the receiving environment. • Considering the above, the limited scale of proposed works and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence these QI.
Salmo salar (Salmon) [1106]	*No*	*Nil*	• It is considered the proposed project does not have potential for direct impacts on these species. • No gravel beds where these species may spawn are present at the river crossing point and instream works are not proposed, hence there is no spatial overlap between the spawning habitat supporting these species and the proposed works area. • Whilst holding habitat for adult salmon and low quality nursery habitat is present for juvenile salmon, no impact to these is envisaged as instream works are not proposed and launch/receptor pits will be located in green field areas 50m back form the riverbank. • Pit areas are located at a lower elevation then the riverbank on both sides of the river, meaning run-off from the works area is not a concern. • An underground drain on the southern side of the river, which exits a concrete pipe, will be avoided in order to ensure silt laden water from proposed works does not enter it.

			• Indirect impacts to water quality are not predicted due to the nature of works: no direct in-stream works are planned as pipelines will be installed via HDD. • Potential for frack out is considered to be absent as drilling will occur 4m below the bed of the River Maigue. • Whilst chlorination of the pipeline is required post-works, it will be dechlorinated and tested prior to discharge through the existing run to waste at the reservoir in Adare which has the capacity to deal with the volumes required which will be approximately 20m3 per hour. • The Dunnaman watercourse will be crossed within the road over the culvert and it is considered there is no potential for any run-off from this works which would cause significant negative effects on the receiving environment. • Considering the above, the limited scale of proposed works and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely influence these Qualifying Interest (QI).
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	*No*	*Nil*	• The proposed project does not have potential for direct impacts on this species as it does not occur within area proposed for development. • Indirect impacts to water quality that could impact on the critical habitat for this species are not predicted due to the extent of the hydrological pathway: the nearest distribution of critical habitat is approximately 17km downstream of the proposed works site. • Given that no direct in-stream works are planned as pipelines will be installed via HDD, and considering the substantial dilution capacity of the receiving marine environment, and the limited scale and duration of the proposed works, it is determined that there will be no significant impact on water quality that could adversely

			influence the habitat or the food availability for this Qualifying Interest (QI).
Lutra lutra (Otter) [1355]	*No*	*Nil*	• Evidence of Otter activity was noted during the field survey. However, holts were absent and couches were located more than 20m away from the proposed works area. The nearest couch was located 115m to the east and is screened by existing vegetation (hedgerow and riparian vegetation). • Mitigation is not required as it is not prescribed by the NRA guidelines for this distance and CIEEM guidelines advise 30m protection zones around couches. • Considering the nature of the works, which are small in scale and of short duration, no direct visual, noise or vibration disturbance on this species, which may affect foraging activity as a consequence of the proposed works, is envisioned as works will take place 50m from the watercourse and are likely less audible than frequent agricultural activities and nearby traffic. Furthermore, otter foraging activity is largely nocturnal. • Indirect impacts to water quality are not predicted due to the nature of works: no direct in-stream works are planned as pipelines will be installed via HDD, hence the proposed activities are not expected to significantly influence the habitat of this species or disrupt their activities along the River Maigue. • Therefore, the proposed project is not considered to have potential for direct impacts on this QI, its critical habitat, and its food availability.
Assessment of Potential for Impacts on Cormorant (Phalacrocorax carbo) [A017] in River Shannon and River Fergus Estuaries SPA			
Cormorant (Phalacrocorax carbo) [A017]	*No*	*Nil*	• While a Cormorant was observed during the survey, no roosting site were found within the surveyed area.

			• The conservation objective relative to this particular QI is that of "restoring the favourable conservation condition of Cormorant in this SPA" through consideration for the number of nesting sites and foraging sites available, as well as the disturbance levels at breeding sites and other areas connected to the colony, and the presence of barriers that might impact the access to foraging waters. • These attributes are limited to breeding cormorants, and as such do not apply as there is no spatial overlap between the breeding grounds and the proposed works area. • Indirect impacts to water quality that could affect this species and its food availability are not predicted due to the limited scale, duration of the proposed works and no requirement for instream works. • The works are not likely to cause a significant decrease in the range, timing or intensity of use of the designated area by cormorant other than that occurring from natural patterns of variation. • It is therefore determined that there will be no significant direct or indirect impact that could adversely influence this Qualifying Interest.
Whooper Swan (Cygnus cygnus) [A038] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052]	*No*	*Nil*	• Likely significant effects are not predicted for these QI's due to: • The distance from the Natura 2000 site of river crossing works • Short duration of river crossing works (4 weeks) • Low habitat suitability for ex-situ QI's as this area is intensively farmed. If any QI's were to opportunistically utilise the area, an abundance of similar habitat is present within the surrounding environs and they are likely habituated to certain levels of disturbance due to agricultural activities and nearby traffic.

Pintail (Anas acuta) [A054] Shoveler (Anas clypeata) [A056] Scaup (Aythya marila) [A062] Ringed Plover (Charadrius hiaticula) [A137] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Knot (Calidris canutus) [A143] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Redshank (Tringa totanus) [A162]			

Greenshank (Tringa nebularia) [A164] Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999]			

Given the nature of the QI's and the location of the proposed development, no meaningful impact source-pathway-receptor chain could be identified. There will be no direct impacts on the Lower River Shannon SAC and there will be no habitat loss or fragmentation as a result of the proposed development. No direct impacts on the habitats listed in the QI's are predicted as no habitat is immediately found within the works area. No direct impacts QI species are predicted as works areas contain no suitable habitat, with exception of Otter. However, while Otter habitat is present, no direct impact that might affect this species are predicted due to the nature of the works and absence of holts/couches within close proximity of the works area. No in-stream works are planned as pipelines will be installed via HDD, nor will work interfere with riparian otter habitat present as pits will be located 50m back from the riverbank. Otter couches present in the surrounding area are located within the distance allowed by NPWS guidelines (NPWS, 2009)[1], hence the proposed activities are not expected to significantly influence the habitat of this species or disrupt their activities along the River Maigue. Potential direct impacts are also not predicted for a series of reasons: firstly, some of the habitats and species listed within the QIs of this SAC occur in different catchments (i.e. Freshwater Pearl Mussel), hence making hydrological connectivity to the proposed works impossible. As for habitats and species that are located downstream of the proposed works area, the nature of works minimizes the impacts that may adversely influence these: not only no in-stream works will take place, but the fields where the launch pit and receptor pit will be located slopes away from the river, further reducing the risk of sediment flush. A low-level vegetated bund is also present along the western bank of the river, furthering limiting this risk. Launch pit and receptor pits will be located 50m from the banks.

Works are small in scale and of short duration (15 months overall and 4 weeks for the river crossing). Hence, no direct noise or vibration disturbance on QI's are envisioned as a consequence of the proposed works.

Finally, potential for indirect impact is considered whereby the project would result in a significant detrimental change in water quality either alone or in combination with other projects or plans as a result of indirect pollution of surface and ground water. As there are no in-stream works proposed, no bankside or banktop works required, general impacts to water quality from the construction phase of the project may therefore be ruled out. No changes to the hydrological conditions of the site may be expected as arising from the operation of the project. With no likely source of impact, no complete impact source-pathway-receptor chain could be identified.

[1] https://www.npws.ie/sites/default/files/publications/pdf/2009_Otter_TRP.pdf See also: https://www.tii.ie/media/wsmlbxmv/guidelines-for-the-treatment-of-otters-prior-to-the-construction-of-national-road-schemes.pdf

6. ARTICLE 6(3) SCREENING ASSESSMENT

This section of the report focuses solely on the potential for the proposed works to impact upon Natura 2000 sites. Section 4.5 of this report excluded any direct impacts or pathways for impacts on any Natura 2000 sites. This was based upon the proximity of the designated sites to the proposed development. The potential for impacts on the Natura 2000 sites is considered below.

6.1. Article 6(3) Assessment Criteria

6.1.1 Description of the individual elements of the project likely to give rise to impacts on the Natura 2000 site.

None of the individual elements of the proposed development as planned are likely to give rise to significant impacts on the Natura 2000 sites, given the limited scale of the works and location of the works as planned.

6.1.2 Description of any Likely Direct, Indirect or Secondary Impacts of the Project on the Natura 2000 Site.

Any likely direct, indirect or secondary impacts of the proposed development, both alone and in combination with other plans or projects, on any Natura 2000 sites by virtue of the following criteria: size and scale, land take, distance from the Natura 2000 site or key feature thereof, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operational and decommissioning phases of the works are detailed in the table below.

Table 7. Assessment of Likely Impacts.

Assessment of Likely Effects	
Size and scale	The proposed site has an approximate length of 9517m. Owing to size and scale of the proposed works there will be no impact on any Natura 2000 Sites.
Land-take	No works are proposed within any designated site. Works will not alter the size of any designated sites. Therefore land-take is nil.
Distance from the Natura 2000 site or key features of the site;	Lower River Shannon SAC (002165) is the nearest designated site at a distance of 2.6 km. The River Shannon and River Fergus Estuaries SPA (004077) is located at 8.6 km from the site.
Resource requirements (water abstraction etc.);	No materials are necessary for the purpose of the project. No water will be abstracted from the site during the construction or operation of the site. Hence, there will be no impact on the Natura site as a result of resource requirements.

Emissions (disposal to land, water or air);	There will be no additional emissions from the site. No emissions are predicted that will impact upon any Natura 2000 site. Noise will not be significant. No in-stream works are planned as pipelines will be installed via HDD, hence no discharges to surface water are envisioned. Moreover, the fields where the launch pit and receptor pit will be located slope away from the river, further reducing the risk of sediment flush. A vegetation bund is also present along the western bank of the river, furthering limiting this risk. Launch pit and receptor pits will be located 50m from the banks and the depth of drilling is 4m below the bed of the river.
Excavation requirements;	No excavations will take place within any Natura 2000 Site. Construction works will be entirely within area as identified in this reporting.
Transportation requirements;	Site has existing access via national road (N20), regional road (R519) and local road (L1420). No other means of access will be required during any phase of the project.
Duration of construction, operation, etc.;	Duration of works is 15 months overall and 4 weeks for the river crossing. However, these works are expected to be completed in Q4 of 2024.
Timing of works	2025 & 2026.
Cumulative or In-combination Impacts with other Projects and Plans	A number of other projects have been considered as part of the screening process. A search of National Planning Application Database and the Limerick County Council planning web portal was carried out on October 8th as part of this desktop study. A number of planning applications were reviewed; the greater majority of these related to the construction, demolition or alteration of private dwellings, particularly along L1420. The only project application retrieved for the area in proximity to the River Maigue crossing dated back to 2015, and related to the improvement of existing facilities at the Adare Manor Hotel and Golf Resort (App. Number. 15920). No other application in proximity of the crossing point was found for more recent years. No other application was considered for the purpose of this screening exercise. No application was found likely to create cumulative or in combination effects that will impact Natura 2000 sites.

6.2. Description of any Likely Changes to the Natura 2000 Sites

Any likely changes to the Natura 2000 site are described in the table below with reference to the following criteria: reduction of habitat area, disturbance to key species, habitat or species fragmentation, reduction in species density, changes in key indicators of conservation value and climate change.

Table 8. Likely changes to the Nature 2000 site.

Assessment of Likely Changes	
Reduction of habitat area	There will be no loss of habitat within any Natura 2000 site as a result of the proposed works.
Disturbance to key species	All works associated with the proposed development will take place outside the boundaries of the Natura 2000 sites. No loss of or impacts upon habitats of the qualifying interests of the nearest Natura 2000 site is predicted. Evidence of Otter activity was noted during the field survey. Considering the nature of the works, which are small in scale and of short duration, no direct noise or vibration disturbance on this species as a consequence of the proposed works is envisioned, nor will work interfere with riparian otter habitat present. Otter couches present in the surrounding area are located within the distance allowed by NPWS guidelines and holts were absent. Therefore, no significant impacts on any key species have therefore been considered likely.
Habitat or species fragmentation	There will be no works within any SAC or SPA. No impacts on any qualifying species are predicted. Therefore, there will be no impact within any Natura 2000 sites with regard to habitat or species fragmentation.
Reduction in species density	No reduction in species density is considered likely within any SAC or SPA as a result of the proposed works.
Changes in key indicators of conservation value (water quality etc.)	Habitat integrity is the most relevant of the key indicators of conservation value with regard to the nearest Natura 2000 site. The risk of any significant impacts on Habitat integrity within this site during the construction phase can be excluded due to nature of the works and absence of any direct connectivity with the development. There will be no impacts on any habitat areas outside the site.
Climate change	No damage to any Natura 2000 site as a result of or in combination with enhanced climate change is predicted as a result of the proposed development. A Climate Change Assessment was undertaken as part of the detailed design. An excerpt is as follows: The reduction in water loss from the rehabilitated watermain associated with this Work Order will go towards mitigating the effects of climate change by reducing emissions of carbon dioxide and other greenhouse gases associated with the water treatment and supply systems.

6.2.1 Likelihood of Interference with the key relationships that define the structure and function of the Natura 2000 site as a whole

It is not considered likely that the proposed development will interfere with any of the key relationships of any Natura 2000 site. It is considered that there will be no long-term residual impacts from the proposed works upon the key relationships that define any Natura 2000 sites.

6.2.2 Indicators of Significance as a Result of the Identification of Effects

Indicators of significance as a result of the identification of effects as set out below in terms of loss, fragmentation, disruption, disturbance and changes to the key elements of site.

Table 9. Indicators of significance.

Assessment of Likely Changes	
Loss	No loss of habitat or species of conservation interest is predicted as a result of the proposed works.
Fragmentation	No habitat fragmentation to any Natura 2000 site is predicted.
Disruption	No significant risk of disruption to any Natura 2000 sites are likely during this project.
Disturbance	No significant risk of disturbance to any Natura 2000 sites are likely during this project.
Changes in key elements of the site (water quality etc.)	No long term changes to any key elements of any Natura 2000 site are predicted as a result of the proposed development.

Description of any Likely Significant Impacts or Indeterminate Impacts of the Project on the Natura 2000 Site

Based on a consideration of the likely impacts arising from the proposed works and a review of their significance in terms of the conservation interests and objectives of the Natura 2000 Sites screened, no significant impacts have been identified on the Natura 2000 sites as a result of the proposed development.

6.3 Findings of Article 6(3) Screening Assessment

Name of project or plan:
Rationalization and construction of Rising Mains in Adare, County Limerick.

Name and location of Natura 2000 Site:
Works will take place between the localities of Adare and Croom, County Limerick. Lower River Shannon SAC (002165) is the nearest designated site at a remove of 2.6 km. Other Natura 2000 sites within 15km radius are Curraghchase Woods SAC (000174) located at 5.1 km from the site, Askeaton Fen Compex SAC (002279) located at 7.6 km from the site, Tory Hill SAC (000439) located at 3.2 km from the site, and River Shannon and River Fergus Estuaries SPA (004077) located at 8.6 km from the site.

Description of project or plan:
Works include the rationalization and construction of approximately 9517m of rising mains along L1420, R519, and N20. Site investigation will involve slit trenches and trial pits on the proposed route, with each one being excavated and backfilled in the same day. Replacement main sizes will be a minimum 315mm, 4.5MLD. Chlorination is likely to be required. Methodology for this is detailed in Section 4.3.1. Methodology for installing mains along the road will be open cut. The works are to cross the River Maigue upstream of the Lower River Shannon SAC. The water main will be installed through Horizontal Directional Drilling (HDD), with pipes installed approximately 4m below the riverbed. This method is suitable as local geological composition (pale limestone with calcite veins and clay infill of minor fissures) is not conducive to frack out. Launch pit and receptor pits will be located 50m from the banks, and measure approximately 25m^2 in area. An underground drain on the southern side of the river, which exits a concrete pipe, will be avoided in order to ensure silt laden water from proposed works does not enter it. Topsoil stripping will be required in this area and no other vegetation requires removal. Pit areas are located at a lower elevation then the riverbank on both sides of the river, meaning run-off from the works area is not a concern. Another small watercourse (Dunnaman) located to the west of the River Maigue will be crossed by open trench within the surface of the road over the culvert. The Dunnaman River exhibits high degrees of anthropogenic influence and was considered to be of a low ecological value.

Is the project or plan directly connected with or necessary to the management of the site?:
The project is not directly connected with or necessary to the management of any Natura 2000 site.

Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?:
On the basis that the proposed project will have no impacts on any Natura 2000 sites and no other project or plan that could have significant effects has been identified, no cumulative or incombination impacts are predicted.

6.3.1 Assessment of Significance of Effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site:
The proposed project will not significantly affect any Natura 2000 sites. Works and operation of the fence replacement will not impact the site's conservation objectives for the following Natura 2000 sites:
Lower River Shannon SAC (002165);
Curraghchase Woods SAC (000174);
Askeaton Fen Compex SAC (002279;
Tory Hill SAC (000439);
River Shannon and River Fergus Estuaries SPA (004077).
This is for the reasons outlined below:

Explain why these effects are not considered significant.
There will be no direct significant impacts upon the Natura 2000 sites as:

- No Natura 2000 sites occur within close proximity to the project site.
- Instream works are not proposed.
- Indirect impacts to water quality are not predicted due to the extent of the hydrological pathway between the works area and the designated site, and the substantial dilution capacity of the receiving marine environment.
- The majority of works are located along the local road network.
- The Dunnaman River will be crossed by laying the pipe in the road over the culvert.
- HDD will be used for crossing the River Maigue. Launch/receptor pits will be 50m back from the river and the depth of tunnelling will be 4m.
- Whilst chlorination of the pipeline is required post-works, it will be dechlorinated and tested prior to discharge through the existing run to waste at the reservoir in Adare which has the capacity to deal with the volumes required which will be approximately 20m3 per hour.
- Otter holts are absent within close proximity to the river crossing. Couches were located 115m from the works area and are not predicted to be impacted by works due to distance, screening from existing vegetation and habituation to anthropogenic influences.
- Impacts on QI's of the River Shannon and River Fergus Estuaries SPA are niot predicted due to distance from the Natura site, short duration of river crossing works, low habitat suitability, habituation to the area's existing anthropogenic influences and abundance of similar habitat nearby should any QI's opportunistically utilise the immediate works area.
- No operational impacts of the completed works are envisaged as works are designed to reduce pressure on the local water network.

Indirect impacts upon the Natura 2000 Site:
No indirect impact to the aforementioned Natura 2000 sites are predicted for the reasons outlined below:

Explain why these effects are not considered significant.

• No significant changes in the chemical or physical composition of the SAC or SPA are likely as a result of the development or operation of the proposed development.

• No significant impacts to habitats or species upon which any of the qualifying interests of the SAC or SPA rely upon will be impacted upon as a result of the proposed development.

Cumulative or in-combination impacts:

As no direct or indirect impacts have been identified, no cumulative or in-combination impacts are therefore possible.

6.4 Data collected to carry out the assessment.

The following sources of data were employed:

• Environmental Protection Agency mapping database
• National Biodiversity Data Centre databases
• Historical OSI Maps
• NPWS protected species database and online mapping
• Limerick County Council Planning Database (ePlan)

Level of assessment completed.

• Desk Study
• Site visit & Surveys in September and October 2024
• JNCC Phase 1 Habitat Assessment
• Fossitt Level III Habitat Recording

Overall Conclusions

In view of the best and objective scientific knowledge and in view of the conservation objectives of the European sites reviewed in the screening exercise, the proposed development as described here, individually/in combination with other plans and projects (either directly or indirectly) is not likely to have any significant effects on any of the European sites.

In order to protect Qualifying Interests of the Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA, mitigation is not required.

Therefore, it is recommended that Appropriate Assessment is not required.

7. References

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester. https://cieem.net/wp-content/uploads/2019/02/Combined-EclA-guidelines-2018-compressed.pdf

https://cieem.net/wp-content/uploads/2019/07/natural-information-otters-and-development-2011.pdf

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

Environmental Protection Agency, Appropriate Assessment Tool: https://gis.epa.ie/EPAMaps/AAGeoTool

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

Geological Survey of Ireland (accessed 2024) Maps and Data: https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx

JNCC (2010) Handbook for Phase 1 Habitat Survey. Joint Nature Conservation Committee, Peterborough, UK.

Limerick County Council Planning Web Portal (Accessed September 2024). https://maps.limerick.ie/planningenquiry

National Biodiversity Data Centre (accessed September 2024) Biodiversity Maps: https://maps.biodiversityireland.ie/

National Planning Application Map Viewer: https://myplan.ie/national-planning-application-map-viewer/

National Roads Authority (2009) Ecological Surveying Techniques for Protected flora and fauna during the Planning of National Road Schemes. NRA (now Transport Infrastructure Ireland), Dublin.

NPWS (2009) Threat Response Plan: Otter (2009-2011). National Parks & Wildlife Service, Department of the Environment, Heritage & Local Government, Dublin.

Rich, T.C.G., Fitzgerald, R., 2002. Life cycle, ecology and distribution of Schoenoplectus triqueter (L.) Palla (Cyperaceae), Triangular Club-rush, in Britain and Ireland. Online, available at: https://archive.bsbi.org.uk/Wats24p57.pdf

Scannell, M J P and Synott, D M, 1987, Census Catalogue of the Flora of Ireland. Stationary Office, Dublin.

Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E., 2011. Best practice guidance for habitat survey and mapping. The Heritage Council: Ireland.

Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016) Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

8. Appendices

Appendix 1 - Photos

Figure 7. River Maigue crossing point

Figure 8. West bank of River Maigue, at receptor pit location. Note vegetation bund present.

Figure 9. Otter spraint located at couch.

Appendix 2. River Crossing Layout Drawing

Figure 10. Details of works at Maigue crossing point

Appendix 3. NBDC Records

National Biodiversity Data Centre

Species list for a User-Defined Polygon (Within)

Quality of information

The National Biodiversity Data Centre makes every effort to ensure the quality of the information available on this website and updates the information regularly. Before relying on the information on this site, however, users should carefully evaluate its accuracy, currency, completeness and relevance for their purposes. The National Biodiversity Data Centre cannot guarantee and assumes no legal liability or responsibility for the accuracy, currency or completeness of the information.

To assist the Centre in the provision of high quality information, should you identify an error in any of the information provided, please notify the Centre and every effort will be made to rectify the error.

ƒ

Feature name	Species group	Species name	Record count	Date of last record	Title of dataset	Designation
Custom	insect - moth	Death's-head Hawk-moth (Acherontia atropos)	1	25/09/1930	Moths Ireland	
Custom	insect - moth	Mottled Beauty (Alcis repandata)	1	06/07/1993	Moths Ireland	
Custom	terrestrial mammal	Bank Vole (Myodes glareolus)	1	29/07/2012	Atlas of Mammals in Ireland 2010-2015	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species

Custom	terrestrial mammal	Eurasian Pygmy Shrew (Sorex minutus)	1	29/07/2012	Atlas of Mammals in Ireland 2010-2015	Protected Species: Wildlife Acts
Custom	terrestrial mammal	Irish Stoat (Mustela erminea subsp. hibernica)	1	25/07/2024	Irish Stoats of Ireland	