

EIAR SCREENING ASSESSMENT

**PROPOSED REHABILITATION WORKS,
MOONE VILLAGE BRIDGE, CO. KILDARE**

PROJECT NO. K470

DECEMBER 2021



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



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<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1 INTRODUCTION.....	1
1.1 Project Contractual Basis & Parties Involved	1
1.2 Study Area	1
1.3 Surrounding Land Use	2
1.4 Project Description	3
1.5 Project Objectives.....	3
1.6 Methodology and Approach	4
1.7 Scope of Works	4
1.8 Limitations	5
2 EIA SCREENING PROCESS	6
2.1 Introduction	6
2.2 EIA Applicable Legislation.....	6
2.3 Mandatory EIAR Review.....	6
3 CHARACTERISTICS OF PROPOSED DEVELOPMENT	9
3.1 Size and Design.....	9
3.2 Cumulative Impacts with other Existing Developments/Development the subject of a Consent.....	9
3.3 The Nature of any Associated Demolition Works	10

3.4	The Use of Natural Resources, in Particular Land, Soil, Water and Biodiversity	
		10
3.5	Production of Waste	10
3.6	Pollution and Nuisances	10
3.7	The Risk of major Accidents and/or Disasters including those caused by Climate Change	10
3.8	Risks to Human Health – e.g. Water Contamination/Air Pollution.....	11
4	LOCATION OF THE PROPOSED DEVELOPMENT	12
4.1	Information Sources	12
4.2	Abundance, Availability, Quality, and Regenerative Capacity of Natural Resources	12
4.3	The Absorption Capacity of the Natural Environment	12
4.3.1	Surrounding Land Use	13
4.3.2	Site Development	13
4.3.3	Site Physical Setting.....	15
4.3.4	Biodiversity	15
4.3.5	Topography.....	16
4.3.6	Unconsolidated Geology.....	16
4.3.7	Geology	16
4.3.8	Area of Geological Interest.....	17
4.3.9	Aquifers	18
4.3.10	Groundwater Vulnerability	19
4.3.11	Groundwater Recharge.....	20
4.3.12	Wells & Springs.....	22
4.3.13	Hydrology	22
4.3.14	Radon	24

4.3.15	Protected Structures.....	24
4.3.16	Nearby Site Investigations.....	25
4.3.17	Summary of the Physical Site Setting	26
5	TYPES AND CHARACTERISTICS OF POTENTIAL IMPACTS	28
5.1	Magnitude and Spatial Extent of Impact	28
5.2	The Nature of the Impact.....	28
5.3	The Transboundary Nature of the Impact	28
5.4	The Intensity and Complexity of the Impact	28
5.5	The Probability of the Impact.....	28
5.6	Expected Onset, Duration, Frequency and Reversibility of the Impact	28
5.7	Potential Cumulative Impacts.....	29
5.8	The Possibility of Effectively Reducing the Impact	29
5.9	Screening Decision.....	29

1 INTRODUCTION

1.1 Project Contractual Basis & Parties Involved

This report has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) at the request of their Client, Kildare County Council. Kildare County Council propose remediation works to the Moone bridge over the Timolin stream. The study area for assessment is on the L8102 at the northern end of Moone village in Co. Kildare.

This report has been prepared on behalf of Kildare Council Council in relation to proposed rehabilitation works at Moone village bridge where approval under s.177AE is required. Previously projects such as these projects have been dealt with by local authorities under s.179 of the Planning and Development Act (as amended) and Part 8 of the Planning and Development Regulations, 2001 (as amended). The purpose of this report is to determine whether the project requires the preparation of an Environmental Impact Assessment Report (EIAR). This report documents the screening completed to provide a summarised overview of the potential impacts on the receiving environment whilst taking cognisance of the relevant statutory requirements.

A Stage 1 Screening for Appropriate Assessment has also been prepared (Ecofact, 2021). A Stage 1 Screening exercise assesses the likely significant effects of the development on Natura 2000 sites within the zone of influence of the proposed project. The Screening exercise has determined that the project requires the preparation of a Natura Impact Statement (NIS). OCSC have undertaken an NIS (OCSC, 2021).

This report was completed by Glenda Barry, Principal Environmental Consultant with OCSC. The report was reviewed and approved by Eleanor Burke who is the OCSC Environmental Division Manager. The Project Director is Brian Heron, Chartered Engineer and Associate Director with OCSC.

1.2 Study Area

The study area is located in Moone, County Kildare where there is a proposal requiring approval under s.177AE to undertake remediation works on the bridge located on the L8102 at the northern end of Moone village. The study area consists of a small, single-span stone bridge over the Timolin stream as shown in Figure 1.1.

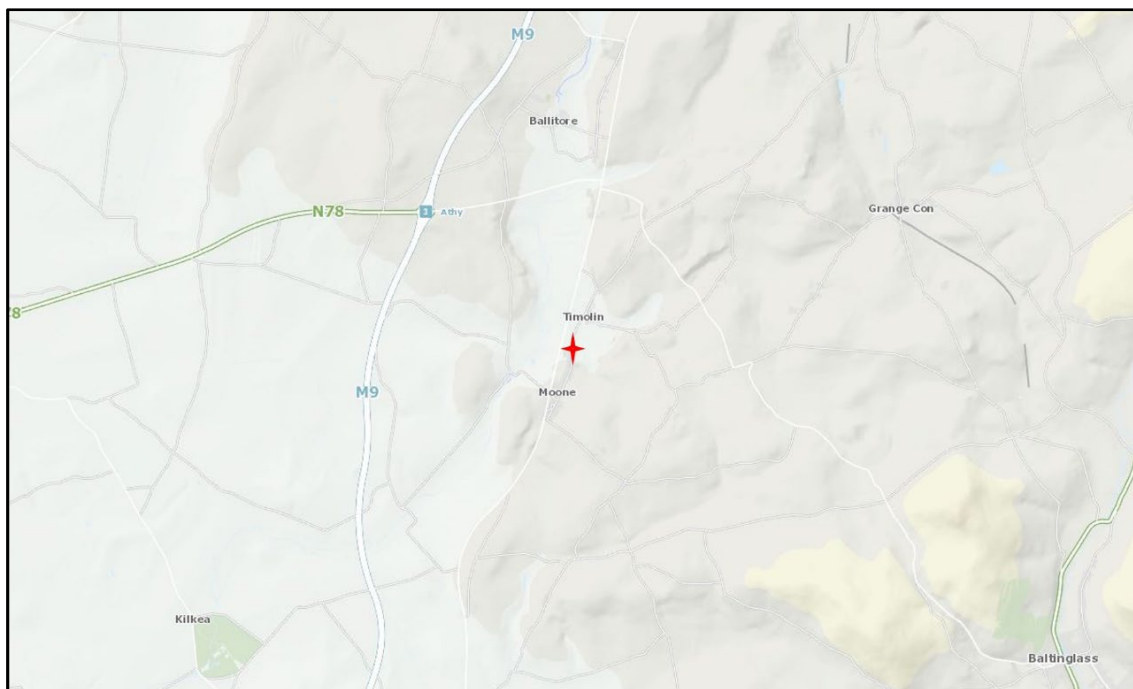


Figure 1.1: Study Area

1.3 Surrounding Land Use

The immediate surrounding area comprises residential and agricultural/horticultural land uses as shown in Figure 1.2. The site is bounded by residential and agricultural lands to the south, west, and east and by agricultural lands to the north. The Timolin stream trends east-west through the study area. Moone village lies to the south of the site and Timolin village to the north. Further to the west are the R448 and agricultural and forestry land. Further to the east are extensive agricultural lands. Refer to Table 1.1 for a full list of adjacent land uses.

Table 1.1 – Adjacent Land Uses

BOUNDARY	LAND USE
North	The L8102, agricultural land, and Timolin village
South	The L8102, residential land comprising Moone village, and agricultural land
East	Timolin stream, several residences, and agricultural land
West	Timolin stream, residences, the R448, and agricultural and forestry land

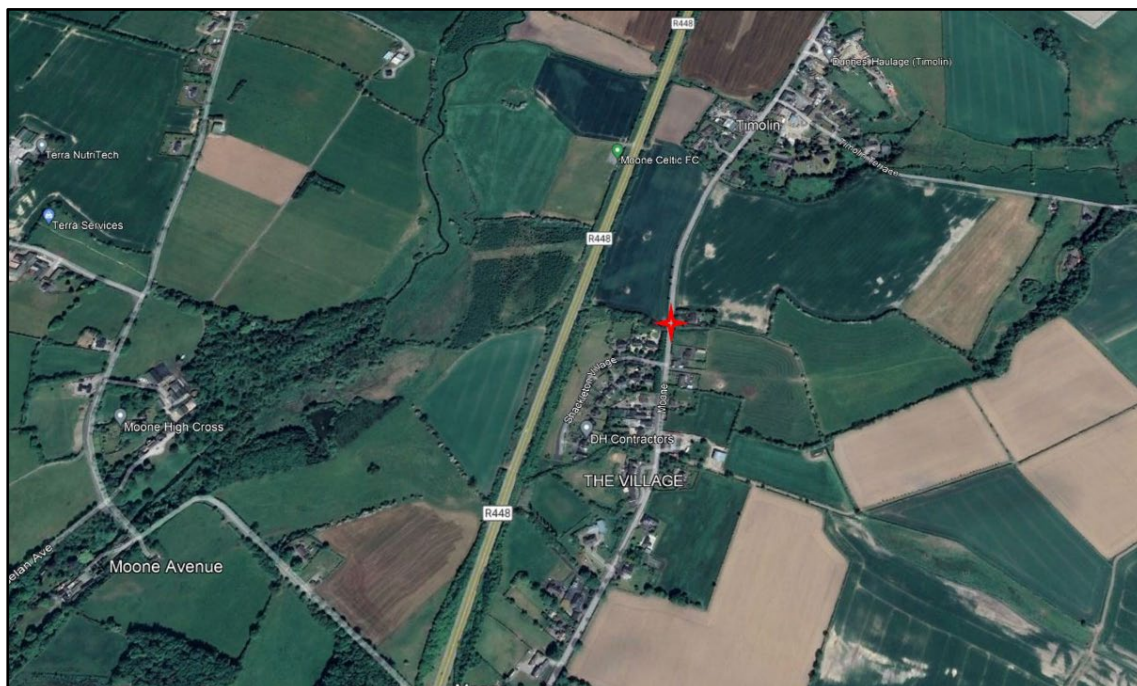


Figure 1.2: Surrounding landuse (Google 2021)

1.4 Project Description

This Environmental Impact Assessment Screening Report where there is a proposal is for remediation works to Moone Bridge requiring approval under s.177AE. It is an assessment of the general study area for the proposed project which is part of larger scale bridge rehabilitation programme being undertaken by Kildare County Council.

1.5 Project Objectives

The overall project objectives include:

- a description of the physical characteristics of the project;
- a description of the location of the project, with particular regard to the environmental sensitivity of geographical areas likely to be affected;
- description of the aspects of the environment likely to be significantly affected by the project; and
- a description of any likely significant effects, to the extent of the information available on such effects, of the project on the environment resulting from: a) the expected residues and emissions and the production of waste, where relevant and b) the use of natural resources, in particular soil, land, water and biodiversity.

1.6 Methodology and Approach

The methodology and approach used in the preparation of this report will follow:

- Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Irish Environmental Protection Agency, Draft Edition, August 2017.
- European Commission (2015) Environmental Impact Assessment – EIA, Over, Legal Context
- European Union EIA Directive (85/337/EEC) and its amendments in 1997, 2003 and 2009;
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment;
- Planning and Development Act 2000 (as amended);
- Planning and Development Regulations 2001 (as amended);
- Directive 2014/52/EU;
- Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems – Key Issues Consultation Paper (2017; DoHPCLG);
- Preparation of guidance documents for the implementation of EIA directive (Directive 2011/92/EU as amended by 2014/52/EU) – Annex I to the Final Report (COWI, Milieu; April 2017)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)
- Environmental Impact Assessment – Guidance for Consent Authorities regarding Sub-threshold Development (2003; DoEHLG)

Using the above documents it has been possible to carry out a desktop EIAR using the best available guidance and operating within the applicable legislation. The methodology employed in this assessment updates previous guidance in line with the new Directive 2014/52/EU.

1.7 Scope of Works

To meet the project objectives, the following scope of works were completed:

- Present a discussion of the current site status and key environmental influences around the site;
- Undertake and present a historical site and area review, primarily referring to old Ordinance Survey Ireland maps but utilising other sources as appropriate and readily available;
- Present a discussion of the general soil and groundwater conditions within the topographical and area context; and
- Present an overview if any significant negative environmental impacts can arise from the proposed project.

1.8 Limitations

This Environmental Impact Assessment Screening Report has been prepared for the sole use of Kildare County Council (“the Client”). No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by OCSC.

This assessment is based on a review of available historical information, environmental records, consultations, relevant guidance information and reports from third parties. All information received has been taken in good faith as being true and representative.

This report has been prepared in line with best industry standards. The methodology adopted and the sources of information used by OCSC in providing its services are outlined in this Report. The assessment undertaken by OCSC and described was undertaken in October 2021 and is based on the information available during that period. The scope of this Report and the services are accordingly factually limited by these circumstances.

OCSC disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to OCSC’s attention after the date of the Report.

The conclusions presented in this report represent OCSC’s best professional judgement based on review of the relevant information available at the time of writing. The opinions and conclusions presented are valid only to the extent that the information provided was accurate and complete.

The findings of the EIA screening assessment prepared for the project has informed our professional opinion as to whether an EIAR is warranted for the proposed project, with due regard to all relevant statutory requirements and technical guidance. However, it is ultimately the responsibility of the relevant planning authority to make a determination as to whether an EIAR is required for a particular project, based on screening conducted by the planning authority.

2 EIA SCREENING PROCESS

2.1 Introduction

This section of the report discusses the legislative basis for screening so as to decide whether or not the proposed project requires an Environmental Impact Assessment Report (EIAR) to be prepared. It also sets out the project in terms of planning context.

This project has been screened in accordance with Section 3.2 of the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports – Draft' (EPA, 2017), the Environmental Impact Directive (85/337/EEC) and all subsequent relevant amendments, Planning and Development regulations (2001-2018), including S.I. No. 296 of 2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, which came into operation on 1st September 2018.

2.2 EIA Applicable Legislation

Across the European Union, The Environmental Impact Assessment (EIA) Directive 85/337/EEC is in force since 1985 and applies to a wide range of defined public and private projects, which are defined in Annexes I (Mandatory EIA) and II (Screening-Discretion of Member States) of the directive. The EIA Directive of 1985 has been amended three times: 97/11/EC, 2003/35/EC, and 2009/31/EC. These amended directives have been coded and replaced by Directive 2011/92/EU of the European Parliament and Council on the assessment of the effects of certain public and private projects on the environment (and as amended by Directive 2014/52/EU). Directive 2014/52/EU have been transposed in 2018 in Irish law under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI 296 of 2018).

2.3 Mandatory EIAR Review

Annex I of the European Communities (EIA) Directive lists the activities for which a mandatory EIA is required. The proposed project is not listed in Annex I and, hence, it is not mandatory for an EIA to be carried out.

The proposed bridge rehabilitation is also not on the mandatory list of road projects requiring mandatory EIA as outlined in Section 50 of the Roads Act, 1993 (as amended) and in Article 8 of the Roads Regulations, 1994. The list of road projects requiring mandatory EIA is listed in Table 2.1.

Table 2.1 Roads Projects Requiring Mandatory EIA

MANDATORY THRESHOLD	REFERENCE
Construction of a Motorway.	S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007
Construction of a Busway.	S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007
Construction of a Service Area.	S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007
<p>Prescribed type of proposed road development:</p> <ol style="list-style-type: none"> 1. The construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 metres or more in length in an urban area. 2. The construction of a new bridge or tunnel which would be 100 metres or more in length. 	Article 8 of the Roads Regulations, 1994 (Road development prescribed for the purposes of S. 50(1)(a) of the Roads Act, 1993

Annex II of the Directive lists the activities for which each member state is permitted to exercise discretion to decide whether an EIA is necessary. The proposed works is not listed specifically on Annex II. It is also not listed on the sub-threshold development in Road Act, 1993 (as amended), and the Roads Regulations, 1994.

Sub-threshold EIS (123A.) 2, of the Planning and Development Regulations 2001 – 2015.

(g) a place or site which has been included by the Minister for Arts, Heritage and the Gaeltacht in a list 151 of proposed Natural Heritage Areas published on the National Parks and Wildlife Service website, the State authority shall, in determining whether the development would or would not be likely to have significant effects on the environment, have regard to the likely significant effects of the development on such site, area, land, place or feature as appropriate.

Where a project is listed on Annex II or is a development that is not exempted, the national authorities of the member state have to decide whether an EIA is needed for a proposed project. This is done by the "screening procedure", which determines the effects of projects on the basis of thresholds/criteria or a case by case examination. Annex III of the Directive outlines the specific criteria that must be taken into account when a sub-threshold project is being examined for Environmental Impact Assessment. The screening procedure investigates whether the project has significant negative impact on the environment using different criteria including:

- Characterisation of the proposed development

- Location of proposed development
- Type and Characteristics of the potential impact

The relevant information to be provided Information for the Purposes of Screening Sub-threshold Development for Environmental Impact Assessment include:

1. A description of the proposed development, including in particular—
 - (a) A description of the physical characteristics of the whole proposed development and, where relevant, of demolition works, and
 - (b) A description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected. 120 [296]
2. A description of the aspects of the environment likely to be significantly affected by the proposed development.
3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—
 - (a) The expected residues and emissions and the production of waste, where relevant, and
 - (b) The use of natural resources, in particular soil, land, water and biodiversity.
4. The compilation of the information at paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7”.

3 CHARACTERISTICS OF PROPOSED DEVELOPMENT

Schedule 7 of SI 296 of 2018 requires that the characteristics of proposed development are identified. In particular, it references the following sections:

3.1 Size and Design

The study area consists of a single-span, masonry arch structure spanning a total length of 2.5m over the Timolin stream on the L8102 at the north end of the village of Moone. The works are being undertaken as part of the Kildare County Bridge Remediation Programme for 2022.

A Preliminary Design Report (OCSC, July, 2021) indicated that the following defects were identified at the time of inspection:

- Vegetation requiring removal on footways, parapets, embankments, and spandrel walls;
- Waterproofing required to the masonry structure;
- Missing masonry requiring replacement on parapets and the arch barrel;
- Masonry requiring repointing on the spandrel walls, arch barrel, and parapets;
- Debris requiring removal on the embankments and the downstream riverbed; and
- Installation of fencing required to close off a field.

3.2 Cumulative Impacts with other Existing Developments/Development the subject of a Consent

Within the Kildare County Development Plan 2017-2023, there is the provision for additional residential development within both Moone and Timolin due to the zoning of lands for residential use. Neither village is currently served by a public wastewater treatment plant; therefore, additional residential development will potentially increase the risk to groundwater quality in the area.

A review was undertaken of Kildare County Council planning records for projects which are in receipt of a grant of planning within the last 7 years. A review of planning applications in the vicinity of the site and both up and down stream of the site indicated that planning permissions were granted primarily for private residences and associated outbuildings, alterations, and effluent treatment systems and for agricultural infrastructure such as slatted cattle sheds, slurry pits, and milking parlours. Permission was granted for an industrial facility, Nature's Oils Ltd., located approximately 4.7km south and downstream of the site for storage and processing of oils.

The proposed site works are of a short duration and designed to maintain and improve local vehicular and pedestrian traffic. Hence, no significant potential cumulative environmental impacts have been identified in relation to the proposed works, either during the construction or operational phases, arising from committed developments in the immediate vicinity.

3.3 The Nature of any Associated Demolition Works

The structure will not require demolition.

3.4 The Use of Natural Resources, in Particular Land, Soil, Water and Biodiversity

There will be no long-term use of any natural resource as this project by its very nature is of short-term duration and required to maintain vehicular and pedestrian traffic through the area.

3.5 Production of Waste

Any waste generated during the construction will firstly be reused on site where possible. Wastes requiring off-site disposal, e.g. vegetative wastes, debris, and wastes associated with masonry repairs, will be managed in accordance with all relevant waste management legislation. There will be no generation of waste following the completion of the works.

3.6 Pollution and Nuisances

There is the potential that there will be a temporary increase in noise during the proposed works. However, they will not exceed levels typical of construction works and will be short-term in nature. There will be a slight increase in traffic disturbance during the construction activities, i.e. bringing supplies to site, removal of waste materials, traffic management along the L8102 in the vicinity of the site. However, these will be short term in duration. Some dust will likely be generated during the works; however, this nuisance will be managed in line with best practice. There will be no pollution or nuisance during operations, i.e. following the completion of works.

Surface water pollution via runoff including that by silt, concrete products, or hydrocarbons is a potential source and pathway given the proposed works on the bridge spanning the Timolin River. The appointed contractor will need to prepare a site-specific Construction Environmental Management Plan (CEMP) which will clearly set out all of the required environmental control measures needed.

3.7 The Risk of major Accidents and/or Disasters including those caused by Climate Change

There is minimal risk of major accidents or disasters including those caused by climate change given the small-scale and temporary nature of the construction works. Any risks that are present are associated with typical construction risks including working with machinery. However, the appointed contractor will need to prepare a site-specific CEMP which will clearly set out all of the required environmental control measures needed.

There will be no risks following construction above that which would be expected for vehicular traffic.

3.8 Risks to Human Health – e.g. Water Contamination/Air Pollution

Contractors will be required to implement construction methods in line with best practice regarding items such as storage of fuel and chemicals on site and containment of wastes generated during remedial works to minimise the risks to surface and groundwater.

From a human health perspective, there are no reported source protection zones (SPZs) for groundwater within a 2km radius of the proposed site. The nearest SPZ is the Lipstown Narraghmore Group Water Scheme which is situated approximately 4.4 km northwest of the site. There are reportedly four wells within 1km of the site area. Three were drilled or dug prior to 1900, two for unknown uses and one as a public supply well (not identified as currently in use based on the SPZ). The fourth was drilled in 1973 for an unknown use.

Air pollution will be limited to typical construction nuisance such as dust given the short-term nature of the works and that the works will be conducted in accordance with best practice. The same best practice guidelines will be applied to noise nuisance. Overall, the risk to human health is low.

4 LOCATION OF THE PROPOSED DEVELOPMENT

4.1 Information Sources

An understanding of the site setting and history was gained by undertaking a review of the following primary sources including:

- A review of available extracts of historical Ordnance Survey of Ireland (OSI) maps;
- The National Monuments Service (NMS) viewer;
- A review of information held by the Environmental Protection Agency (EPA) EnVision online Mapping;
- Aerial images available of the site (OSI and Google);
- The Geological Survey of Ireland (GSI) and GeoHive online mapping tools; and
- The National Parks and Wildlife Service online map tool.

4.2 Abundance, Availability, Quality, and Regenerative Capacity of Natural Resources

Limited natural resources will be required to complete the works as this is a bridge rehabilitation project. Vegetative wastes can be removed to a composting facility. The relevant natural resources have been looked at in more detail in the following sections.

4.3 The Absorption Capacity of the Natural Environment

In the description of the site, the absorption capacity of the natural environment has, in accordance with Regulations, been screened paying particular attention to:

- (i) wetlands, riparian areas, and river mouths;
- (ii) coastal zones and the marine environment;
- (iii) mountain and forest areas;
- (iv) nature reserves and parks;
- (v) areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive;
- (vi) areas in which there has already been a failure to meet the environmental quality standards laid down in legislation of the European Union and relevant to the project, or in which it is considered that there is such a failure;
- (vii) densely populated areas; and
- (viii) landscapes and sites of historical, cultural or archaeological significance.

4.3.1 Surrounding Land Use

The terrestrial environment is characterized not only by its physical land cover, but also from a human/social perspective by its land use which is distinguished by its designated or identifiable purpose (EPA, 2008).

The immediate surrounding area is in residential and agricultural/horticultural land uses. The site is bounded by residential and agricultural lands to the south, west, and east and by agricultural lands to the north. The Timolin stream trends east-west through the study area. Moone village lies to the south of the site and Timolin village to the north. Refer to Section 1 for a full list of adjacent land uses. Other land in this locality is occupied by rivers, extensive agricultural lands, and scattered residential and forested land.

4.3.2 Site Development

A review of the OSI historical maps dataset does not clearly identify the bridge located on the site, but the mapping of an established road over the Timolin stream at that point would indicate that a bridge was likely present since at least the 1830's.

The 6" inch (1837-1842) as shown in Figure 4.1 indicates development associated with the villages of Timolin and Moone to the north and south of the site, respectively. The remaining lands surrounding the site were undeveloped and likely in agricultural use.

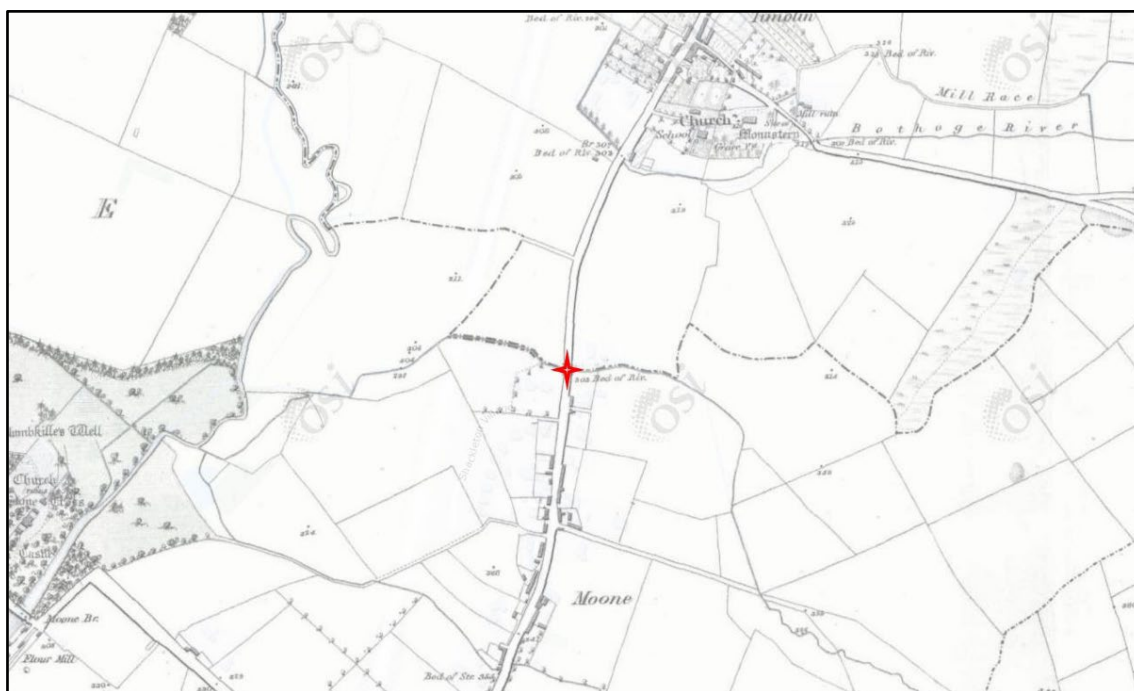


Figure 4.1: Study Area Location on 1837-1842 6-inch OS Map (Source: OSI, 2021)

The 25-Inch Map (1888-1913) map as shown in Figure 4.2 indicates limited additional development to the south of the site within Moone village.

residential construction immediately to the northeast and southwest of the site and the ongoing construction of the new R448 to the west of the site. The 2005 aerial photograph shows the completed R448 along with additional residential development to the southwest of the site, further south in the village of Moone, and in the village of Timolin. The Google Earth aerial photographs indicate further residential development to the southwest of the site by 2009 but little change in the surrounding area from then until 2021.

4.3.3 Site Physical Setting

Information regarding the site topography, hydrology, geology, hydrogeology, and ecology of the area has been obtained from records held by the Geological Survey of Ireland (GSI), Environmental Protection Agency (EPA) Envision online mapping tool, Ordnance Survey of Ireland (OSI), GeoHive, Water Framework Directive Maps, and National Parks and Wildlife Service (NPWS) databases.

4.3.4 Biodiversity

The Timolin stream flows through the site under the Moone bridge and westwards toward the River Greese. The proposed works to the site including waterproofing, replacing, and repointing masonry on the bridge create the potential for impact to the local surface waters from masonry debris and materials used in and during the bridge remediation such as cementitious products and petroleum hydrocarbons. The clearance of vegetation on and around the bridge and removal of debris around the bridge and in the riverbed create a potential for erosion of bare ground and/or sediment movement resulting from surface run-off and streambed disturbance during the construction phase.

An Appropriate Assessment (AA) Screening Report prepared by Ecofact Environmental Consultants concluded that, given the significant structural repairs required to the bridge, “there is a risk of water quality impacts, as well as disturbance and invasive species impacts arising from the works. These impacts could be transferred downstream to the designated SAC via the hydrological pathway or affect the qualifying interests of the SAC that have the potential to be present c. 500m downstream of the works in the River Greese.” OCSC completed a Natura Impact Statement (under separate cover) (OCSC, 2021).

There are 11 No. Natura 2000 sites within 15km of the proposed scheme: the River Barrow and River Nore Special Area of Conservation (SAC), the Slaney River Valley SAC, the Holdens Bog SAC, and eight proposed Natural Heritage Areas (pNHAs).

The Slaney River Valley and Holdens Bog SACs and three of the pNHAs are located within a separate water catchment to the site and/ or at a distance of 1.7km or greater in an upgradient direction from the site. The remaining pNHAs are located more than 10 km to the northwest, west, and southwest and not within direct hydrological connection to the site. As a result, none of these Natura 2000 sites are likely to be impacted by the proposed site works.

The Timolin stream, which flows through the site, is a tributary of the River Greese which, in turn, joins the River Barrow 13.2km southwest of the site. The River Barrow forms part of the River Barrow and River Nore SAC (Site Code 002162). Given the small-scale and short-term nature of the works and the distance from the site to SAC, no significant direct effects to the SAC are anticipated as a result of erosion and/or sedimentation.

However, due to this hydrological link between the site and the River Barrow and River Nore SAC, any works undertaken on the site may potentially indirectly impact the SAC. Therefore a NIS has been completed

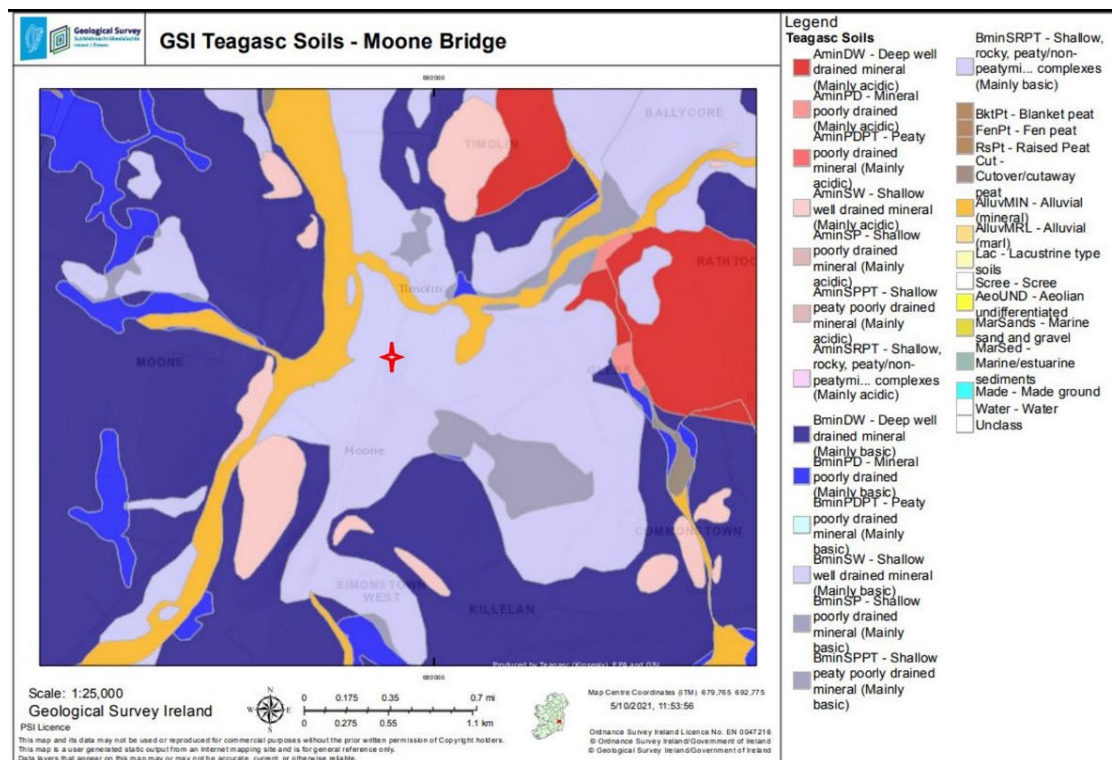
Overall, given the duration and scale of the works, it is unlikely that the project will give rise to any significant adverse effects on the biodiversity local to the site or within the SAC, either alone or in combination with any other plans or projects.

4.3.5 Topography

The topography of the regional area is varied with rolling hills to the north, east, and southeast of the site with a low lying area from Ballitore to the north to Moone in the south. Low lying areas occur to the west and southwest of the site, away from the foothills of the Wicklow Mountains.

4.3.6 Unconsolidated Geology

The topsoils on the site are comprised of shallow, well-drained, mainly basic mineral soils as shown on Figure 4.4.



4.3.7 Geology

The site is underlain by the Silurian Carrighill Formation, which is comprised of calcareous greywacke siltstone and shale as shown in Figure 4.5.

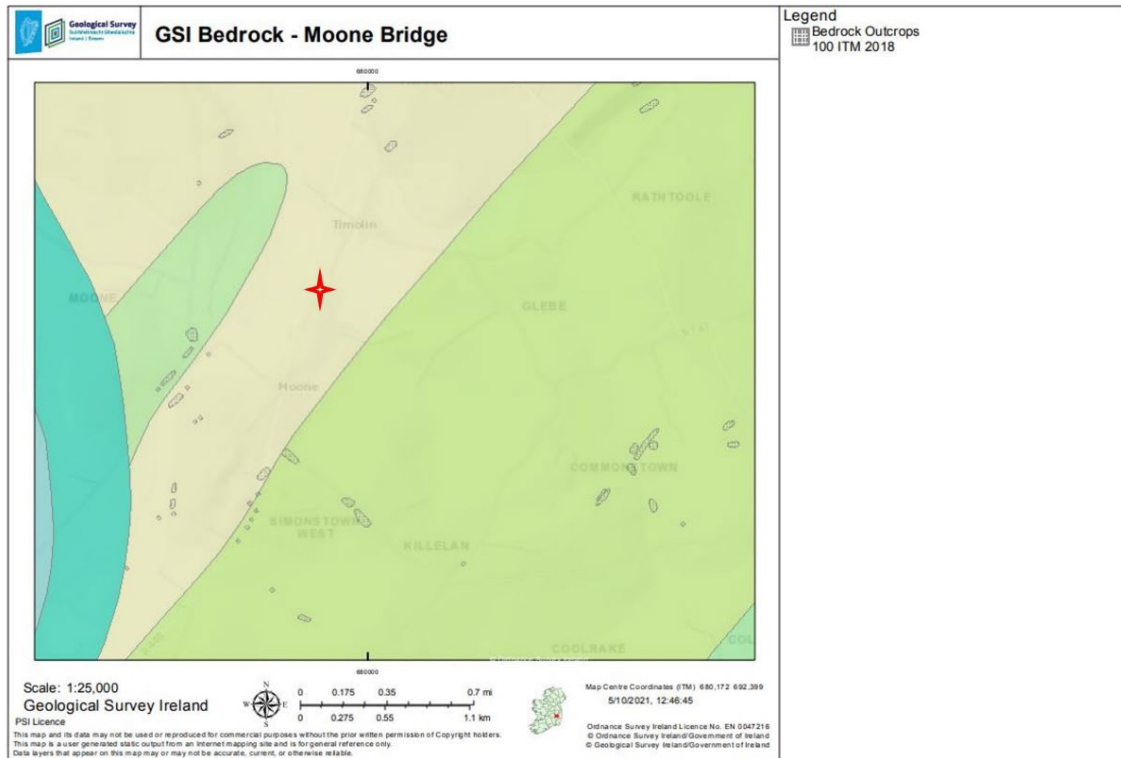


Figure 4.5: Bedrock 100k (approximate site location indicated by red star) (Source: GSI, 2021)

4.3.8 Area of Geological Interest

The GSI online mapping service was consulted regarding areas of geological interest in the area of the site. The nearest area of geological interest is the Manger-Saundersgrove site, which is located 7.7km east of the site. The Manger-Saundersgrove site (site code WW046) is designated a County Geological Site (CGS) and includes ‘a number of elevated fields under pasture. The fields comprise a ‘delta’ feature composed of deep glaciofluvial and glaciolacustrine sediments.’ The second nearest area of geological interest is Hollymount (site code LS015), which is 14.8km southwest of the site. Hollymount is designated as a CGS and recommended for Geological Natural Heritage Area due to ‘deposit[s] of Miocene-Pliocene (Neogene) age which is exceedingly rare in the country’. Given the distance between the site and the two nearest areas of geological interest, these areas are not considered to be within the area of influence of the proposed site works. Geological heritage sites are shown in Figure 4.6.

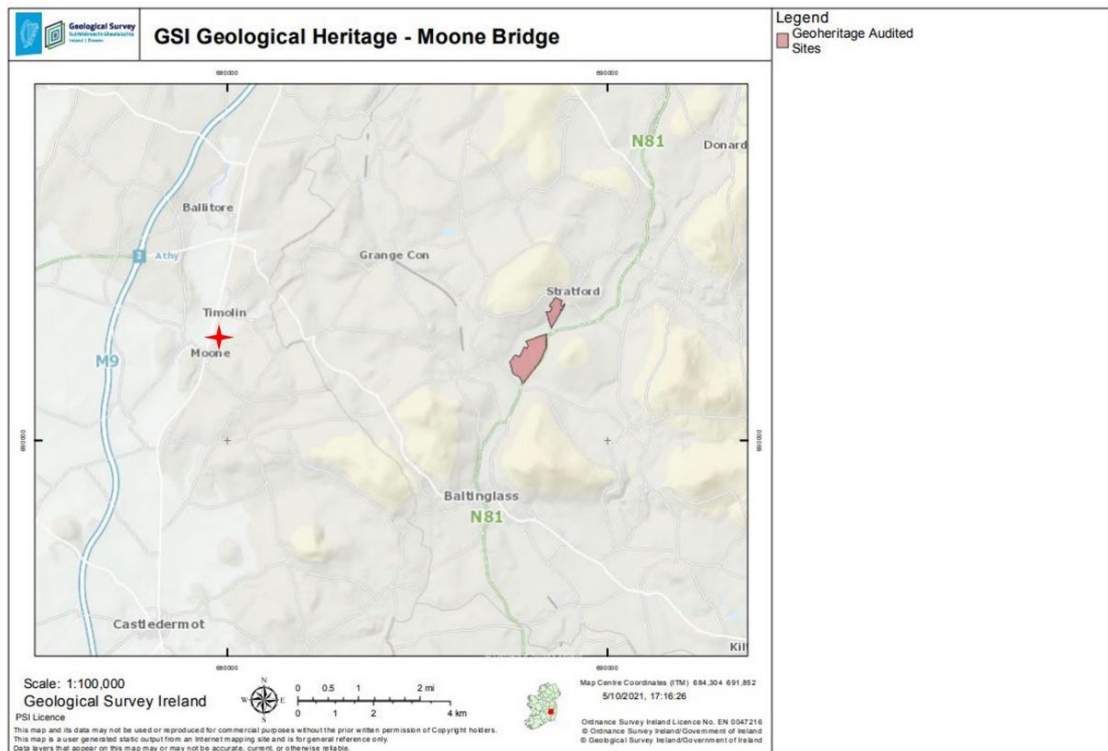


Figure 4.6 Approximate location of the site (indicated by red star) area and the nearest Geological Heritage sites (Source: GSI, 2021)

4.3.9 Aquifers

The GSI provides a methodology for aquifer classification based on resource value (Regionally Important, Locally Important, and Poor) and vulnerability (Extreme, High, Moderate, or Low). Resource value refers to the scale and production potential of the aquifer whilst vulnerability refers to the ease with which groundwater may be contaminated by human activities (vulnerability classification primarily based on the permeability and thickness of subsoils). The site lies above a Poor (Pu) bedrock aquifer, which is generally unproductive as shown in Figure 4.7.

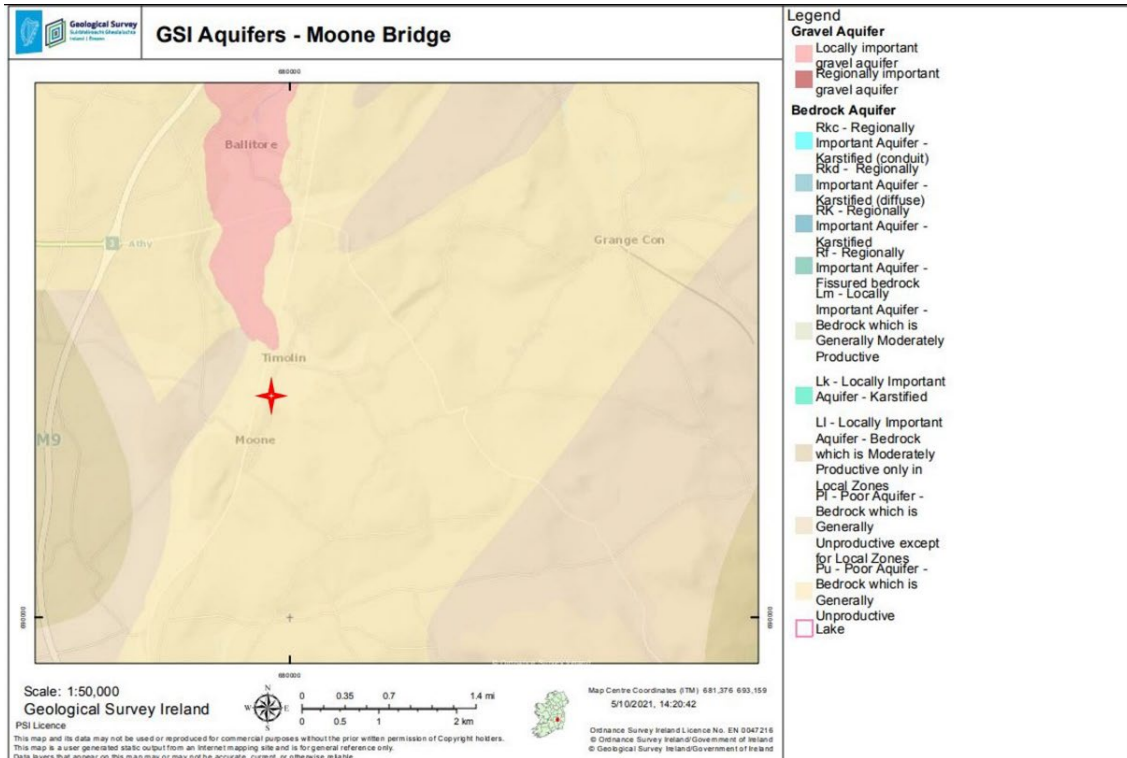


Figure 4.7: Aquifers (approximate site location indicated by red star) (Source: GSI, 2021)

4.3.10 Groundwater Vulnerability

The GSI resources describe the groundwater vulnerability beneath the site as High as shown in Figure 4.8. Vulnerability ratings are related to a function of overburden thickness and permeability which might offer a degree of protection and/or attenuation to the underlying aquifer from surface activities and pollution. There were no karst features identified near the site.

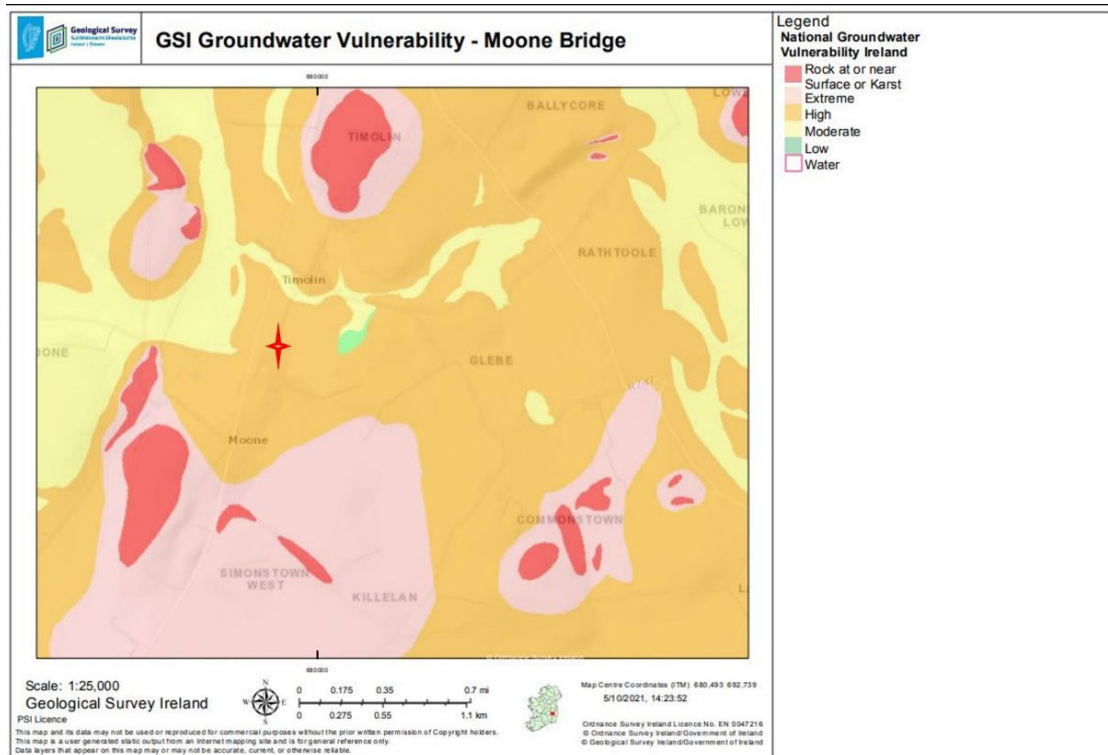


Figure 4.8: Groundwater Vulnerability (approximate site location indicated by red star) (Source: GSI, 2021)

4.3.11 Groundwater Recharge

Diffuse recharge generally occurs via rainfall percolating through the subsoil with its rate being higher in areas where the subsoil is thinner and/or more permeable. The proportion of effective rainfall that recharges the aquifer is largely determined by the thickness and permeability of the soil and subsoil, and by the slope. The groundwater recharge map for the site area is shown in Figure 4.9, and the GSI groundwater recharge model parameters for this area are summarised in Table 4.1.

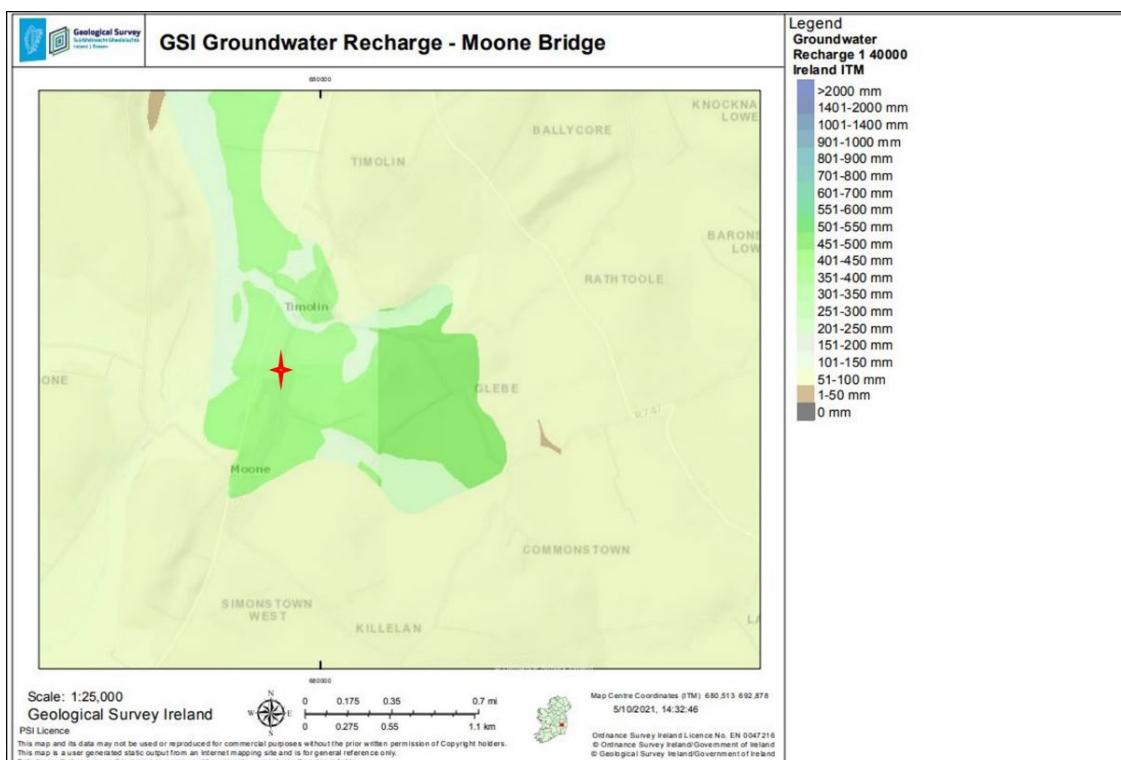


Figure 4.9: Groundwater Recharge (approximate site location indicated by red star) (Source: GSI, 2021)

Table 4.1 - GSI Groundwater Recharge Parameters

Groundwater Recharge Parameters	
Average Recharge (mm/yr):	405
Hydrogeological Setting:	2.i
Hydrogeological Setting Description:	Sand and gravel aquifer, overlain by well-drained soil
Soil Drainage:	DRY
Subsoil Type:	GLs
Subsoil Description:	Glaciofluvial sands and gravels
Subsoil Permeability:	H
Subsoil Permeability Description:	High
GW Vulnerability:	H
GW Vulnerability Description:	High
Aquifer Category:	Pu
Aquifer Category Description:	Poor Aquifer – Bedrock which is generally unproductive
Recharge Coefficient (%):	85
Maximum Recharge Capacity (mm/yr):	N/A
Effective Rainfall (mm/yr):	476.400

4.3.12 Wells & Springs

A search of the GSI groundwater well database was conducted to identify registered wells within the site and surrounding area. The two nearest wells to the site are to the south of the site in Moone village. The nearest (well reference 2619SEW316) is a dug well installed in 1899 to a depth of 9.1m and is located approximately 175m south-southeast of the site. The second nearest (well reference 2619SEW315) located approximately 190m south-southwest of the site was installed in 1899 to a depth of 7m and is reported to have a poor supply. There are two other wells located within 1km of the site area: one dug in 1899 to 16.5m for public supply and one drilled in 1973 to 22.6m yielding a poor supply. See Figure 4.10 for the locations of nearby wells.

The GSI database also provides a framework for the protection of groundwater source zones (e.g. areas of contribution to water supply bores). There are no reported source protection zones (SPZs) within a 2km radius of the proposed site.

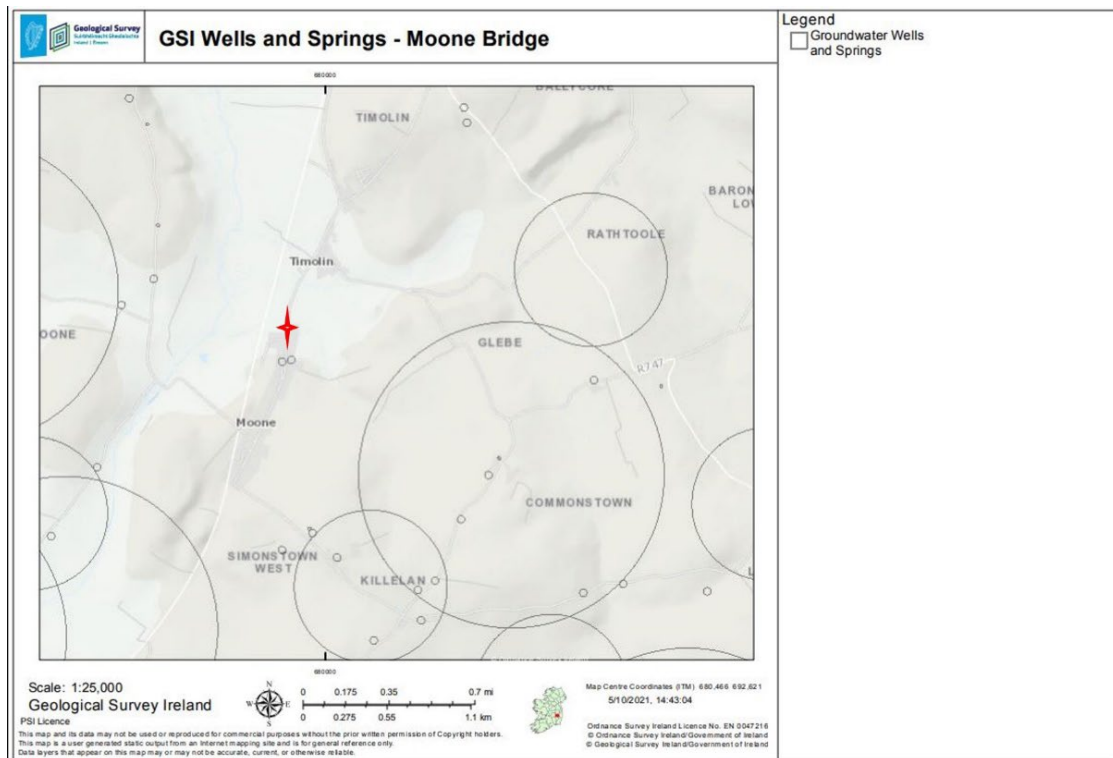


Figure 4.10: Wells and Springs (approximate site location indicated by red star) (Source: GSI, 2021)

4.3.13 Hydrology

The site area includes the Timolin stream which flows east under the Moone bridge to where it joins the River Greese. Based on the most recent water quality information (2013-2018), both the Timolin stream and the River Greese have an overall Water Framework Directive (WFD) Status of 'Moderate' (see Figure 4.11 and Table 4.2). As shown in Figure 4.12, the EPA spatial dataset indicates that the WFD River Waterbody Risk associated with the River Greese, located 490m west of the site, and its tributaries including the Timolin stream is 'At Risk' (EPA 2021).

The Timolin stream and the River Greese have the same EPA ID and code, which is IE_SE_14G040350.

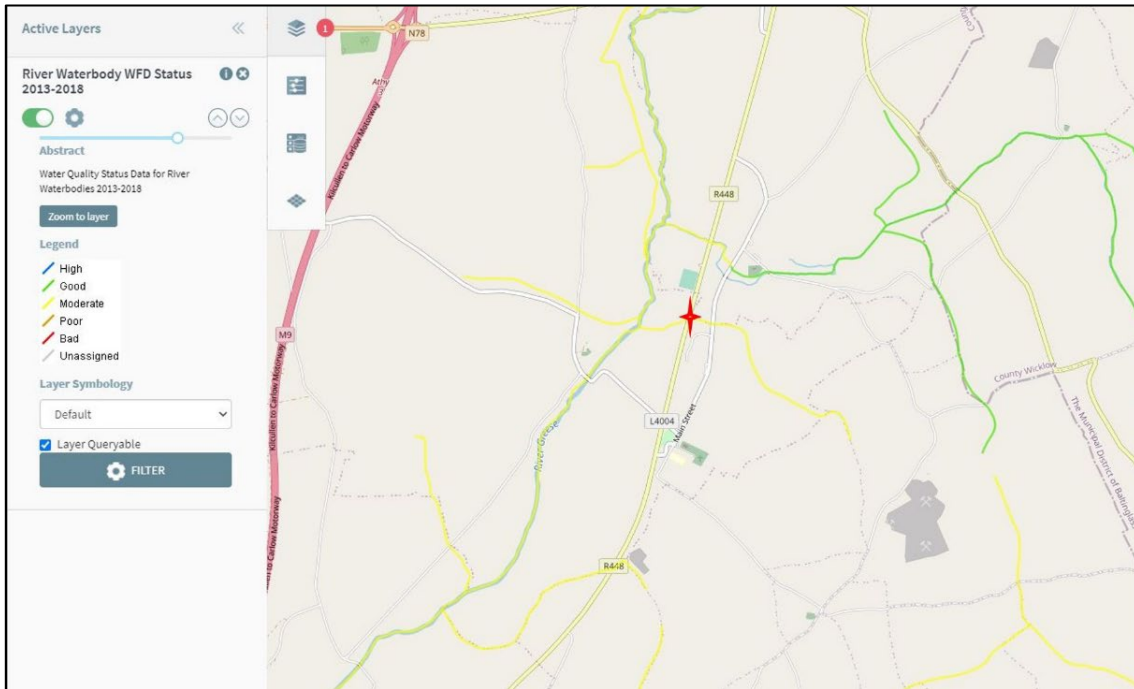


Figure 4.11: River Waterbody WFD Status (approximate site location indicated by red star) (Source: EPA Maps, 2021)

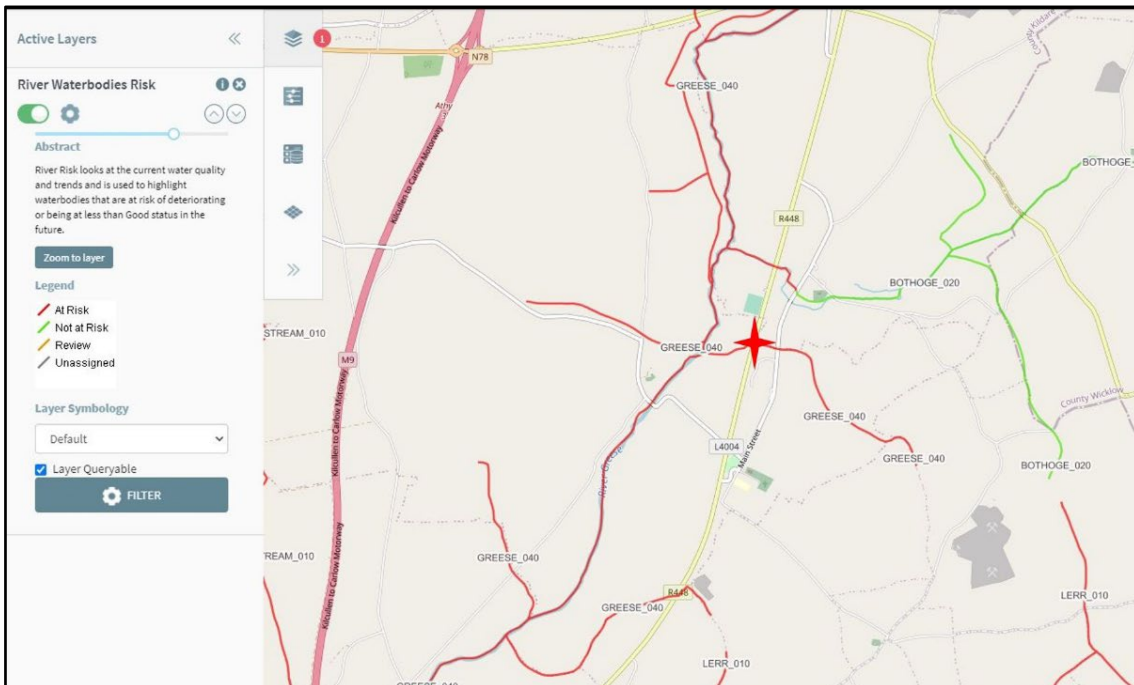


Figure 4.12: River Waterbodies Risk (approximate site location indicated by red star) (Source: EPA Maps, 2021)

Table 4.2 - WFD Summary Information – Poundbrook Stream and River Avonmore

Waterbody Code	IE_SE_14G040350
Waterbody Name	Greese_40
Waterbody Type	River
Iteration	SW 2013-2018
Status	Moderate
Risk	At Risk

4.3.14 Radon

According to the EPA (now incorporating the Radiological Protection Institute of Ireland) between 10 and 20 per cent of the homes in the 10km grid source where the site is located are estimated to be above the Reference Level of 200 Bq/m³ (see Figure 4.13). The Building Regulations in Ireland require radon protection to be installed in areas of high radon risk (10% to 30% of homes exceed reference).

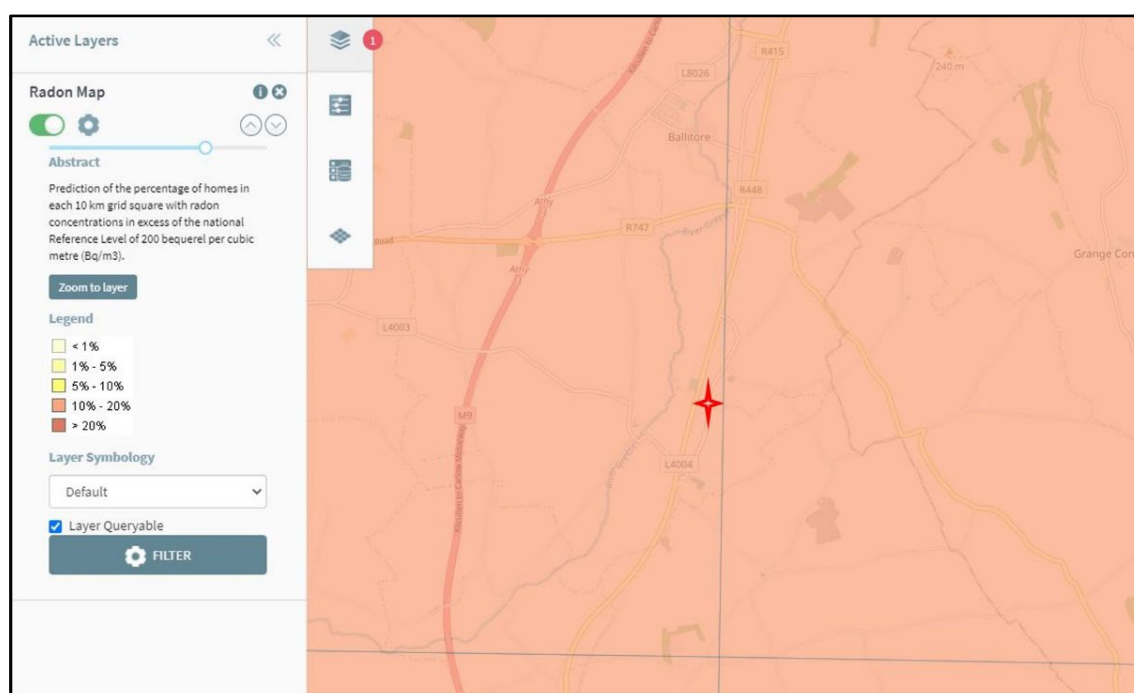


Figure 4.13: Radon Map (approximate site location indicated by red star) (Source: EPA, 2021)

4.3.15 Protected Structures

The National Monuments Service (NMS) maps show that the nearest protected structure to the site is a handball alley from 1930 to 1940 which is located 160m south of the site in Moone village. This structure (Reg. No. 11903608) is on the National Inventory of Architectural Heritage.

The next nearest structure is listed on the Sites and Monuments Record as the Burial ground, Timolin (KD036-028001-) which carries the notation "Fitzgerald records the levelling of a chapel (KD036-028----) and burial ground close to Timolin 'on the opposite side of the

Bothage' in the 'chapel field'". This site is located approximately 370m northeast of the site and is part of a larger Zone of Notification located approximately 290m northeast of the site at its nearest point. See Figure 4.14 for locations of protected structures.

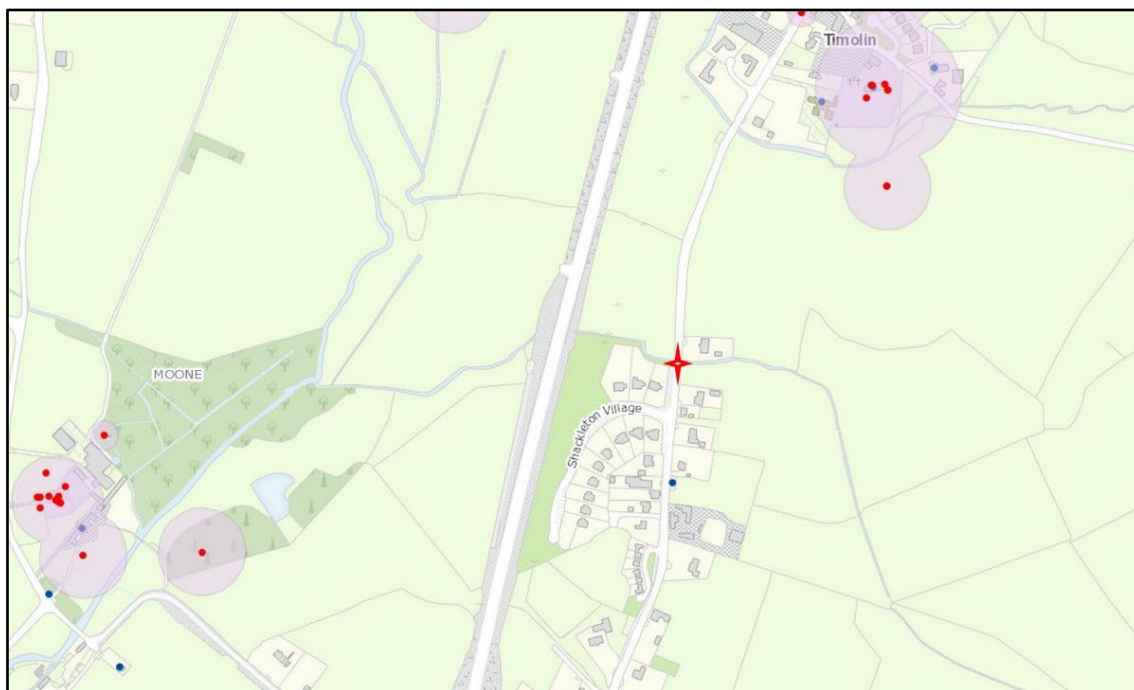


Figure 4.14: National Monument Service Protected Structures (approximate site location indicated by red star) (Source: NMS, 2021)

4.3.16 Nearby Site Investigations

The Geological Survey of Ireland (GSI) have compiled a database from site investigations previously carried out in Ireland. Figure 4.15 identifies the site investigations locations closest to the vicinity of the site. The nearest boreholes are located 125m northwest and 115m west of the site and are associated with the 1998 Moone, Timolin, Ballitore Bypass Scheme. The nearest site investigation area is located 280m west of the site and is associated with the 2007 Kilcullen to Carlow N9 roadworks.

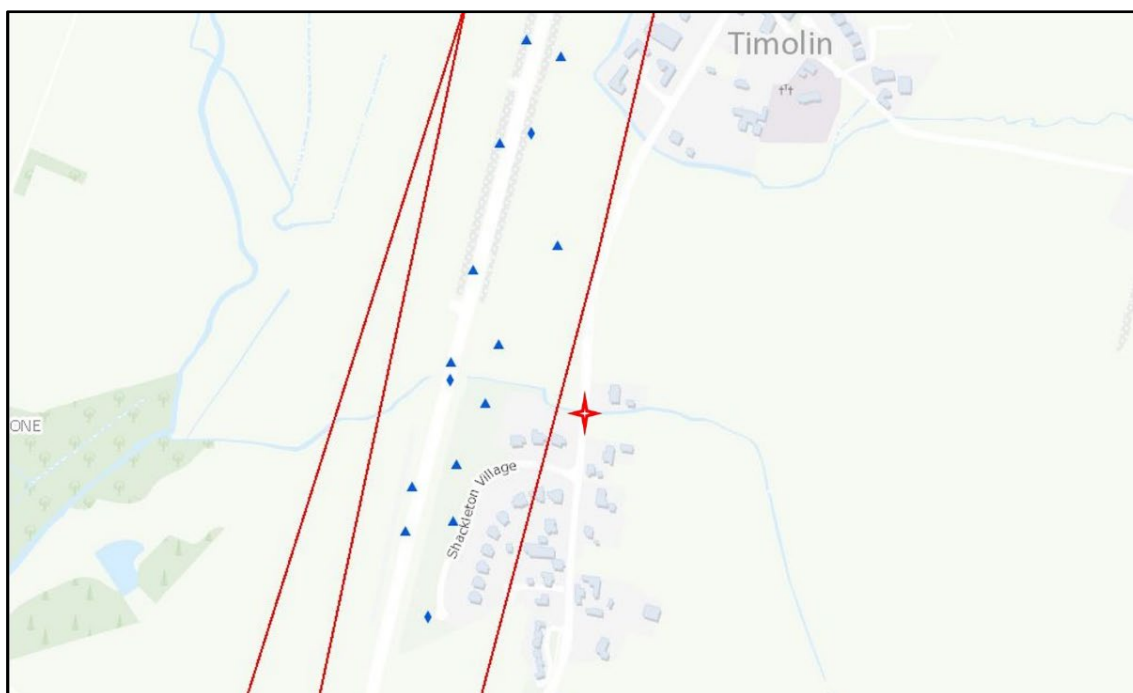


Figure 4.15 – Nearby Boreholes and Site Investigations (approximate site location indicated by red star) (Source: GSI, 2021)

4.3.17 Summary of the Physical Site Setting

The site physical setting is summarised in Table 4.3.

Table 4.3 - Summary Site Setting

FEATURE	DETAILS & COMMENTS
Topography	Varied topography and lower elevations towards waterways.
Geology	Topsoil: shallow, well-drained, mainly basic mineral soils
	Solid Geology: Carrighill Formation: calcareous greywacke, siltstone, and shale.
Hydrogeology	Aquifer Classification: Poor Aquifer (Pu) – Bedrock which is generally unproductive
	Vulnerability & Recharge: The vulnerability has been classified as High within glaciofluvial sands and gravels. The average recharge has been modelled at 405 mm/year.
	Groundwater Flow: The regional groundwater flow direction can be expected to be to the west towards River Greese, which flows to the southwest.
	Well Search:

	There were no Source Protection Zones identified within 2km of the site. Therefore, it is assumed that there are no public supply wells within this area.
Hydrology	Surface Water Courses: The Timolin stream traverses the site and joins the River Greese 490m west of the site.

5 TYPES AND CHARACTERISTICS OF POTENTIAL IMPACTS

The likely significant effects on the environment of the proposed development in relation to the criteria are outlined below.

5.1 Magnitude and Spatial Extent of Impact

This project relates to the rehabilitation works to the Moone bridge which is located on the L8102 at the north end of Moone village. This project is small in magnitude and extent. Any potential impacts are not likely to be significant.

5.2 The Nature of the Impact

In the absence of mitigation measures, the proposed bridge rehabilitation works have the potential to temporarily impact surface water quality as well as local flora and fauna during the construction phase of works. Due to the small scale of the proposed project, any potential impacts are not likely to be significant; however, an NIS has been completed under separate cover (OCSC, 2021).

5.3 The Transboundary Nature of the Impact

Given the presence of the Timolin stream which flows under the bridge on the site, there is potential for small-scale, temporary transboundary impacts.

5.4 The Intensity and Complexity of the Impact

The project involves a small area of operations limited to that required to undertake repairs to the bridge and maintenance of the bridge and nearby approaches, embankments, and streambed. Any potential impacts are not likely to be significant.

5.5 The Probability of the Impact

The probability of impact is low to moderate taking into account the following considerations:

- A CEMP will be prepared by the appointed contractor; and
- The receiving environment is not considered significantly sensitive near the site; however, the site lies upstream of a European designated area of conservation.

5.6 Expected Onset, Duration, Frequency and Reversibility of the Impact

The programming and duration of site works has yet to be determined, but it is expected that, given the scale of works to be undertaken, the programme will be of a short duration and undertaken in a single phase. Works will be undertaken in accordance with a site-specific CEMP to minimise any potential temporary impacts.

5.7 Potential Cumulative Impacts

Based on a review of grants of planning, it is not anticipated that there will be significant potential cumulative impacts arising from the proposed works when taken in consideration with impacts from other existing or proposed developments in the locality.

5.8 The Possibility of Effectively Reducing the Impact

The potential exists at the construction stage for temporary impacts associated with localised traffic disruption, construction noise and dust, and impact to surface waters by runoff, sedimentation, and construction materials and debris. However, a site-specific CEMP will be prepared by the appointed contractor that will detail all mitigation measures required to effectively limit the potential of impacts related to the site works.

5.9 Screening Decision

Having regard to the above, and in particular to the nature, scale, and location of the proposed project, by itself and in combination with other plans and projects, it is considered that the overall impact on the receiving environment is low. Therefore, it is not considered that an EIA is required at this time. Please refer to the completed Screening Checklist identified in European Commission publication Environmental Impact Assessment of Projects, Guidance on Screening (2017).

CHECKLIST	RESPONSE
Will there be a large change in environmental conditions?	No
Will new features be out-of-scale with the existing environment?	No. The scale of the structure will not be altered and will remain in scale with the existing environment.
Will the impact be unusual in the area or particularly complex?	No
Will the impact extend over a large area?	No
Will there be any potential for transboundary impact?	Potential impacts are possible given the site conditions and nature of the work
Will many people be affected?	Minor temporary impacts. Overall positive impact in maintaining and improving automotive and pedestrian access.
Will many receptors of other types (fauna and flora, businesses, facilities) be affected?	Limited potential impacts are possible given the site conditions and nature of the work
Will valuable or scarce features or resources be affected?	No
Is there a risk that environmental standards will be breached?	Implementation of mitigation measures will prevent the breach of environmental standards.
Is there a risk that protected sites, areas, features will be affected?	Due to the distance of the site from the nearest protected sites, areas, and features, it is not anticipated that these resources will be affected.
Is there a high probability of the effect occurring?	No, given the implementation of mitigation measures.

CHECKLIST	RESPONSE
Will the impact continue for a long time?	Temporary, short term.
Will the effect be permanent rather than temporary?	No
Will the impact be continuous rather than intermittent?	Temporary, short-term during construction. No impact following.
If it is intermittent will it be frequent rather than rare?	N/A
Will the impact be irreversible?	No
Will it be difficult to avoid, or reduce or repair or compensate for the effect?	Implementation of mitigation measures will prevent impact.