



**Appropriate Assessment Screening Report
for proposed bridge repair works, R445, Monasterevin, Co. Kildare**

prepared for O'Connor Sutton Cronin Consultant Engineers

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1 Introduction

This report, which contains information required for the competent authority (in this instance Kildare County Council) to undertake a screening for Appropriate Assessment (AA), has been prepared by Scott Cawley Ltd. on behalf of the applicant. It provides information on and assesses the potential for the proposed development to impact on the Natura 2000 network (hereafter referred to as European sites)¹. In brief, the proposed repair works consists of repointing of the parapets, relaying of the bridge surface, reconstruction of the riverbed under some of the arches, removal of vegetation from embankments and the inclusion of scour protection measures to the R445 bridge crossing the River Barrow in Monasterevin, Co. Kildare.

An AA is required if likely significant effects on European sites arising from a proposed development cannot be ruled out at the screening stage, either alone or in combination with other plans or projects. It is the responsibility of the competent authority to make a decision as to whether or not the proposed development is likely to have significant effects on European sites, either individually or in combination with other plans or projects.

For the reasons set out in detail in this AA Screening Report, it may be objectively concluded that an **Appropriate Assessment of the proposed Project is required in this instance** as it cannot be concluded, on the basis of objective information, that the proposed Project, either individually or in combination with other plans or projects, will not have a significant effect on the following European site(s): **River Barrow and River Nore SAC**.

2 Methodology

2.1 Guidance

This Appropriate Assessment Screening Report has been prepared with regard to the following guidance documents, as relevant:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities*. (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. Circular NPW 1/10 & PSSP 2/10;
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2001);
- *Communication from the Commission on the precautionary principle* (European Commission, 2000); and,
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2018).

¹ The Natura 2000 network is a European network of important ecological sites, as defined under Article 3 of the Habitats Directive 92/43/EEC, which comprises both special areas of conservation and special protection areas. Special conservation areas are sites hosting the natural habitat types listed in Annex I, and habitats of the species listed in Annex II, of the Habitats Directive, and are established under the Habitats Directive itself. Special protection areas are established under Article 4 of the Birds Directive 2009/147/EC for the protection of endangered species of wild birds. The aim of the network is to aid the long-term survival of Europe's most valuable and threatened species and habitats.

In Ireland these sites are designed as *European sites* - defined under the Planning Acts and/or the Birds and Habitats Regulations as (a) a candidate site of Community importance, (b) a site of Community importance, (c) a candidate special area of conservation, (d) a special area of conservation, (e) a candidate special protection area, or (f) a special protection area. They are commonly referred to in Ireland as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

2.2 Assessment Methodology

The above referenced guidance sets out a staged process for carrying out Appropriate Assessment. To determine if an Appropriate Assessment is required, documented screening is required. Screening identifies the potential for effects on the conservation objectives of European sites, if any, which would arise from a proposed plan or project, either alone or in combination with other plans and projects (*i.e.* likely significant effects).

Significant effects on a European site are those that would negatively undermine the conservation objectives supporting the favourable conservation condition of the Qualifying Interest (QI) habitats and/or the QI/Special Conservation Interest (SCI) species of a European site(s).

Screening for Appropriate Assessment involves the following steps:



If the conclusions at the end of screening are that there is no likelihood of significant effects occurring on any European sites as a result of the proposed plan or project, either alone or in combination with other plans and projects, then there is no requirement to undertake an Appropriate Assessment.

In establishing which European sites are potentially at risk (in the absence of mitigation) from the proposed development, a source-pathway-receptor approach was applied. In order for an impact to occur, there must be a risk enabled by having a source (*e.g.* water abstraction or construction works), a receptor (*e.g.* a European site or its QI(s) or SCI(s)²), and a pathway between the source and the receptor (*e.g.* pathway by air for airborne pollution, or a pathway by a watercourse for mobilisation of pollution). For an impact to occur, all three elements must exist; the absence or removal of one of the elements means there is no possibility for the impact to occur.

The identification of source-pathway-receptor connection(s) between the proposed development and European sites essentially is the process of identifying which European sites are within the Zone of Influence (Zoi) of the proposed development, and therefore potentially at risk of significant effects. The Zoi is the area over which the proposed development could affect the receiving environment such that it could potentially have significant effects on the QI habitats or QI/SCI species of a European site, or on the achievement of their conservation objectives³.

The identification of a source-pathway-receptor link does not automatically mean that significant effects will arise. The likelihood for significant effects will depend upon the characteristics of the source (*e.g.* extent and duration of construction works), the characteristics of the pathway (*e.g.* direction and strength of prevailing winds for airborne pollution) and the characteristics of the receptor (*e.g.* the sensitivities of the European site and its QIs/SCIs). Where uncertainty exists, the precautionary principle⁴ is applied.

2.3 Desktop Data Review

The desktop data sources used to inform the assessment presented in this report are as follows (accessed on the 17/04/2019):

- Online data available on European sites and protected habitats/species as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie, including conservation objectives documents
- Online data available on protected species as held by the National Biodiversity Data Centre (NBDC) from www.biodiversityireland.ie
- Information on the surface water network and surface water quality in the area available from www.epa.ie
- Information on groundwater resources and groundwater quality in the area available from www.epa.ie and www.gsi.ie

² The term qualifying interest is used when referring to the habitats or species for which an SAC is designated; the term special conservation interest is used when referring to the bird species (or wetland habitats) for which an SPA is designated.

³ As defined in the *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2018)

⁴ The precautionary principle is a guiding principle that derives from Article 191 of the Treaty on the Functioning of the European Union and has been developed in the case law of the European Court of Justice (*e.g.* ECJ case C-127/02 – Waddenzee, Netherlands).

The guidance document *Communication from the Commission on the Precautionary Principle* (European Commission, 2000) notes that the precautionary principle “covers those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the chosen level of protection”.

Applying the precautionary principle in the context of screening for appropriate assessment requires that where there is uncertainty or doubt about the risk of significant effects on a European site(s), it should be assumed that significant effects are possible and AA must be carried out.

- Ordnance Survey of Ireland mapping and aerial photography available from www.osi.ie
- Information on the location, nature and design of the proposed development supplied by the applicant's design team

3 Provision of Information for Screening for Appropriate Assessment

The following sections provide information to facilitate the Appropriate Assessment screening of the proposed development to be undertaken by the competent authority.

A description of the proposed development and the receiving environment is provided to identify the potential ecological impacts. The environmental baseline conditions are discussed, as relevant to the assessment of ecological impacts where they may highlight potential pathways for impacts associated with the proposed development to affect the receiving ecological environment (*e.g.* geological, hydrogeological and hydrological data).

The potential impacts are examined in order to define the potential zone of influence of the proposed development on the receiving environment. This then informs the assessment of whether the proposed development will result in likely significant effects on any European sites; *i.e.* affect the conservation objectives supporting the favourable conservation condition of the European site's QIs or SCIs.

3.1 Description of the Proposed Development

The various elements of the proposed works are described in detail in the planning application. In brief, the proposed development consists of:

- Raking and repointing of approximately 60% of the parapets on the upstream and downstream side of the bridge including riverside and roadside;
- The temporary removal of a number of capping stones from the parapets upstream and downstream to remove any vegetation growth beneath;
- The bridge surface to be planned and relayed;
- Inclusion of a number of scour protection measures to be put in place and reconstruction/repairs to all damaged piers including joints which may need to be raked and repointed;
- The reconstruction of the riverbed under arches 1 and 4, which has eroded away;
- Vegetation removal on approximately 30 - 40% of the abutments as well as the raking and repointing of joints;
- Vegetation removal on the upstream and downstream embankments; and,
- Vegetation removal as well as the raking and repointing of joints on each of the spandrel walls where deemed necessary.

The repair works are expected to take *c.* 2-3 months based on information provided by the design team.

There will be no changes made to the existing surface water drainage as part of the proposed development. Surface waters will continue to discharge to the River Barrow, directly adjacent/ below the proposed works area.

There will be no foul waters as a result of the proposed works.

3.2 Overview of the Receiving Environment

3.2.1 European sites

There are three European sites within the vicinity of the proposed works area, with the closest European site being the River Barrow and River Nore SAC, located within the proposed works area, directly beneath the R445 bridge. From the proposed works area, surface waters flow straight into the River Barrow. The other two European sites, Mountmellick SAC and Pollardstown Fen SAC within the vicinity of the proposed works are

located upstream and not hydrologically connected to the proposed works area. The proposed development has no potential source-pathway-receptor connections with any other European sites.

All of the European sites present in the vicinity of the proposed development are shown on Figure 1 and Figure 2. The QIs/SCIs of the European sites in the vicinity of the proposed development are provided in Appendix I.

3.2.2 Habitats

Based on examination of orthophotography⁵ the proposed works area is comprised predominantly of hard standing and artificial surfaces on the bridge, while the area beneath the bridge is aquatic in nature consisting of the River Barrow. The surrounding environment, i.e. the banksides upstream consist primarily of grassy verges and treelines while the surrounding environment downstream of the bridge consists of grassy bankside verges and areas of woodland. It is not possible to say based on the desk study alone whether these woodlands contain protected habitats for which the River Barrow and River Nore SAC are designated

3.2.3 Flora and Fauna Species

The desktop study returned records of three species, for which European sites illustrated in Figure 1 and listed in Appendix 1 are designated, within 2km of the proposed development site: Desmoulin's Whorl Snail (*Vertigo moulinsiana*), White-clawed crayfish (*Austropotamobius pallipes*) and Otter (*Lutra lutra*). Based on the conservation objectives⁶ of the River Barrow and River Nore SAC the nearest protected habitat to the proposed works area is Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion*, *Alnion incanae*, *Salicion albae*) and the only species known to occur in the vicinity of the proposed works area is White-Clawed Crayfish, however these protected habitats/ species may still be present in the vicinity or immediate downstream environment of the proposed works despite the absence of records. Protected species such as salmon or otter, for which records are absent are likely to be present given the mobility of these species. Given the location and the nature of the proposed works, especially in relation to the River Barrow, the habitats present are deemed suitable to support the qualifying interest or special conservation interest species of any nearby European sites (see Appendix I).

There were records of two non-native invasive plant species returned from the desktop study (one terrestrial species and one aquatic species) present within, or in close proximity to, the proposed Project. The closest record for the terrestrial species Rhododendron *Rhododendron ponticum* was c. 1.5km south of the proposed works area, towards the M7. The closest record for the aquatic invasive plant species Canadian pondweed *Elodea canadensis* is c. 1km upstream of the proposed works area.

3.2.4 Hydrology

As indicated within section 3.2.1 above, the proposed works area lies directly within the River Barrow. Surface waters from these proposed works will discharge directly into the River Barrow. According to the EPA Map Viewer, the most recent water quality of the River Barrow at downstream monitoring point RS14B011200 (c. 830m downstream) is "Q3 Poor" while its Water Framework Directive (WFD) status 2010-2015 is listed of "Good", and a WFD risk score of "Not at risk".

⁵ According to examination of orthophotographs on Google maps www.google.com/maps (Accessed 17/04/2019)

⁶ NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

3.2.5 Hydrogeology

Geological Survey of Ireland (GSI) data indicates that the site is underlain by a “Regionally Important Bedrock Aquifer”, which is described by the GSI as “Karstified.”

The Groundwater Body (GWB) underlying the site is the Bagenalstown Upper GWB, which is currently classified by the EPA as having “Good Status” and being “not at risk” of not achieving good status under the Water Framework Directive (2000/60/EC).

Figure 1. European sites in the vicinity of the proposed works

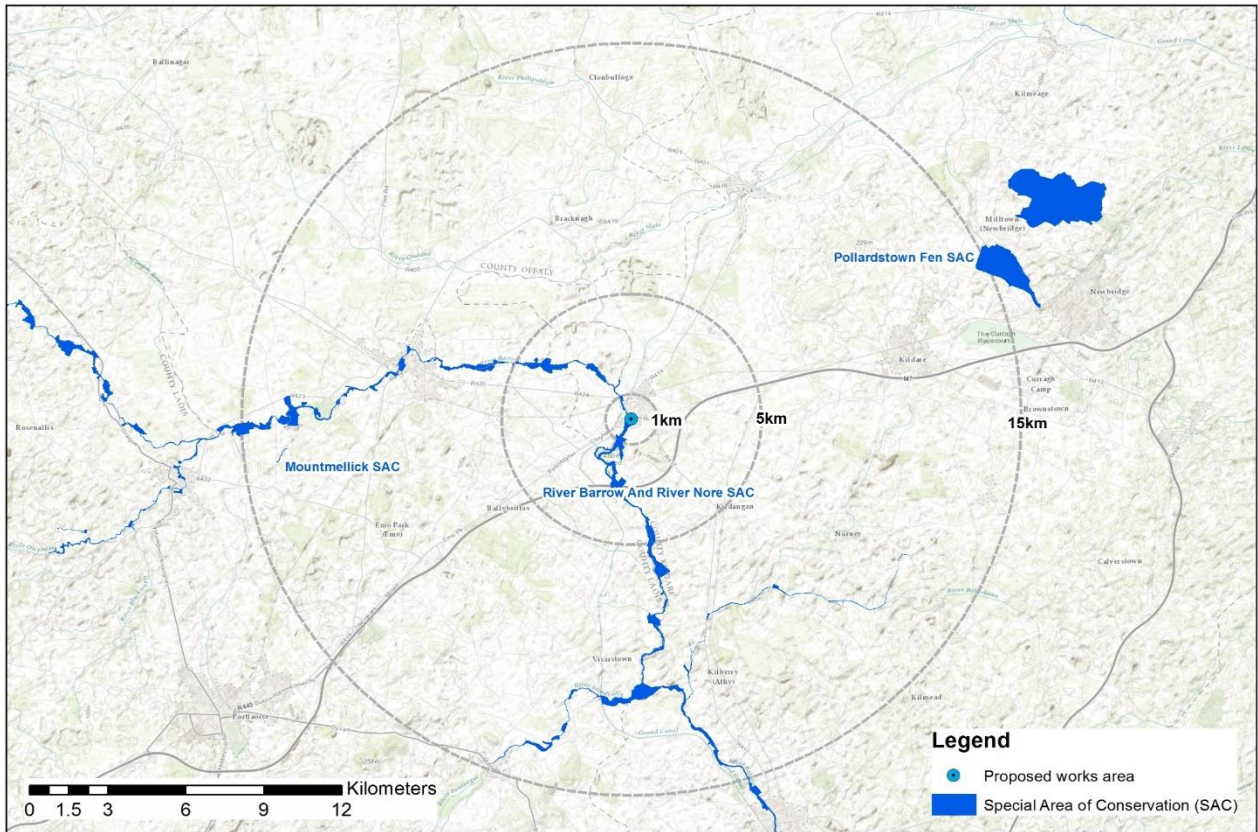


Figure 2. Location of the proposed works in the surrounding environment



3.3 Assessment of Likely Significant Effects on European Sites

This section identifies the potential impacts associated with the proposed works, examines whether there are any European sites within the Zol of effects from the proposed development, and assesses whether there is any risk of the proposed development resulting in a likely significant effect on any European site, either alone or in combination with other plans or projects.

In assessing the potential for the proposed development to result in a likely significant effects on any European sites, any measures intended to avoid or reduce the harmful effects of the project on European sites are not taken into account.

3.3.1 *Habitat loss and fragmentation*

The proposed development overlaps with the boundary of the River Barrow and River Nore SAC and thus, there is a risk of direct habitat loss for the species outlined in Appendix 1 due to the location and nature of the proposed works (i.e. reconstruction of the riverbed). There is also a risk of indirect habitat loss as a consequence of severe habitat degradation arising from a reduction in water quality, as described in section 3.3.2 below.

3.3.2 *Habitat degradation as a result of hydrological impacts*

Surface water run-off and discharges from the proposed works will discharge directly into the River Barrow.

Surface Water

The release of contaminated surface water runoff and/or an accidental spillage or pollution event into any surface water features during construction, has the potential to affect water quality in the receiving aquatic environment. In the absence of mitigation, the associated effects of a reduction of surface water quality could potentially extend for a considerable distance downstream of the discharge point or location of the accidental pollution event. Such an occurrence, of a sufficient magnitude, either alone or in combination with other pressures on water quality, could undermine the conservation objectives of the European sites downstream in the River Barrow (i.e. River Barrow and River Nore SAC).

The precise nature and significance of effects will depend on the proposed construction methodology. The temporary alteration to the existing waterbody during construction works (i.e. flow rate and/or flow direction) could result in the degradation of freshwater aquatic/wetland habitats downstream of the proposed works and indirectly impact on species that these habitat may support.

Foul and Process Wastewaters

There will be no foul or process water run-off from the proposed works area, therefore, there is no possibility of the proposed repair works undermining the conservation objectives of any of the qualifying interests or special conservation interests of European sites as a result of foul waters.

3.3.3 *Habitat degradation as a result of hydrogeological impacts*

The proposed development does not include any works that may affect the existing groundwater regime and therefore, there is no potential for the groundwater impacts.

3.3.4 *Habitat degradation as a result of introducing/spreading non-native invasive species*

Although there are no known records of any invasive plant species within the immediate vicinity of the proposed works area, the freshwater non-native invasive species Canadian pondweed has been recorded c. 1km upstream and could potentially be present within the proposed works area. In the absence of mitigation, there is potential that this invasive species along with other invasives that may be present but not recorded, to spread or be introduced, during works, to habitats in downstream European sites. These in turn may result in

the degradation of the existing habitats and therefore undermine the conservation objectives of these European sites. Similarly, invasive non-native species are listed as a medium impact threat/pressure to several habitats for which the River Barrow and River Nore SAC are designated.

3.3.5 Disturbance and displacement impacts

A temporary increase in noise, vibration and/or human activity levels within the River Barrow during the proposed bridge repair works could result in the disturbance to and/or displacement of fauna species present within the vicinity of the subject lands. For mammal species such as otter, disturbance effects would not be expected to extend beyond 250m⁷, as noise levels associated with general construction activities would attenuate to close to background levels at that distance. Given that the proposed works are to take place directly within the SAC and the absence of any visual or acoustic screening between the works and any potentially occurring SCI species, it is likely that disturbance to and/or displacement of SCI species within the River Barrow will occur.

3.3.6 Summary

The potential impacts associated with the proposed development have the potential to affect the receiving environment and, as a result, the conservation objectives supporting the qualifying interest/special conservation interests of the following European site: **River Barrow and River Nore SAC**.

The potential impacts of the proposed development on the receiving environment, their ZoI, and the European sites at risk of likely significant effects are summarised in Table 1 below.

Table 1 Summary of Analysis of Likely Significant Effects on European sites

Potential Direct, Indirect In Combination Effects and the ZoI of the Potential Effects	Are there any European sites within the ZoI of the proposed development?
<p>Habitat loss Habitat loss will be confined to the lands within the proposed development boundary.</p>	<p>Yes. There is a risk of direct habitat loss due to the location and nature of the proposed works as well as an indirect habitat loss risk due to severe habitat degradation arising from a reduction in water quality.</p>
<p>Habitat degradation as a result of hydrological impacts Habitats and species downstream of the proposed development site and the associated surface water drainage discharge points, and downstream of offsite wastewater treatment plants.</p>	<p>Yes. The release of contaminated surface water runoff and/or an accidental spillage or pollution event into any surface water features during the repair works, has the potential to affect water quality in the receiving aquatic environment.</p>
<p>Habitat degradation as a result of hydrogeological impacts Groundwater-dependant habitats, and the species those habitats support, in the local area that lie downgradient of the proposed development site.</p>	<p>No. The proposed development does not include any works that may affect the existing groundwater</p>

⁷ This is consistent with Transport Infrastructure Ireland (TII) guidance (*Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes* and *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes*) documents. This is a precautionary distance, and likely to be moderated by the screening effect provided by surrounding vegetation and buildings, with the actual ZoI of construction related disturbance likely to be much less in reality.

Potential Direct, Indirect In Combination Effects and the Zol of the Potential Effects	Are there any European sites within the Zol of the proposed development?
	regime and therefore, there is no potential for the groundwater impacts.
<p>Habitat degradation as a result of introducing/spreading non-native invasive species</p> <p>Terrestrial and aquatic habitat areas potentially downstream of the proposed Project site.</p>	<p>Yes.</p> <p>Given the location of the proposed repair works directly within the River Barrow and the nature of the proposed works within the watercourse. Additionally, the aquatic invasive species Canadian pondweed has been recorded c. 1km upstream within the watercourse.</p>
<p>Disturbance and displacement impacts</p> <p>Potentially up to several hundred metres from the proposed development boundary, dependent upon the predicted levels of noise, vibration and visual disturbance associated with the proposed development, in conjunction with the sensitivity of the qualifying interest species to disturbance effects.</p>	<p>Yes.</p> <p>Given the location of the proposed repair works directly within the River Barrow and the absence of any visual or acoustic screening between the works and any potentially occurring SCI species.</p> <p>There is also potential for direct disturbance or mortality to protected species such as salmon, crayfish, otter, etc. that may be present within the immediate receiving environment of the proposed works area.</p>

4 Conclusions of Screening Assessment Process

Following an examination, analysis and evaluation of the relevant information, including in particular, the nature of the works and the potential relationship with European sites and their conservation objectives, as well as considering other plans and projects, and applying the precautionary principle, it is the professional opinion of the authors of this report that there is the potential for likely significant effects on the following European site, for the reasons set out in Section 3.3 above: **River Barrow and River Nore SAC**.

Therefore, it is the professional opinion of the authors of this report that the application for consent for the proposed Project requires an Appropriate Assessment.

However, the authors of this report acknowledge that it is for the competent authority to carry out a screening for AA and to reach one of the following determinations:

- 1 AA of the proposed Project is required if it cannot be excluded, on the basis of objective information, that the proposed Project, individually or in combination with other plans or projects, will have a significant effect on any European sites;
- 2 AA of the proposed Project is not required if it can be excluded, on the basis of objective information, that the proposed Project, individually or in combination with other plans or projects, will have a significant effect on any European sites.

Appendix I

The Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the European sites in the vicinity of the proposed development site (see Figure 1)

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
Special Area of Conservation (SAC)	
<p>River Barrow and River Nore SAC [002162]</p> <p>Annex I Habitats:</p> <ul style="list-style-type: none"> • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Reefs [1170] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] • European dry heaths [4030] • Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] • Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] <p>Annex II Species:</p> <ul style="list-style-type: none"> • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016] • <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] • <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092] • <i>Petromyzon marinus</i> (Sea Lamprey) [1095] • <i>Lampetra planeri</i> (Brook Lamprey) [1096] • <i>Lampetra fluviatilis</i> (River Lamprey) [1099] • <i>Alosa fallax fallax</i> (Twaiite Shad) [1103] • <i>Salmo salar</i> (Salmon) [1106] • <i>Lutra lutra</i> (Otter) [1355] • <i>Trichomanes speciosum</i> (Killarney Fern) [1421] • <i>Margaritifera durrovensis</i> (Nore Pearl Mussel) [1990] <p>NPWS (2011) <i>Conservation Objectives: River Barrow and River Nore SAC 002162</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.⁸</p>	<p>Located within the proposed works area.</p>

⁸ The versions of the conservation objectives documents referenced in this table are the most recent published versions at the time of writing

European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)	Location Relative to the Proposed Development Site
<p>Mountmellick SAC [002141]</p> <p>Annex II Species:</p> <ul style="list-style-type: none"> • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016] <p>NPWS (2018) <i>Conservation Objectives for Mountmellick SAC 002141</i>. Version 6.0. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.</p>	<p>Located c. 13.3km west of the proposed development</p>
<p>Lough Fingall Complex SAC [000606]</p> <p>Annex I Habitats:</p> <ul style="list-style-type: none"> • Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] • Petrifying springs with tufa formation (Cratoneurion) [7220] • Alkaline fens [7230] <p>Annex II Species:</p> <ul style="list-style-type: none"> • <i>Vertigo geyeri</i> (Geyer's Whorl Snail) [1013] • <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) [1014] • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016] <p>NPWS (2018) <i>Conservation Objectives for Pollardstown Fen SAC 000396</i>. Version 6.0. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.</p>	<p>Located c. 14.5km north east of the proposed development</p>