DixonBrosnan
environmental consultants

Report in Support of Appropriate Assessment (AA) Screening

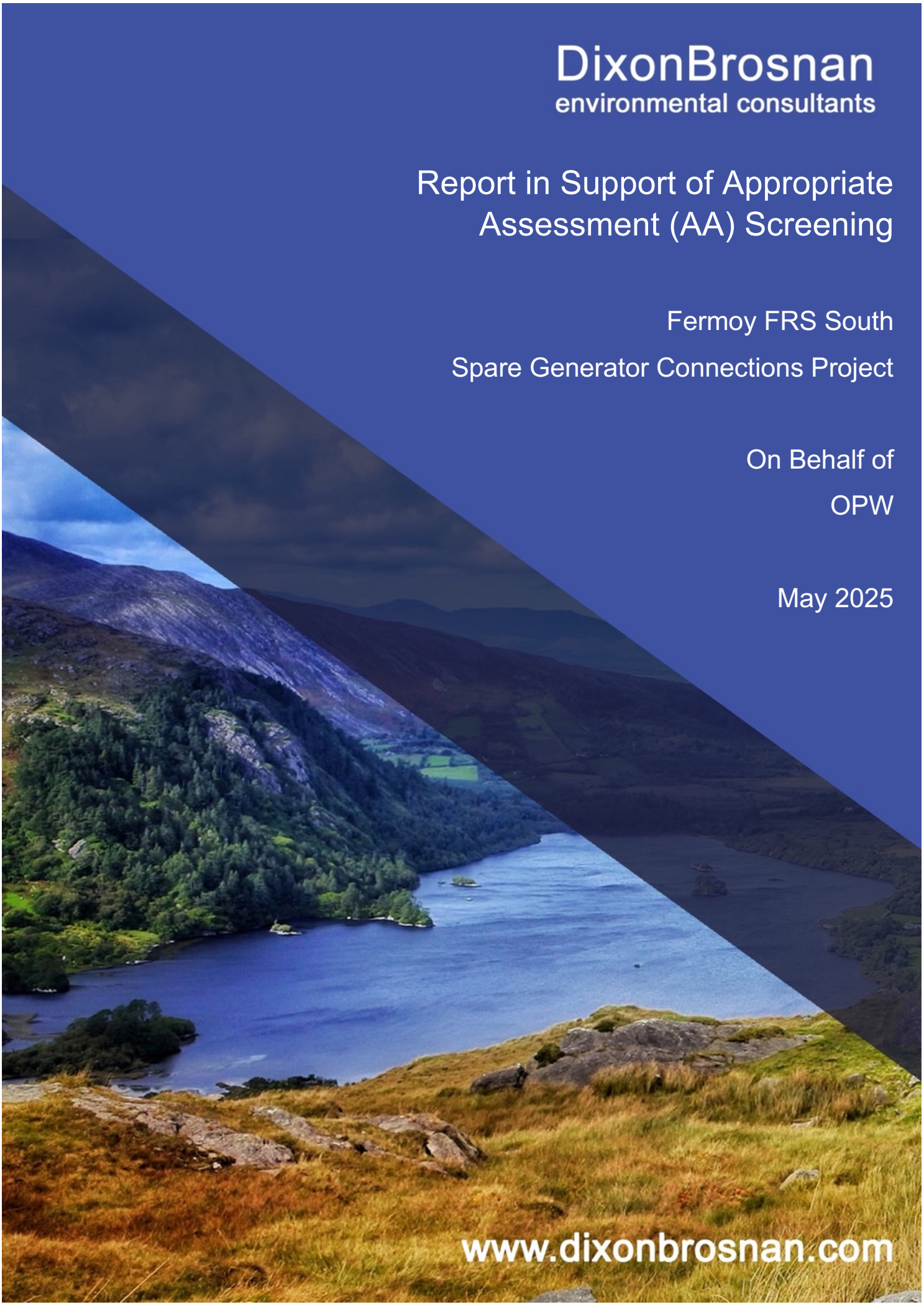
Fermoy FRS South

Spare Generator Connections Project

On Behalf of

OPW

May 2025



www.dixonbrosnan.com

DixonBrosnan

environmental consultants

Project	Report in Support of Appropriate Assessment (AA) Screening for Fermoy FRS South Spare Generator Connections Project	
Client	OPW	
Project Ref.	25046	
Report No.	25046.01	
Client Ref.	-	
Date	**Revision**	**Prepared By**
08/05/25	First Draft	Sorcha Sheehy BSc PhD
21/05/25	Issue to client	Carl Dixon BSc MSc

DixonBrosnan Lios Ri Na hAoine, 1 Redemption Road, Cork.

Tel 086 851 1437| carl@dixonbrosnan.com | www.dixonbrosnan.com

This report and its contents are copyright of DixonBrosnan. It may not be reproduced without permission. The report is to be used only for its intended purpose. The report is confidential to the client, and is personal and non-assignable. No liability is admitted to third parties.
©DixonBrosnan 2025.

Table of Contents

1. Introduction *5*

1.1 Background **5**

1.2 Aim of Report **5**

1.3 Authors of Report **7**

2. Regulatory Context and Appropriate Assessment Procedure *7*

2.1 Regulatory Context **7**

2.2 Appropriate Assessment Procedure **8**

3. Receiving Environment *9*

3.1 Existing site **9**

3.2 Proposed works **10**

3.2.1 Mill Island Pumping Station 10

3.2.2 Mill Road Pumping Station 10

4. Screening *12*

4.1 Introduction **12**

4.2 Likely zone of impact **12**

4.3 Site surveys **13**

4.4 Source-Pathway-Receptor Model **13**

4.5 Likely Significant Effect **14**

4.6 Screening Process **14**

4.7 Desktop Review **14**

5. Natura 2000 Sites *16*

5.1 Designated sites within likely zone of impact **16**

5.2 Blackwater River (Cork/Waterford) SAC **21**

5.3 Blackwater Callows SPA **21**

5.4 Natura 2000 sites – Features of interests and conservation objectives **22**

5.5 Status of qualifying species and habitats for the Blackwater River (Cork/Waterford) SAC **24**

5.5.1 Twaite shad 24

5.5.2 Otter 24

5.5.3 Freshwater Pearl Mussel 25

5.5.4 White-clawed Crayfish 26

5.5.5 Lamprey species (*Petromyzon marinus, Lampetra planeri, Lampetra fluviatilis*) 26

5.5.6 Atlantic salmon (*Salmo salar*) 26

5.5.7 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation. 27

5.6 Status of qualifying species and habitats for the Blackwater Callows SPA potentially affected by the proposed works **28**

5.6.1 Whooper Swan 28
5.6.2 Wigeon 28
5.6.3 Teal 28
5.6.4 Black-tailed Godwit 28
5.6.5 Wetlands and waterbirds 28
6. Water Quality - River Basin Management Plan for Ireland 2022-2027 (3rd Cycle) 29
7. Site survey 31
8. Potential Impacts 36
8.1 Loss of Habitat 37
8.1.1 Blackwater River (Cork/Waterford) SAC 37
8.1.2 Blackwater Callows SPA 37
8.2 Potential impacts from noise and disturbance 37
8.2.1 Blackwater River (Cork/Waterford) SAC. 37
8.2.2 Blackwater Callows SPA 38
8.3 Potential impacts from surface water runoff 38
8.4 Invasive Species 39
8.5 In-combination Impacts 39
9. Screening conclusion and statement 42
References 42
Appendices 44

1. Introduction

1.1 Background

The information in this report has been compiled by DixonBrosnan Environmental Consultants, on behalf of the OPW. It provides information on and assesses the potential for the proposed advanced works for the upgrade of the Fermoy FRS South Spare Generator Connections Project, at Fermoy, Co. Cork to impact on any Natura 2000 sites within its likely zone of impact.

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including proposed SPAs). SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites and from these the conservation objectives of the site are derived. The Birds and Habitats Directives set out various procedures and obligations in relation to nature conservation management in Member States in general, and of the Natura 2000 sites and their habitats and species in particular. A key protection mechanism is the requirement to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network before any decision is made to allow that plan or project to proceed. Not only is every new plan or project captured by this requirement but each plan or project, when being considered for approval at any stage, must take into consideration the possible effects it may have in combination with other plans and projects when going through the process known as Appropriate Assessment (AA).

The obligation to undertake Appropriate Assessment (AA) derives from Article 6(3) and 6(4) of the Habitats Directive, and both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. The Habitats Directive (92/43/EEC) and the associated Birds Directive (2009/147/EC) are transposed into Irish legislation by Part XAB of the 2000 Act and the Birds and Natural Habitats Regulations 2011. Approval of the NIS is required from An Bord Pleanála (ABP) through the Part XAB planning procedure under section 177AE (relating to Appropriate Assessment) of the Planning and Development Act, 2000, as amended. Accordingly, this screening for Appropriate Assessment comprises a compilation of the information relevant to the competent authority's assessments relating to the potential significant impacts of the proposed works on European sites within the surrounding area.

1.2 Aim of Report

The purpose of this report is to inform the AA process as required under the Habitats Directive (92/43/EEC) in instances where a plan or project may give rise to significant impacts on a Natura 2000 site. This report aims to inform the Appropriate Assessment process in determining whether the development, both alone and in combination with other plans or

projects, are likely to have a significant impact on the Natura 2000 sites in the context of their conservation objectives and specifically on the habitats and species for which the sites have been designated.

- *Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC* (European Commission (EC), 2018);
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodical Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission (EC), 2021);
- *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC* (European Commission, (EC) 2007);
- *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 and PSSP 2/10* (Department of Environment, Heritage and Local Government, 2010);
- *Guidelines for Good Practice Appropriate Assessment of Plans under Article 6(3) Habitats Directive* (International Workshop on Assessment of Plans under the Habitats Directive, 2011);
- *Commission notice Guidance document on wind energy developments and EU nature legislation*, (EC 2020);
- *Communication from the Commission on the precautionary principle. European Commission* (2000);
- *Assessment of plans & projects in relation to N2K sites – Methodological Guidance* (EC 2021) ;
- *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive* (EC 2021);
- Office of Planning Regulator OPR Practice Note PN01 Appropriate Assessment Screening for Development Management and
- Atkinson, S., Magee, M., Moorkens, E.A. & Heavey, M. (2023). Supplementary Guidance on Assessment and Construction Management in Margaritifera Catchments in Ireland: Blackwater River (Cork/Waterford) SAC https://e-mussels.eu/europe/conservation-guidelines.

1.3 Authors of Report

This report was prepared by Carl Dixon MSc (Ecological Monitoring) and Sorcha Sheehy PhD (Ecology/ornithology).

Carl Dixon MSc (Ecology) is a senior ecologist who has over 25 years' experience in ecological and water quality assessments. Carl Dixon holds an Honours Degree (BSc) in Ecology and a Masters (MSc) in Ecological Monitoring from UCC. He is a senior ecologist who has over 25 years' experience in ecological assessment. Prior to setting up DixonBrosnan Environmental Consultants in 2000, Carl set up and ran Core Environmental Services which included Rural Environmental Protection Scheme (REPS) planning for landowners and ecological assessments. Carl has particular experience in freshwater ecology including electrofishing fish stock assessments and water quality assessments. He also has considerable experience in habitat mapping and mammal ecology including survey work and reporting in relation to badgers and bats. Other competencies include surveys for invasive species and bird surveys. Carl has extensive experience with regards to EIAR and NIS mitigation and impact assessment. He has particular experience in large-scale industrial developments with extensive experience in complex assessments as part of multi-disciplinary teams. Such projects include gas pipelines, incinerators, electrical cable routes, oil refineries and quarries.

Dr. Sorcha Sheehy PhD (ecology/ornithology) is an experienced ecological consultant specialising in bird behaviour. Sorcha received a BSc in Applied Ecology from UCC and subsequently went on to receive a PhD in behavioural ornithology at UCC. During her PhD research, Sorcha studied bird-aircraft collision with a particular focus on bird behaviour, included field-based behavioural observations at airports, bird cadaver examination and collision classification and the use of radar tracking to model collision risk. Sorcha has worked for over 15 years in a professional ecology role and specialises in the coordination of ecology projects and assessments. She has coordinated and contributed to Habitats Directive Assessments (AA screenings and NIS) and Environmental Impact Assessment Reports (EIAR) for a range of small and large-scale projects with particular expertise in assessing impacts on birds. Notable projects include Arklow Bank Wind Park, Shannon Technology and Energy Park and Waste to Energy Facility Ringaskiddy.

2. Regulatory Context and Appropriate Assessment Procedure

2.1 Regulatory Context

The Habitats Directive (Council Directive 92/43/EEC on the *Conservation of Natural Habitats and of Wild Fauna and Flora*) aims to maintain or restore the favourable conservation status of habitats and species of community interest across Europe. The requirements of these directives are transposed into Irish law through the European Communities (Birds and Natural Habitats Regulations; S.I. No. 477 of 2011).

Under the Directive a network of sites of nature conservation importance have been identified by each Member State as containing specified habitats or species requiring to be maintained or returned to favourable conservation status. In Ireland the network consists of SACs and SPAs, and also candidate sites, which form the Natura 2000 network.

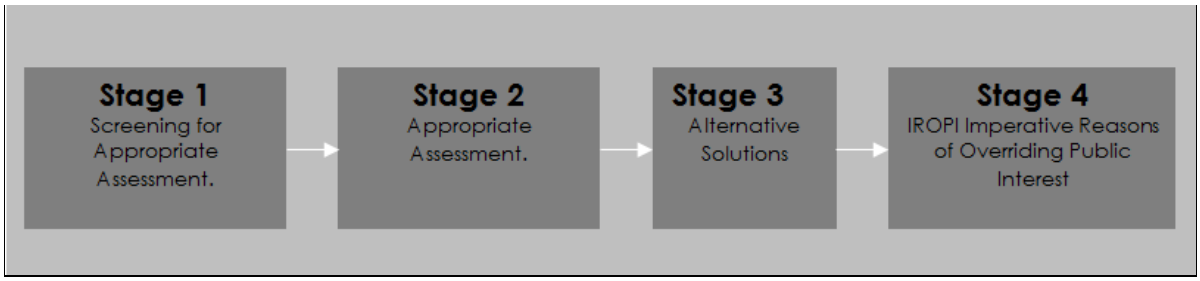
Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the *Conservation of Natural Habitats and of Wild Fauna and Flora* (as amended) (hereafter 'the Habitats Directive')

requires that, any plan or project not directly connected with or necessary to the management of a designated site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. A competent authority (e.g. the EPA or Local Authority) can only agree to a plan or project after having determined that it will not adversely affect the integrity of the site concerned.

The possibility of a significant effect on a designated or "European" site has generated the need for an appropriate assessment to be carried out by the competent authority for the purposes of Article 6(3). A Stage Two Appropriate Assessment is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site. The first (Screening) Stage for appropriate assessment operates merely to determine whether a (Stage Two) Appropriate Assessment must be undertaken on the implications of the plan or project for the conservation objectives of relevant European sites.

2.2 Appropriate Assessment Procedure

The assessment requirements of Article 6(3) establish a stage-by-stage approach. This assessment follows the stages outlined in the 2001 European Commission publications "Assessment of plans and projects significantly affecting Natura 2000 sites: methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC" (2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC Office for Official Publications of the European Communities, Luxembourg (EC, 2019);



The stages are as follows:

Stage One: Screening — the process which identifies any appreciable impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

Stage Two: Appropriate assessment — the consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage Three: Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site. It is confirmed that no reliance is placed by the developer on Stage Three in the context of this application for development consent;

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of imperative reasons of overriding public interest). Again, for the avoidance of doubt, it is confirmed that no reliance is placed by the developer on Stage Four in the context of this application for development consent.

It is the responsibility of the competent authority to make a decision on whether or not the proposed development should be approved, taking into consideration any potential impact upon any Natura 2000 site within its likely zone of impact.

3. Receiving Environment

3.1 Existing site

The proposed works area is located in the town of Fermoy, Co Cork at two separate locations i.e., Mill Island and Mill Road (**Figure 1**).

Both sites are located within the busy urban setting of Fermoy town just to the south of the River Blackwater. The proposed development sites house existing pumping stations which form part of the Fermoy Flood Relief (FRS) scheme infrastructure.

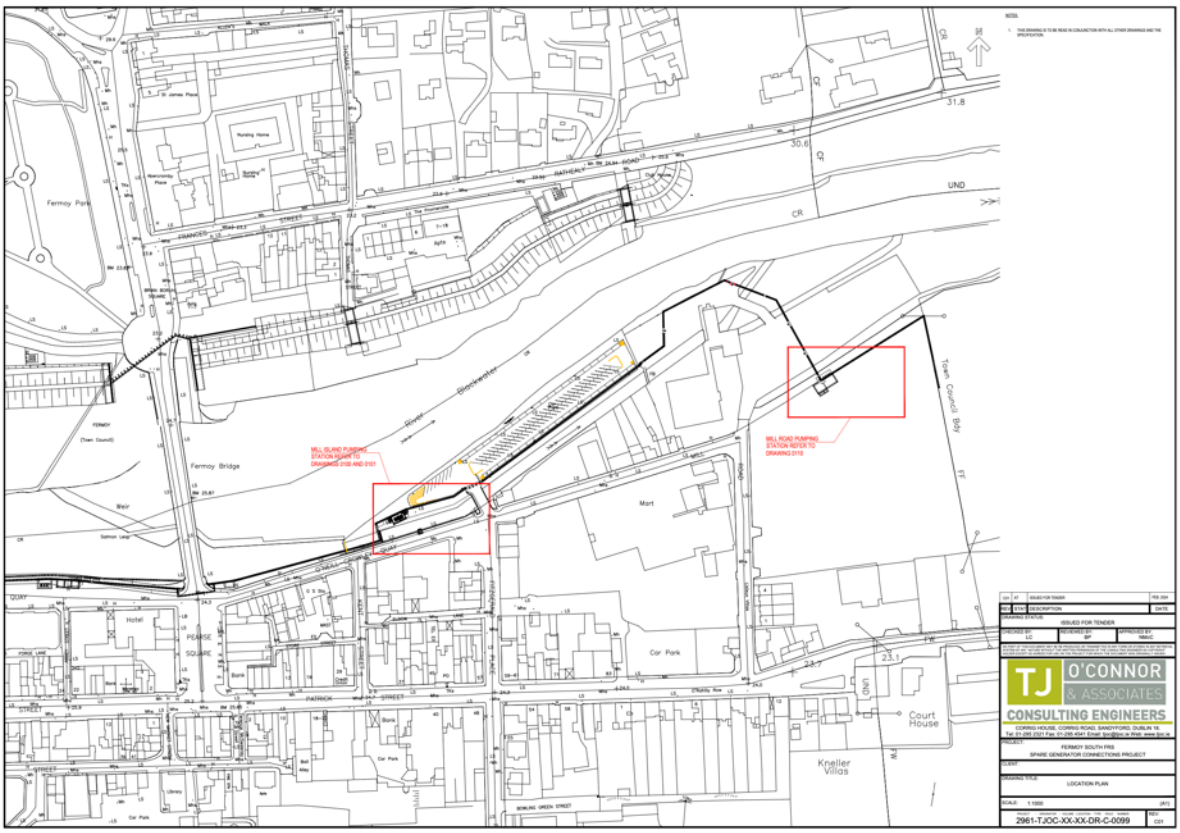


Figure 1. Proposed advanced works locations (boundary not to scale) | Source TJ O'Connor

3.2 Proposed works

3.2.1 Mill Island Pumping Station

The existing permanent onsite diesel generator powers the pumping station. In the event of a power failure occurring with the permanent generator, it is proposed to bring a mobile generator to site on a flatbed trailer to power the pumping station for the duration of the power failure.

To take power from a mobile generator to the pumping station, the following equipment needs to be installed:

Powerlock connector

When a power failure occurs with the onsite generator, a mobile generator will be brought to site on a flatbed trailer and this will be parked at the main entrance gate, site constraints prevent any closer access to the pumping station for the flatbed trailer. Flexible power cables (5 No.) from the mobile generator will be plugged into a proposed Powerlock Connector, similar to the one shown in the image below. This Powerlock Connector will be housed in a new kiosk (See **Appendix 2** for site drawings Drg. No. 2961-TJOC-XX-XX-DR-C-0101) and **Figure 2** (Drg. No. 2961-TJOC-XX-XX-DR-C-0100).

Once the flexible cables from the mobile generator are plugged into the powerlock connector, power is transferred via a 5-Core power cable from the powerlock connector to an existing electrical distribution board, which is located in an existing kiosk adjacent to the onsite permanent generator. The proposed route of the 5-Core power cable is shown in **Figure 2** (Drg. No. 2961-TJOC-XX-XX-DR-C-0100) and this cable will be housed in a GRP cable tray supported and bracketed to the stone clad reinforced concrete wall.

Manual Changeover Switch

The existing electrical distribution board referred to above is housed in a kiosk. The locations of this kiosk is shown on Drg. No. 2961-TJOC-XX-XX-DR-C-0100. A new manual changeover switch, similar to the one shown below, will be installed in this kiosk. The function of the new changeover switch is to switch power from the permanent onsite generator over to the backup mobile generator.

The proposed 5-Core power cable from the new powerlock connector will be connected into this changeover switch as will be the existing power cables from the existing onsite permanent generator. In the event of a power failure with the onsite generator, the switch will be changed to receive power from the mobile generator parked at the entrance gate.

3.2.2 Mill Road Pumping Station

The Scope of Works at this pumping station is similar to the proposed works at the Mill Island PS.

At present there is an existing permanent onsite diesel generator. The existing electrical distribution board is housed in a kiosk adjacent to the generator. Again, the new changeover switch will be housed in the existing electrical distribution board kiosk. The new Powerlock

Connector will be housed in a new kiosk, proposed location shown on **Figure 3** (Drg. No. 2961-TJOC-XX-XX-DR-C-0110).

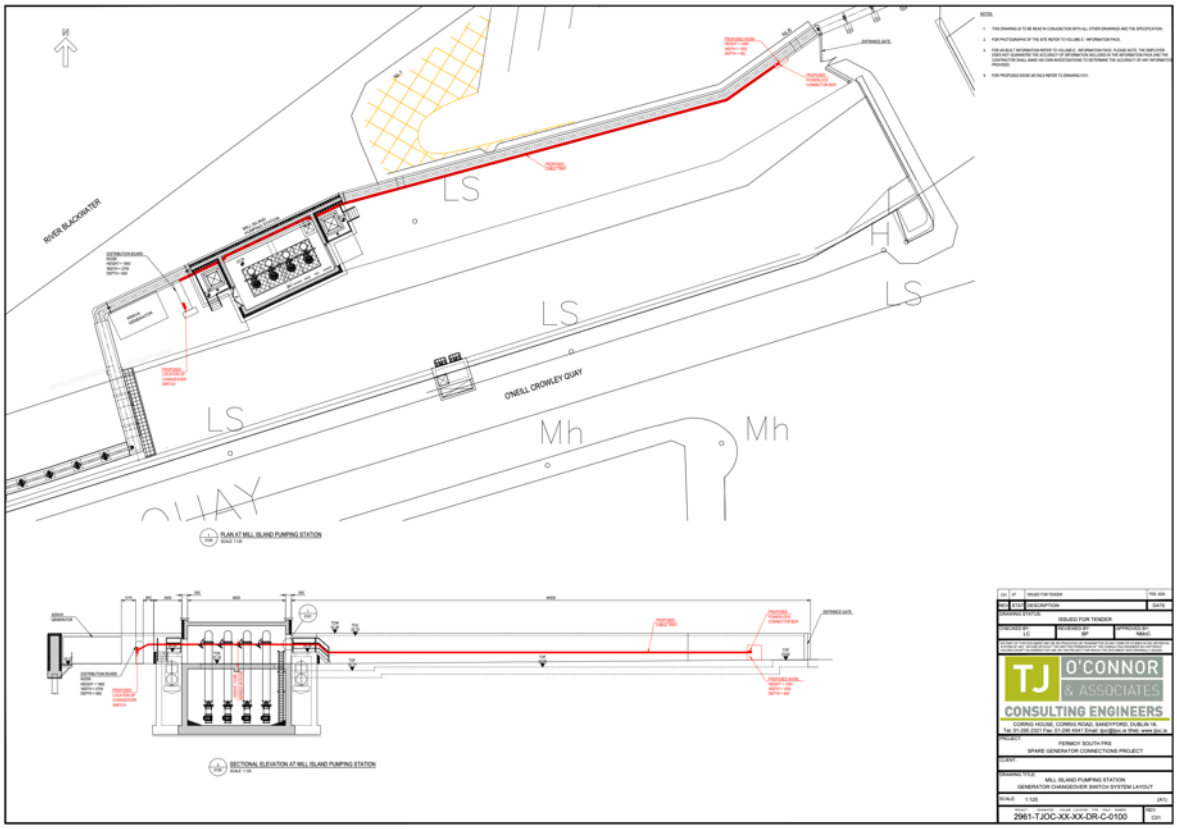


Figure 2. Mill Island System Layout | Source TJ O'Connor

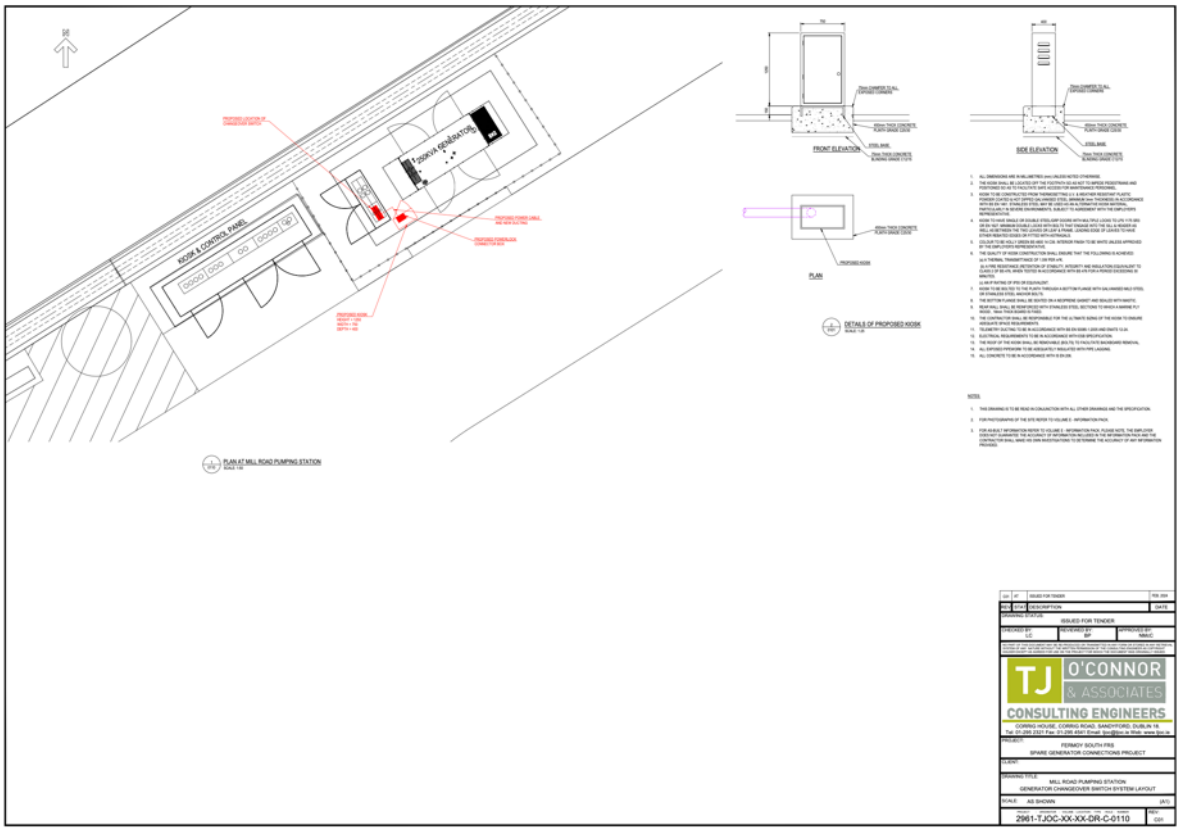


Figure 3. Mill Road System Layout | Source TJ O'Connor

4. Screening

4.1 Introduction

This section contains the information required for the competent authority to undertake screening for AA for the proposed works.

The aims of this section are to:

- Determine whether the proposed works are directly connected with, or necessary to, the conservation management of any Natura 2000 Sites;
- Provide information on, and assess the potential for the proposed works to significantly effect on Natura 2000 Sites (also known as European sites); and
- Determine whether the proposed works, alone or in combination with other projects, is likely to have significant effects on Natura 2000 sites in view of their conservation objectives.

The proposed works are not directly connected with, or necessary to the conservation management of any Natura 2000 sites.

4.2 Likely zone of impact

The likely zone of impact (ZoI) comprises the area within which the proposed works may potentially affect the conservation objectives or qualifying interests (QI) of a Natura 2000 site.

There is no recommended likely zone of impact, and guidance from the National Parks and Wildlife Service (NPWS) and CIEEM (2018) recommends that the distance should be evaluated on a case-by- case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects (cumulative).

In ecological and environmental impact assessment, for an effect to occur there must be a risk enabled by having a source (e.g. construction works at a proposed development site), a 'receptor' (e.g. SAC or other ecologically sensitive feature), and a pathway between the source and the receptor (e.g. a watercourse which connects the proposed development site to the SAC). A 'receptor' is defined as the Special Conservation Interest (SCI) of SPAs or Qualifying Interest (QI) of SACs for which conservation objectives have been set for the European sites being screened.

Consideration is therefore given to the source-pathway-receptor linkage and associated risks between the proposed works and Natura 2000 sites. For a significant effect to occur there needs to be an identified risk whereby a source (e.g., contaminant or pollutant arising from construction activities) affects a particular receptor (i.e., Natura 2000 site) through a particular pathway (e.g. a watercourse which connects the proposed development with the Natura 2000 site).

The identification of risk does not automatically mean that an effect will occur, nor that it will be significant. The identification of these risks means that there is a possibility of environmental or ecological damage occurring. The level and significance of the effect depends upon the nature of the consequence, likelihood of the risk and characteristics of the receptor.

The precautionary principle is applied for the purposes of screening to ensure that consideration and pre-emptive action is undertaken where there is a lack of scientific evidence. It is noted that mitigation measures are not taken into account in the AA screening assessment process.

4.3 Site surveys

A site walkover survey was carried out on the 7th of May 2025. The surveys assessed the potential for all Qualifying Interests (QIs)/ Special Conservation Interests (SCIs) of European sites and third schedule invasive species to occur within the proposed site.

4.4 Source-Pathway-Receptor Model

The likely effects of the proposed works on any European site have been assessed using a source-pathway-receptor model, where:

- A 'source' is defined as the individual element of the proposed works that has the potential to impact on a European site, its qualifying features and its conservation objectives.
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor.
- A 'receptor' is defined as the SCI of SPAs or QI of SACs for which conservation objectives have been set for the European sites being screened.

A source-pathway-receptor model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The source-pathway-receptor model was used to identify a list of European sites, and their QIs/SCIs, with potential links to European sites. These are termed as 'relevant' European sites/QIs/SCIs throughout this report.

4.5 Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a de minimis level. The opinion of the Advocate General in CJEU case C-258/11 outlines:

"the requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded.

If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."

In this report, therefore, 'relevant' European sites are those within the potential ZoI of activities associated with the proposed works, where LSE pathways to European sites were identified through the source-pathway-receptor model.

4.6 Screening Process

The Screening for Appropriate Assessment will incorporate the following steps:

Definition of the likely zone of impact for the proposed works;

- Identification of the European sites that are situated (in their entirety or partially or downstream) within the likely zone of impact of the proposed works;
- Identification of the most up-to-date QIs and SCIs for each European site within the likely zone of impact;
- Identification of the environmental conditions that maintain the QIs/SCIs at the desired target of Favourable Conservation Status;
- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs/SCIs within the European sites;
- Highlighting the activities of the proposed works that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which in-combination impacts would likely have significant effects.

4.7 Desktop Review

A desktop review facilitates the identification of the baseline ecological conditions and key ecological issues relating to Natura 2000 sites and facilitates an evaluation assessment of potential in-combination impacts. Sources of information used for this report include reports prepared for the Fermoy area and information from statutory and non-statutory bodies. The following sources of information and relevant documentation were utilised:

- National Parks & Wildlife Service (NPWS) - www.npws.ie
- Environmental Protection Agency (EPA) – www.epa.ie
- National Biodiversity Data Centre (NDBC)– www.biodiversityireland.ie
- County Cork Biodiversity Action Plan 2009-2014
- Cork County Development Plan 2022
- NPWS (2012) *Blackwater River (Cork/Waterford) SAC (site code 2170) Conservation objectives supporting document -coastal habitats*
- NPWS (2012) *River Blackwater (Cork/Waterford) SAC (site code 2170) Conservation objectives supporting document- woodland habitats*
- King J. J. and Linnane S. M. (2004) *The status and distribution of lamprey and shad in the Slaney and Munster Blackwater SACs. Irish Wildlife Manuals, No. 14.* National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland
- NS 2 (2010) *Freshwater Pearl Mussel. Second Draft. Munster Blackwater Sub-basin management plan.*
- Sweeney, N. and Sweeney, P. (2017) *Expansion of the White-clawed Crayfish (Austropotamobius pallipes (Lereboullet)) population in the Munster Blackwater. Irish Naturalists' Journal 35: 94-98*
- DixonBrosnan (2020). *Natura Impact Statement (NIS) Emergency Maintenance Works Fermoy, Co. Cork*
- Sweeney (2012). *Ecological Assessment of Likely Significant Impacts of Proposed Repairs to the Fermoy Weir Fish Pass*
- Sweeney (2014). *Likely Significant Impacts of a Proposed Fish Bypass Channel at Fermoy Weir – Screening Statement and NIS*
- Sweeney (2017). *Ecological Assessment of Likely Significant Impacts of Proposed Rehabilitation Works to the Fermoy Weir*
- *Fermoy flood relief scheme – additional bat and Otter surveys 2007* (DixonBrosnan 2007)
- *Flood Relief Scheme Fermoy, Co. Cork* (Punch & Partners, 2005)
- Invasive Species Ireland - http://www.invasivespeciesireland.com
- Best Practice Guidance for Habitat Survey and Mapping (Heritage Council, 2011)
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority, 2009)

- *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)* European Union, 2017
- *Assessment of plans & projects in relation to N2K sites – Methodological Guidance* (EC 2021)
- *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive* (EC 2021) and
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (DoHLGH 2018).

5. Natura 2000 Sites

5.1 Designated sites within likely zone of impact

In accordance with the European Commission Methodological Guidance (EC 2018), a list of Natura 2000 sites that can be potentially affected by the proposed works has been compiled. All candidate SAC's (cSAC) and SPAs sites within the likely zone of impact of the proposed works have been identified in **Table 1** and shown in **Figure 4**.

The proposed works will take place in two working areas i.e. Mill Island and Mill Road. The Mill Island site is located c.5m south/east of the Blackwater River (Cork/Waterford) SAC. The Mill Road located is located c.40m west of the Blackwater River (Cork/Waterford) SAC. The following potential pathways have been identified which could impact on the conservation objectives of the Natura 2000 sites within the likely zone of impact:

- Potential effects from loss of habitat
- Potential effects on water quality
- Potential effects from noise and disturbance
- Potential effects from the spread of invasive species and
- In-combination effects.

The proposed works could potentially result in contamination of local waters and lead to a reduction in water quality and the spread of invasive species within the SAC. Noise and disturbance during the proposed works could potentially impact on terrestrial qualifying species i.e., Otter, for the Blackwater River (Cork/Waterford) SAC. It is noted that no in channel or riverbank works are proposed and therefore there is no potential for direct injury/mortality impacts or disturbance impacts to aquatic qualifying species such as lamprey species, Atlantic Salmon, Freshwater Pearl Mussel and White-clawed Crayfish. However, given the proximity of the SAC, habitats within the proposed development site boundary could potentially provide habitat for QI species such as Otter.

The Blackwater Callows SPA is located 915m northeast of the proposed works site. SCIs from the SPA e.g., Teal, Whooper Swan, could potentially forage within the River Blackwater adjacent to the proposed works. Therefore, SCIs could be impacted by disturbance to *ex situ*

terrestrial habitats during the proposed works. Changes in water quality could potentially impact on the qualifying interests for the SPA.

Therefore, a source-pathway-receptor link has been identified between the source (proposed works) and the receptor (Blackwater River (Cork/Waterford) SAC and Blackwater Callows SPA) via a potential pathway (habitat loss, impacts on water quality, noise and disturbance, spread of invasive species). Further information on these Natura 2000 sites is provided below and full site synopses are included **Appendix 1**.

Given the distances involved, the lack of hydrological or other connection, no pathway for impact on any other Natura 2000 site has been identified.

Table 1. Natura 2000 sites and their location relative to the proposed works area

Natura 2000 Sites	Site Code	Qualifying Interests/Special Conservation Interests	Distance at closest point and potential source-pathway-receptor link
Special Area of Conservation (SAC)			
Blackwater River (Cork/Waterford) SAC	002170	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] 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] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Alosa fallax fallax* (Twaite Shad) [1103]	0km (within SAC). A source-pathway-receptor link has been identified between the source (proposed works area) and the receptor (Blackwater River (Cork/Waterford) SAC) via a potential pathway (impacts on water quality, noise and disturbance, spread of invasive species).

Natura 2000 Sites	Site Code	Qualifying Interests/Special Conservation Interests	Distance at closest point and potential source-pathway-receptor link
		Salmo salar (Salmon) [1106] *Lutra lutra* (Otter) [1355] *Trichomanes speciosum* (Killarney Fern) [1421]	
Special Protection Area			
Blackwater Callows SPA	004094	Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Black-tailed Godwit (*Limosa limosa*) [A156] Wetland and Waterbirds [A999]	915m northeast. A source-pathway-receptor link has been identified between the source (proposed works area) and the receptor (Blackwater Callows SPA) via a potential pathway (disturbance and loss of *ex situ* foraging habitat and impacts on water quality).

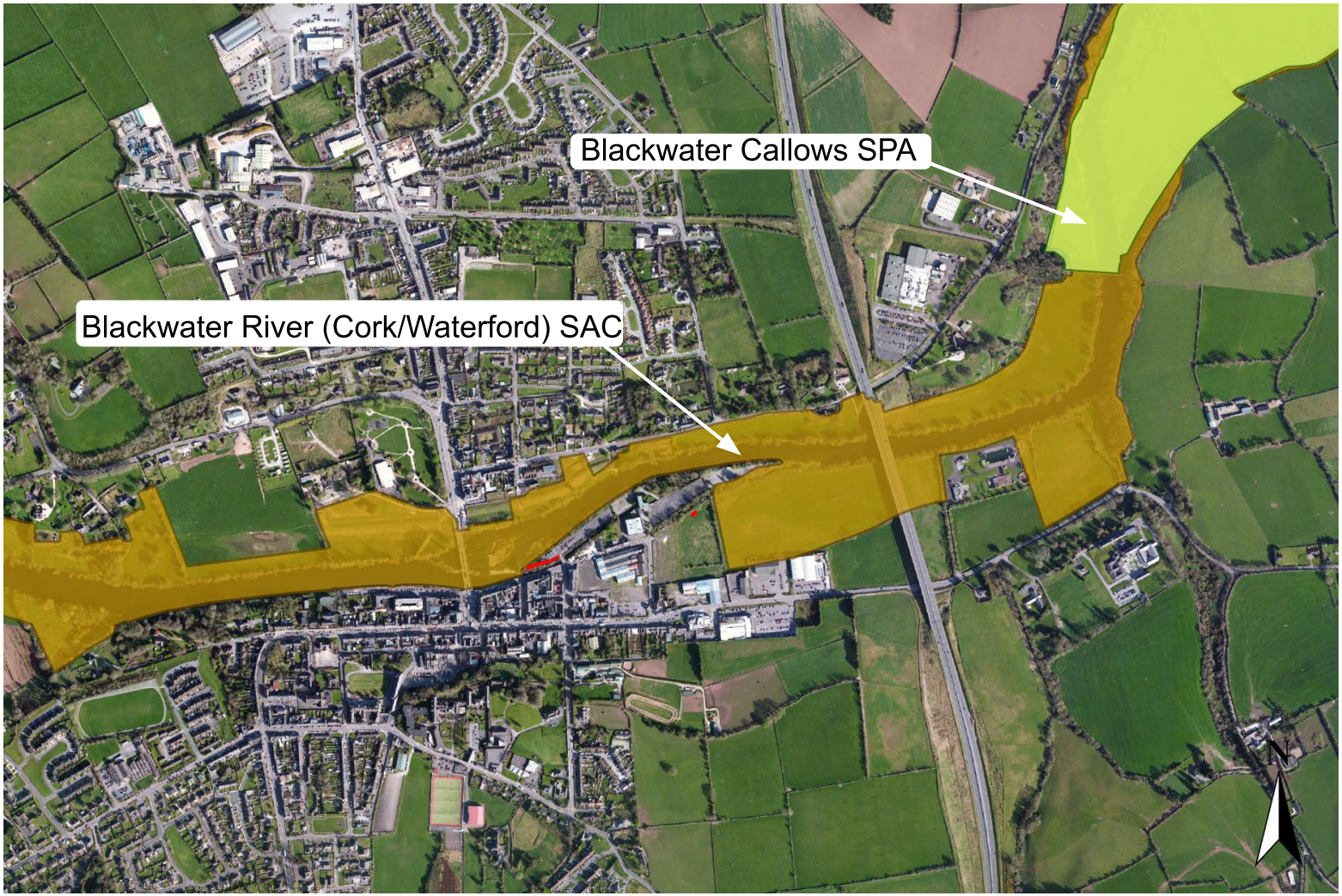


Figure 4. Natura 2000 sites within likely zone of impact of the proposed works site (approximate red line boundary) | Source EPA Envision Mapping | Not to scale

5.2 Blackwater River (Cork/Waterford) SAC

The Blackwater River (Cork/Waterford) SAC is a very large site drains a major part of County Cork and five mountain ranges. The site supports a high diversity of Annex I habitats and Annex II species of the E.U. Habitats Directive, including Atlantic salmon and Otter. The site designated as the Blackwater River cSAC consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond and as far downstream as the tidal stretches into Youghal Harbour as well as the many tributaries along the way, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. The designated site covers a total area of 15,048 ha.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore, it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

A full site synopsis for the River Blackwater (Cork/Waterford) SAC is included as **Appendix 1** of this report.

5.3 Blackwater Callows SPA

The site comprises a 23 km stretch of the River Blackwater, running in a west to east direction between Fermoy and Lismore. It includes the river channel and strips of seasonally flooded grassland within the flood plain. Sandstone ridges parallel to the river confine the area of flooding to a relatively narrow corridor. The lower stretch, from Ballyduff to Lismore, is more subject to flooding than the upper part. The river channel has a well-developed aquatic community, along with emergent swamp vegetation in places. Most of the land above the banks is improved for agriculture, with only occasional areas of fringing marshland, wet grassland and wet woodland (mostly Salix spp.) still present. Some arable areas occur. The site is of high importance for wintering waterfowl. It supports an internationally important population of *Cygnus cygnus* and nationally important populations of *Anas penelope*, *Anas crecca* and *Limosa limosa*. The population of *Limosa limosa* has exceeded the threshold for international importance at times. Formerly it had a regular population of *Cygnus columbarius bewickii* but this no longer occurs, reflecting a contraction of range at a national level. *Egretta garzetta* breeds locally and this species is now a regular visitor to the site. The Blackwater system is an important salmonid fishery and is of high conservation value for *Salmo salar*. It also supports important populations of *Lampetra planeri*, *L. fluviatilis*, *Petromyzon marinus* and *Alosa fallax fallax. Lutra lutra* is widespread throughout the site.

A full site synopsis for the Blackwater Callows SPA is included as **Appendix 1** of this report.

5.4 Natura 2000 sites – Features of interests and conservation objectives.

The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as 'qualifying interests' and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A 'qualifying interest' is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland.

The conservation objectives for the relevant Natura 2000 sites are detailed in:

- *NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.*

- *NPWS (2024) Conservation Objectives: Blackwater Callows SPA 004094. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.*

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis. The species and habitats listed as qualifying interests for the Blackwater River (Cork/Waterford) SAC, and Blackwater Callows SPA are of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive and Annex I of the E.U. Birds Directive.

The species and habitats listed as qualifying interests for the Blackwater River (Cork/Waterford) SAC, and Blackwater Callows SPA is provided below, and specific conservation objectives are included in **Table 2 to Table 4**.

Table 2. Qualifying Species for the Blackwater River (Cork/Waterford) SAC

Species code	Species		*Conservation objective*
1029	Freshwater Pearl Mussel	*Margaritifera margaritifera*	Restore
1092	White-clawed crayfish	*Austropotamobius pallipes*	Maintain
1095	Sea Lamprey	*Petromyzon marinus*	Restore
1096	Brook Lamprey	*Lampetra planeri*	Maintain
1099	River Lamprey	*Lampetra fluviatilis*	Maintain
1103	Twaite shad	*Alosa fallax*	Restore
1106	Atlantic Salmon	*Salmo salar*	Maintain
1355	Otter	*Lutra lutra*	Restore
1421	Killarney Fern	*Trichomanes speciosum*	Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 3. Qualifying Habitats for the Blackwater River (Cork/Waterford) SAC

Habitat Code	Habitat	Conservation objective
1130	Estuaries	Maintain
1220	*Perennial vegetation of stony banks*	Maintain
1140	*Mudflats and sandflats not covered by seawater at low tide*	Maintain
1310	Salicornia and other annuals colonizing mud and sand	Maintain
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Restore
1410	Mediterranean salt meadows (*Juncetalia maritimi*)	Maintain
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation	Maintain

Habitat Code	Habitat	Conservation objective
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)	Restore
91J0	*Taxus baccata woods of the British Isles	Under Review
91A0	Old sessile oak woods with Ilex and Blechnum in British Isles	Restore

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 4. Qualifying Habitats and/Species for Blackwater Callows SPA

Species code	Species	*Conservation objective*
A038	Whooper Swan (Cygnus cygnus)	Maintain
A050	Wigeon (*Anas penelope*)	Restore
A052	Teal (*Anas crecca*)	Restore
A156	Black-tailed Godwit (*Limosa limosa*)	Maintain
A999	Wetland and Waterbirds	Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

5.5 Status of qualifying species and habitats for the Blackwater River (Cork/Waterford) SAC

5.5.1 Twaite shad

These fish are one of the rarest fish species to breed in Irish freshwaters. Shad have an anadromous life cycle and have been recorded in the lower reaches of the River Blackwater during monitoring in 2003 (King and Linnane, 2004). Twenty-five fish were captured on rod and line at Cappoquin, the head of the tide in the River Blackwater. In another sampling operation a single twaite shad was captured on rod and line in the Careysville fishery, near Fermoy (King and Linnane, 2004). Dufour *et al.* (2008) reported that sampling at the top of the tidal limit in the River Blackwater in 2005 yielded very low numbers. Any adverse impact on water quality arising from sedimentation or eutrophication could potentially affect this species.

5.5.2 Otter

Otters *Lutra lutra*, along with their breeding and resting places are protected under the provisions of the Wildlife Act 1976, as amended by the Wildlife (Amendment) Act, 2000. Otters have additional protection because of their inclusion in Annex II and Annex IV of the Habitats Direct which is transposed into Irish law in the European Communities (Natural Habitats) Regulations (S.I 94 of 1997), as amended. Otters are also listed as requiring strict protection in Appendix II of the Berne Convention on the Conservation of European Wildlife and Natural Habitats and are included in the Convention on International Trade of Endangered species

(CITES)). Although rare in parts of Europe, they are widely distributed in the Irish countryside in both marine and freshwater habitats.

This species is a qualifying interest for the Blackwater River (Cork/Waterford) SAC, which is one of the most important sites in Ireland for this species. Results from the most recent national survey found that 78% of sites surveyed within the SAC recorded the presence of otters. The National Biodiversity Centre Database shows Otter records (3 records, most recently from October 2015) for the 1km square in which the proposed works is located (W8299).

No holts or couches were recorded within the proposed development area. However any deterioration in water quality could potentially impact on this species by reducing the availability of prey.

5.5.3 Freshwater Pearl Mussel

Freshwater pearl mussel is listed on Annexes II and V of the EU Habitats Directive (1992). Annex II of the Habitats Directive requires that listed species' habitats are maintained or, where appropriate, restored to favourable conservation status. Under Annex V of the Habitats Directive this species is listed as 'a species of community interests whose taking in the wild and exploitation may be subject to management measures.' This species is also listed on Appendix III of the Bern Convention which requires that 'any exploitation of wild fauna specified in Appendix III must be regulated in order to keep the populations out of danger (temporary or local prohibition of exploitation, regulation of transport or sale, etc.)'. The Freshwater pearl mussel is listed as 'Critically Endangered' in the Republic of Ireland according to the 'Ireland Red List No. 2: Non-Marine Molluscs' (Byrne *et al*., 2009).This species is legally protected in Ireland under Schedule 1 of the Wildlife Act (1976) (Protection of Wild Animals) (S.I. No. 112, 1990) as per the requirements of Section 23 of the Wildlife Act (1976), amended under Section 31 of the Wildlife Act (2000).

The freshwater pearl mussel is known from the main Blackwater River, two tributaries (Owentaraglin and Allow) and the Licky River, which discharges to the Upper Blackwater Estuary. 168km encompasses the length of channel from the most upstream records of the freshwater pearl mussel to the most downstream records of live mussels, and contained within the freshwater pearl mussel catchment boundaries**.** The SAC has three populations listed on the European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations of 2009 (Government of Ireland, 2009b): Munster Blackwater, Allow (Munster Blackwater) and Licky. The separation of the main channel Blackwater and Allow into two populations is artificial and no longer considered appropriate. The Licky, however, is a distinct population, being separated from the Blackwater by brackish water and a hydrological distance of approx. 30km, making genetic exchange very unlikely. Information on the size of the population in the Blackwater and its tributaries is poor, but estimated at less than 10,000 for the Blackwater main channel (target set at 10,000); and between 10,000 and 20,000 for the Allow tributary (target set at 15,000) (DEHLG, 2010a, 2010b). The Licky population was estimated as just greater than 10,000 in 2005, but was estimated to have declined to approx. 4,700 by 2009 (target set at 10,000) (Ross, 2005; DEHLG, 2010c).

5.5.4 White-clawed Crayfish

NS (2010) notes that White-clawed Crayfish was recorded in the Blackwater for the first time in September 2009. The NBDC has records of this species from Longfield's Bridge in 2015 approximately 4km upstream of Mallow Town Park. There is evidence that this species is currently expanding its range within the Blackwater with reports of this species occurring along the main channel upstream of Mallow and downstream of the confluence of the Awbeg and main River Blackwater channel (Sweeney & Sweeney 2017). However, Crayfish plague, first recorded within the Blackwater catchment in 2023, poses a considerable threat to the future of this species within the Blackwater and recent surveys around Fermoy (Ross Macklin pers. comm) found that local population was significantly impacted.

5.5.5 Lamprey species (*Petromyzon marinus, Lampetra planeri, Lampetra fluviatilis*)

The Brook lamprey is the smallest of the three-lamprey species native to Ireland and it is the only one of the three species that is non-parasitic and spends all its life in freshwater (Maitland & Campbell 1992). The River lamprey is larger in size than the Brook lamprey and exhibits an anadromous life cycle (i.e. anadromous fish spend most of their adult lives in salt water and migrate to freshwater rivers and lakes to reproduce). The Sea lamprey is the largest of the Irish lampreys. Brook lamprey and Sea lamprey are listed in Appendix II, while River lamprey is listed in both Appendices II and IV of the Habitats Directive (92:43: EEC). All three species are listed in Appendix III of the Berne Convention.

The distribution of Lamprey species in the Blackwater River9Cork/Waterford) SAC is detailed in King & Linnane (2004). Juvenile River/Brook and Sea Lamprey have been recorded from the main Blackwater channel and from the following watercourses: Licky, Bride, Araglin, Clyda, Allow, Owenkeal, Finnow, Owentaraglin, Awanaskirtaun River, Crooked River and Awbeg. Relatively high numbers of all three lamprey species were recorded from the main channel. Petit (2004) noted that

"*The sea lamprey is commonly seen as far upstream as Mallow, where it has been observed spawning. River lamprey has been commonly encountered in the R. Blackwater, and brook lamprey adults have been caught in the upper reaches of the river.*"

Maitland and Campbell (1992) list the threats to lamprey as water pollution, barriers to migration and habitat degradation. In Ireland, the single biggest factor limiting the distribution of anadromous lamprey are upstream barriers. Although the data available to date are limited, the impact of artificial barriers on the distribution of lampreys on a number of major rivers is evident. Ecofact (2015) noted that a recently installed dam on a River Blackwater tributary, the Tanyard Stream would severely restricted movement for lamprey and other species on this stream.

5.5.6 Atlantic salmon (*Salmo salar*)

Salmon are anadromous migratory fish. Adult fish migrate from the sea to river/stream spawning areas, where the young fish live out their juvenile life stages before migrating as adults to the sea. The Blackwater system is considered one of the most important and prolific salmon rivers in Ireland and the main channel is a designated salmonid water (European Communities (Quality of Salmonid Waters) Regulations, 1988.

Salmonoids require clean gravels to complete their life cycle. The infilling of clean gravels with sediment can render them unsuitable for spawning salmonoids and lamprey, or if sedimentation occurs during or immediately after spawning this can cause a reduction in oxygen and lead to death of the larvae.

5.5.7 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.

The EU (2003) definition of the habitat water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation is very broad. There is no satisfactory definition of the habitat and its sub-types or their distribution in Ireland and a lack of relevant monitoring data concerning the habitat. This habitat can occur over a wide range of physical conditions, from acid, oligotrophic, flashy upland streams dominated by bryophytes to more eutrophic, slow flowing streams dominated by *Ranunculus* and *Callitriche* species. While the former will be sensitive to diffuse pollution the latter, especially in shallow streams, will be relatively more resistant.

This habitat type is commonly distributed along the main Blackwater channel and within its tributaries including both the Allow and Dalua rivers, and includes species such as Pond Watercrowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus sp.),* Canadian Waterweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*) and Water Milfoil (*Myriophyllum spp.).*

The NPWS conservation objectives for the Blackwater River (Cork/Waterford) SAC (NPWS 2012) notes the following in relation to this habitat:

The full distribution of this habitat and its sub-types in this site are currently unknown. The basis of the selection of the SAC for the habitat was the presence of plant species listed in the Interpretation Manual (European Commission, 2007), recorded during the Natural Heritage Area (NHA) survey of the river (internal NPWS files). Further records of these and other aquatic plant species in the Blackwater can be found in Green (2008) and O'Mahony (2009). The dominant floating leaved species appears to be the common and widespread stream water-crowfoot (Ranunculus penicillatus subsp. penicillatus). No high conservation value subtypes are known to occur in the SAC and further survey is required to determine whether any such are present. Only one rare/threatened vascular plant species is known to occur in the SAC, the protected opposite-leaved pondweed (Groenlandia densa), which is abundant in the tidal stretches around Cappoquin.

5.6 Status of qualifying species and habitats for the Blackwater Callows SPA potentially affected by the proposed works.

5.6.1 Whooper Swan

Whooper Swan is a SCI for Blackwater Callows SPA. Whooper Swans are a winter visitor to wetlands throughout Ireland from October to April. They are primarily herbivorous, feeding on aquatic plants, grasses and agricultural plants such as grain and vegetables. The most recent published swan census (Hall *et al*. 2012) indicated that just over 50% of the habitat usage records for Whooper Swans were for dry improved pasture with 37.5% seen on arable land. Whooper Swan in Ireland are part of the Icelandic population which migrate south for the winter to Ireland and the UK. Whooper Swan occurs in numbers of international importance (212) within the Blackwater Callows SPA.

5.6.2 Wigeon

Wigeon is a SCI for Blackwater Callows SPA. Wigeon are common and widespread throughout Ireland in the winter where they occur on the coast and in inland wetlands, lakes and rivers. Non-breeding birds occur in the summer months and they rarely breed in Ireland. Away from coasts they graze on algae and regularly feed on grasslands and cereal crops. They are a amber-listed species of conservation concern (Gilbert *et al.* 2021). The Blackwater Callows SPA supports nationally important populations of Wigeon (2,313).

5.6.3 Teal

Teal is a SCI for Blackwater Callows SPA. Wintering Teal are widespread in Ireland on wetlands both coastal and inland. They feed predominately on small seeds, with algae (Ulva spp.) and molluscs also taken. They do breed in Ireland, although in smaller numbers, and usually nest near small freshwater lakes or pools and small upland streams away from the coast. The Blackwater Callows SPA supports nationally important populations of Teal (898).

5.6.4 Black-tailed Godwit

Black-tailed Godwit is a SCI for the Blackwater Callows SPA. Black-tailed Godwit are a winter visitor from Iceland. They are an amber listed species in Ireland as they winter in less than ten sites. Visual and tactile feeders, they feed on a range of invertebrates, including bivalves, polychaete worms and shore crabs. Black-tailed Godwit prefer to feed on muddier estuaries, but also feed in brackish pools and on nearby rough pasture. While on pasture, they feed on the larvae of crane fly (Tipulidae) and on the amphipod *Corophium volutator*. They have also been recorded feeding on grain in stubble fields on the Wexford Slobs. Nine breeding sites were identified in Ireland during the last breeding atlas. The Blackwater Callows SPA supports nationally important populations of Black-tailed Godwit (251).

5.6.5 Wetlands and waterbirds

Wetlands and Waterbirds is a SCI for the Blackwater Callows SPA. The wetlands around the Blackwater Callows include areas of reed bed, marsh and wet grassland habitats. These habitats are important for listed species and pollution control. The biggest threats to these habitats include direct loss through development and drainage and eutrophication.

6. Water Quality - River Basin Management Plan for Ireland 2022-2027 (3rd Cycle)

The Water Framework Directive (WFD) sets out the environmental objectives which are required to be met through the process of river basin planning and implementation of those plans. Specific objectives are set out for surface water, groundwater and protected areas. The challenges that must be overcome in order to achieve those objectives are very significant. Therefore, a key purpose of the River Basin Management Plan (RBMP) is to set out priorities and ensure that implementation is guided by these priorities.

The third-cycle RBMP aims to build on the progress made during the first cycle. Key measures during the first cycle included the licensing of urban waste-water discharges (with an associated investment in urban waste-water treatment) and the implementation of the Nitrates Action Programme (Good Agricultural Practice Regulations). The former measure has resulted in significant progress in terms both of compliance levels and of the impact of urban waste-water on water quality. The latter provides a considerable environmental baseline which all Irish farmers must achieve and has resulted in improving trends in the level of nitrates and phosphates in rivers and groundwater. It is acknowledged, however, that sufficient progress has not been made in developing and implementing supporting measures during the first and second cycles.

Overall, RBMP assesses the quality of water in Ireland and presents detailed scientific characterisation of our water bodies. The characterisation process also takes into account wider water quality considerations, such as the special water-quality requirements of protected areas. The characterisation process identifies those water bodies that are At Risk of not meeting the objectives of the WFD, and the process also identifies the significant pressures causing this risk. Based on an assessment of risk and pressures, a programme of measures has been developed to address the identified pressures and work towards achieving the required objectives for water quality and protected areas. Data relating to the watercourses within the proposed works site is provided in **Table 5** and shown in **Figure 5**.

Table 5. Water Framework Directive Data – Relevant data

Catchment: Blackwater (Munster) (Code 18)
This catchment includes the area drained by the River Blackwater and all streams entering tidal water between East Point and Knockaverry, Youghal, Co. Cork, draining a total area of 3,310km². The largest urban centre in the catchment is Mallow. The other main urban centres in this catchment are Fermoy, Mitchelstown, Youghal, Kanturk and Millstreet. The total population of the catchment is approximately 109,030 with a population density of 33 people per km². The Blackwater rises on the southern side of Knockanefune in the Mullaghareirk Mountains and flows south to Rathmore where it is joined by the Cullavaw River and the Owentaraglin River. The Blackwater continues eastwards to Banteer where it is joined by the Allow River from the north and the Glen River from the south. On its route east, the Blackwater is joined by the Awbeg, and the Cyldagh River before flowing through Mallow and eastwards to Fermoy. Downstream of Fermoy, the river is joined by its tributaries, the Rivers Funsion, Ariglin and Owennashad. The Blackwater becomes tidal, before turning abruptly south at Cappoquin where the Glennafilla River joins from the northeast. The tidal Blackwater is joined by the Finisk River and the Bride River from the west downstream of Villerstown. The Goish, Licky, Glendine and Tourig Rivers drain the lands adjacent to the estuarine part of the catchment, and the Blackwater then flows past Youghal and out to sea through Youghal Harbour.

Catchment: Blackwater (Munster) (Code 18)

This catchment includes the area drained by the River Blackwater and all streams entering tidal water between East Point and Knockaverry, Youghal, Co. Cork, draining a total area of 3,310km². The largest urban centre in the catchment is Mallow. The other main urban centres in this catchment are Fermoy, Mitchelstown, Youghal, Kanturk and Millstreet. The total population of the catchment is approximately 109,030 with a population density of 33 people per km².

The proposed works area falls close to the eastern boundary of Sub catchment Blackwater [Munster]_SC_110.

Blackwater [Munster]_SC_110. 2nd Cycle Summary

The issues on the main channel occur in the westerly part of the sub catchment and range from elevated nutrients due to a combination of point (Section 4 and licenced facility) and urban diffuse sources on Blackwater (Munster)_130 to unknown pressures driving moderate fish status on Blackwater (Munster)_160. On a tributary to the Blackwater, Ross Killavulleen_010, ecological status declined to Moderate and the significant pressures are a combination of hydromorphology, forestry and nutrients from an urban wastewater treatment plant.

Blackwater [Munster]_SC_110– 3rd Cycle Summary

River Waterbodies relevant to the proposed project

Waterbody	WFD Risk	WFD Status 2016-2021	Significant pressures
Blackwater (Munster)_190	Good	Not at risk	None
Blackwater (Munster)_200	Good	Not at risk	None

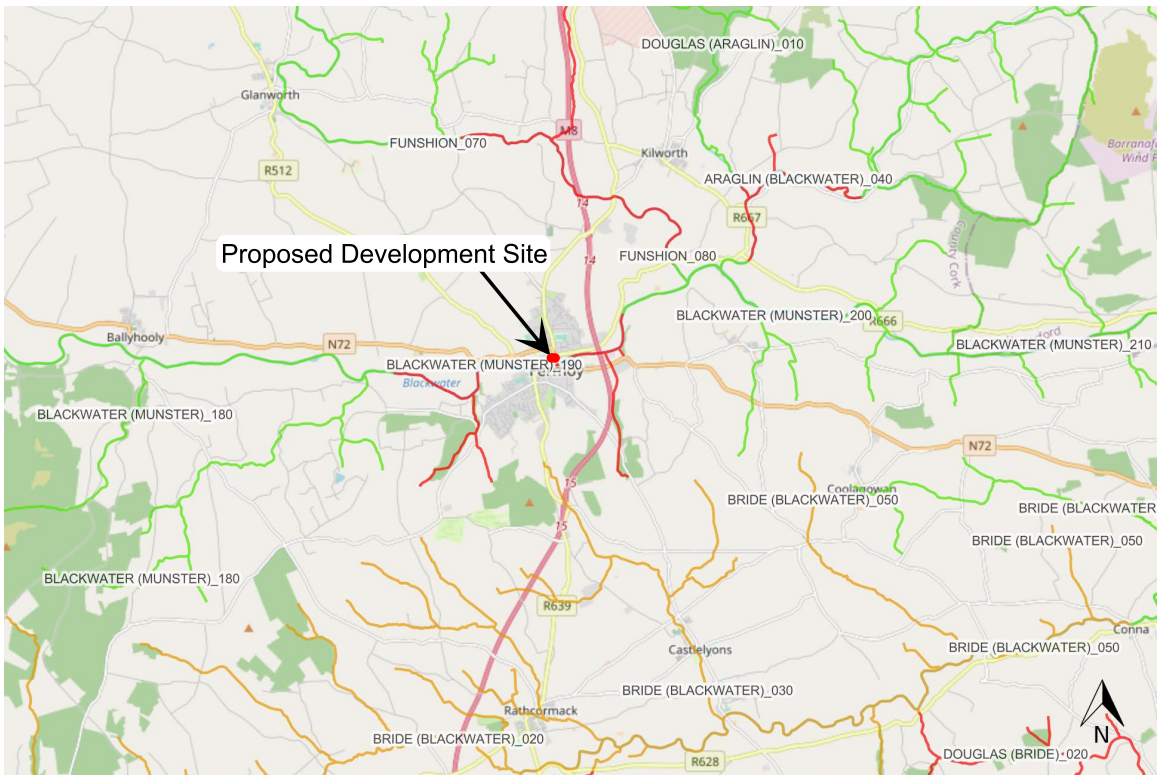


Figure 5. Blackwater [Munster] – River Waterbodies (3rd cycle) relevant to the proposed works (outlined in red) | Source: EPA Envision mapping (https://gis.epa.ie/EPAMaps/) | Not to scale

7. Site survey

A site walkover survey was carried out on the 7th of May 2025. Habitat mapping was carried out in line with the methodology outlined in the Heritage Council Publication, *Best Practice Guidance for Habitat Survey and Mapping* (Heritage Council, 2011). The terrestrial and aquatic habitats within the proposed development site were classified using the classification scheme outlined in the Heritage council publication *A Guide to Habitats in Ireland* (Fossitt, 2000) and cross referenced with Annex I Habitats where required.

A current overview of habitats recorded within the proposed development sites are shown in **Figure 6 and Figure 7** and the habitats recorded on site are described in **Table 6**. Site photographs are also included below**.**

The Mill Race is located to the south of the Mill Island pumping station. Flows were stagnant within the Mill Race during the site visit and this is unlikely to support significant numbers of fish. No signs of Otter were recorded during the site survey. No watercourses or wetland habitats are present within the proposed development site boundaries.

Table 6. Habitats recorded during site survey

Habitat	Description
Mill Island Pumping Station	
Dry neutral grassland GS1/Dry meadows and grassy verge GS2	A strip of dry, neutral grassland/dry meadows and grassy verge runs between the Mill race (located to the south) and an old stone wall (to the north). Species recorded include Red fescue, Cocksfoot, Creeping butter, Ribwort plantain, Bindweed, St. John's wort, Immature Sycamore, Bramble, Ivy, Stitchwort, Hogweed, Common field thistle, Willowherb, Daisy and Winter heliotrope. It is noted that this has grown over the Grasscrete paving that was laid at the site. 

Habitat	Description
Mill Island Pumping Station	
	Plate 1. Semi-natural grassland within proposed development site  Plate 2. Semi-natural grassland within proposed development site
Stonewalls and other stonework BL1	An old stonewall with new render and in good condition runs along the northern boundary of the site. Occasional Buddleia, Oxeye daisy and Red fescue are present along the wall, but the structure is largely devoid of vegetation.  Plate 3. Old stone wall with new render
Buildings and artificial surfaces BL3	The existing pumping station and curtilage are located at the west of the site.

Habitat	Description
Mill Island Pumping Station	
	 Plate 4. Existing pumping station
Mill Road Pumping Station	
Buildings and artificial surfaces BL3	The Mill Road pumping station is located on the edge of an existing car park/hardstanding area. Palisade fencing surrounds the structure, with an old stone wall along the northern boundary and the hardstanding areas of the car park surrounding the structure. Some vegetation has colonised the margins of the compound including Wild Clematis, Dandelion, immature Sycamore and Ragweed  Plate 5. Mill Road Pumping Station



Figure 6. Habitats recorded within the Mill Island site boundary



Figure 7. Habitat recorded within the Mill Road pumping Station

Non-native plants are defined as those plants which have been introduced outside of their native range by humans and their activities, either purposefully or accidentally. Invasive non-native species are so-called as they typically display one or more of the following characteristics or features: (1) prolific reproduction through seed dispersal and/or re-growth from plant fragments; (2) rapid growth patterns; and, (3) resistance to standard weed control methods.

Where a non-native species displays invasive qualities and is not managed it can potentially: (1) out compete native vegetation, affecting plant community structure and habitat for wildlife; (2) cause damage to infrastructure including road carriageways, footpaths, walls and foundations; and, (3) have an adverse effect on landscape quality.

Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 make it an offence to plant, disperse, allow dispersal or cause the spread of certain species e.g. Japanese knotweed and Rhododendron, keep the plant in possession for purpose of sale, breeding, reproduction, propagation, distribution, introduction or release, keep anything from which the plant can be reproduced or propagated from the species, without a granted licence and keep any vector material for the purposes of breeding, distribution, introduction or release. Regulation 49 deals with the 'Prohibition on introduction and dispersal'

while Regulation 50 deals with the 'Prohibition on dealing with and keeping certain species'. Regulation 50 has yet to be brought into Irish law. Regulation 74 is a transitional provision in relation to Regulation 49 and 50.

The control of invasive species in Ireland comes under the Wildlife (Amendment) Act 2000, where it states that

'Any person who— [...] plants or otherwise causes to grow in a wild state in any place in the State any species of flora, or the flowers, roots, seeds or spores of flora, ['refers only to exotic species thereof']][...] otherwise than under and in accordance with a licence granted in that behalf by the Minister shall be guilty of an offence.'

The Birds and Natural Habitats Regulations 2011 (SI 477 of 2011), Section 49(2) prohibits the introduction and dispersal of species listed in the Third Schedule, which includes Japanese Knotweed and Himalayan Balsam *Impatiens glandulifera*, as follows: "any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow [….] shall be guilty of an offence."

No third schedule species were recorded within the proposed development site. The low impact invasive species (as classified by the NBDC) Winter Heliotrope and the medium impact species Buddleia and Wild Clematis were recorded within the proposed development site. These species are not included in the Third Schedule of the Birds and Natural Habitats Regulations 2011 (SI 477 of 2011). Therefore, its presence at the site does not have the potential to lead to an offence under the Birds and Natural Habitats Regulations 2011 (S.I. 477 of 2011).

8. Potential Impacts

Potential impacts relate to habitat loss, changes to water quality, the spread of invasive species and disturbance effects during the proposed works. Based on the *Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC* (European Commission (EC), 2018 and CIEEM guidelines '*Guidelines for Ecological Impact Assessment'* (CIEEM, 2019) impacts are listed as significant using a combination of professional judgement and criteria or standards where available, if impacts have the potential to have a significant impact on the ecological integrity on the habitats and species for which the site is designated.

The potential impacts associated with the proposed works are discussed in the following sections with respect to their likelihood to have significant impacts on European sites.

As part of the assessment direct, indirect and in-combination impacts were considered. Direct impacts refer to habitat loss or fragmentation arising from land-take requirements for development. Indirect and secondary impacts do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect impacts of the project/plan - in combination with other plans and projects have been established.

Potential effects were identified as follows:

- Potential effects from loss of habitat
- Potential effects from noise and disturbance

- Potential effects on water quality
- Potential effects from spread of invasive species
- In-combination effects.

8.1 Loss of Habitat

8.1.1 Blackwater River (Cork/Waterford) SAC

Any habitat loss of Natura 2000 sites or deterioration in habitat quality would reduce the extent of habitat available for QI/SCI species. This could potentially decrease the viability of existing QI habitats and increase the pressure on existing habitat and may result in further deterioration.

As shown in **Figure 4**, part of the Mill Island pumping station is located c.5m from the Blackwater River (Cork/Waterford) SAC. The Mill Road site is located c.40m from the SAC boundary. As outlined in **Figure 6**, there are no qualifying habitats for the SAC located within the proposed development site boundary. The works are confined the existing pumping station sites and there will be no impact on QI habitats within the SAC. There will be no works within the main channel of the River Blackwater or on the riverbanks. There are no habitats within the works areas which correspond to habitats listed on Annex I of the Habitats Directive or to qualifying habitats for the Blackwater River (Cork/Waterford) SAC. There is no foraging habitat for Otter within these works area. No likely significant effects on habitats have been identified.

8.1.2 Blackwater Callows SPA

The Blackwater Callows SPA is located 915m from the proposed works site. Given the distance involved no potential effect on the Blackwater Callows SPA via habitat loss has been identified. No likely significant effects on habitats have been identified.

8.2 Potential impacts from noise and disturbance

8.2.1 Blackwater River (Cork/Waterford) SAC.

Potentially increased noise and disturbance associated with the site works could cause disturbance/displacement of fauna. Otter is listed on Annex II of the Habitats Directive and is a QI for the Blackwater River (Cork/Waterford) SAC. Otters are known to use sections of the River Blackwater within Fermoy town (Triturus Environmental Ltd. (2021)). Potential impacts could arise due to disturbance of Otter as a result of increased noise and activity during site works. This could potentially lead to changes in feeding behaviour which if of sufficient severity could impact on reproductive success. Disturbance of breeding Otter could also have an impact on overall populations within the Blackwater River (Cork/Waterford) SAC. As noted above, no instream works are proposed and no potential for significant noise and disturbance to aquatic qualifying species has been identified.

The proposed works are located within the existing pumping stations curtilage and within the urban setting of Fermoy town. As outlined, the proposed development the use of a backup generator on a temporary basis in an emergency situation. No large machinery is required and construction works are minimal (involving installation of a small concrete plinth by hand).

No construction lighting is planned. While the generators have ben potential to cause a temporary increase in noise and activity during to the proposed works, noise and disturbance levels will not be significantly elevated above the baseline noise levels within Fermoy town. The working areas as outlined in **Figures 2 and 3** are small and no works will take place outside these areas. Any Otters which use this area are habituated to existing noise levels and unlikely to be significantly disturbed by the small scale of works proposed.

Given the existing noise environment, the small scale and temporary nature of works, no significant noise and disturbance to Otter and any other qualifying species is predicted to occur. No likely significant effects from visual or noise disturbances to QI species or the conservation objectives for the Blackwater Callows SPA have been identified.

8.2.2 Blackwater Callows SPA

SCI species for the Blackwater Callows SPA could potentially forage in the vicinity of the proposed works area, along the main channel of the River Blackwater and grassland habitats along its banks.

The grassland habitats within the works areas are not suitable for wading birds and waterfowl (i.e. too small and enclosed). Furthermore, if SCI birds were to use habitats in the vicinity of the proposed works site, these birds would already be habituated to existing noise and disturbance of Fermoy town centre and would be unlikely to change their foraging patterns during the proposed works. No likely significant effects from visual or noise disturbances to SCIs or the conservation objectives for the Blackwater River (Cork/Waterford) SAC have been identified.

8.3 Potential impacts from surface water runoff

Potential impacts on aquatic habitats which can arise from surface water emissions during the proposed works include inadvertent spillages of hydrocarbons from fuel and hydraulic fluid.

It is noted that environmental control measures will implemented during works in line with standard guidelines. Whilst the implementation of such measures during clearance works will assist in minimising impacts on the local environment, the implementation of these measures has not been taken into consideration in this screening report when reaching a conclusion as to the likely impact of the development on Natura 2000 sites.

Inadvertent spillages of hydrocarbon and/or other chemical substances during works could introduce toxic chemicals into the aquatic environment via direct means, surface water run-off or groundwater contamination. Some hydrocarbons exhibit an affinity for sediments and thus become entrapped in deposits from which they are only released by vigorous erosion or turbulence. Oil products may contain various highly toxic substances, such as benzene, toluene, naphthenic acids and xylene which are to some extent soluble in water; these penetrate into the fish and can have a direct toxic effect. The lighter oil fractions (including kerosene, petrol, benzene, toluene and xylene) are much more toxic to fish than the heavy fractions (heavy paraffins and tars). In the case of turbulent waters, the oil becomes dispersed as droplets into the water. In such cases, the gills of fish can become mechanically contaminated and their respiratory capacity reduced (Svobodova *et al*. 1993).

The proposed works will be carried out within the curtilage of the existing pumping stations and largely on existing hard standing areas. No large machinery is required and construction works are minimal (involving installation of a small concrete plinth by hand). There will be no additional requirement for the permanent storage of diesel on site. When there is a requirement to bring a mobile diesel generator to site in the event of a power outage/failure occurring with the permanent generator, the mobile generator brought to site will have its own inbuilt diesel tank. The mobile diesel generators will include internal bunded diesel tanks. There is no potential for the generation of significant silt or stockpiled material and significant hydrocarbon spillage. The works is located behind the Fermoy FRS walls and there in no risk of flooding to generators. Therefore, the is no potential for contamination runoff from site works and/or potential for pollution within the River Blackwater.

No likely significant effects from changes in water quality within the Blackwater River (Cork/Waterford) SAC and/or Blackwater Callows SPA have been identified.

8.4 Invasive Species

A number of low to medium impact invasive species were recorded within the works area i.e. Winter Heliotrope, Wild Clematis and Buddleia. No third schedule species were recorded. However, low and medium impact species can potentially effects habitats within Natura 2000 sites.

The proposed works are located within terrestrial habitats and there are no works proposed within or adjoining the river. The works involve accessing the existing pumping stations with personnel and connecting electrical cables. There is no potential for disturbance to vegetation. Both sites are accessed via the existing road network and there no potential for site traffic to pass material into the river network. Given the above, no likely significant effects from the spread of invasive species have been identified.

8.5 In-combination Impacts

In-combination impacts refer to a series of individual impacts that may, in combination, produce a significant effect. The underlying intention of this in combination provision is to take account of in-combination impacts from existing or proposed plans and projects and these will often only occur over time.

High negative pressures, threats and activities identified for the Blackwater River (Cork/Waterford) SAC include grazing, fertilisation, mowing and cutting of grassland. The area surrounding the proposed works site is heavily agriculturalized. Surface water run-off during the proposed works could potentially be contaminated with hydrocarbons or other chemicals. This could potentially lead to in-combination impacts within the Blackwater River (Cork/Waterford) SAC and Blackwater Callows SPA. Other developments which could potentially cause in-combination impacts are listed in **Table 7**.

Table 7. Other developments near site and potential cumulative impacts

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the European Network	
River Basin Management Plan 2022-2027	The project should comply with the environmental objectives of the Irish RBMP which are to be achieved generally by 2027. Ensure full compliance with relevant EU legislation Prevent deterioration Meeting the objectives for designated protected areas Protect high status waters Implement targeted actions and pilot schemes in focus sub-catchments aimed at: targeting water bodies close to meeting their objective and addressing more complex issues which will build knowledge for the third cycle.	The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects to European sites. The implementation of this plan will have a positive impact for the biodiversity. It will not contribute to in-combination or cumulative impacts with the proposed works.
Inland Fisheries Ireland Corporate Plan 2021-2025 The Inland Fisheries Act 2010.	To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and those pristine aquatic habitats are also enjoyed for other recreational uses. To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. To grow the number of anglers and ensure the needs of IFI's other key stakeholders are being met in a sustainable conservation focused manner. EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning Salmon and trout.	The implementation and compliance with key environmental issues and objectives of this corporate plan will result in positive on-combination effects to European sites. The implementation of this corporate plan will have a positive impact for biodiversity of inland fisheries and ecosystems. It will not contribute to in-combination or cumulative impacts with the proposed works.
Irish Water Capital Investment Plan 2020-2024	Proposals to upgrade and secure water services and water treatment services countrywide.	Likely net positive impact due to water conservation and more effective treatment of water.
Water Services Strategic Plan (WSSP, 2015)	Irish Water has prepared a Water Services Strategic Plan (WSSP, 2015), under Section 33 of the Water Service No. 2 Act of 2013 to address the delivery of strategic objectives which will	The WSSP forms the highest tier of asset management plans (Tier 1) which Irish Water prepare and it sets the overarching framework for subsequent detailed

Plans and Projects European Network	Key Policies/Issues/Objectives Directly Related to the Conservation of the	
	contribute towards improved water quality and biodiversity requirements through reducing: Habitat loss and disturbance from new / upgraded infrastructure; Species disturbance; Changes to water quality or quantity; and Nutrient enrichment /eutrophication.	implementation plans (Tier 2) and water services projects (Tier 3). The WSSP sets out the challenges we face as a country in relation to the provision of water services and identifies strategic national priorities. It includes Irish Water's short, medium and long-term objectives and identifies strategies to achieve these objectives. As such, the plan provides the context for subsequent detailed implementation plans (Tier 2) which will document the approach to be used for key water service areas such as water resource management, wastewater compliance and sludge management. The WSSP also sets out the strategic objectives against which the Irish Water Capital Investment Programme is developed. The current version of the CAP outlines the proposals for capital expenditure in terms of upgrades and new builds within the Irish Water owned assets. The overarching strategy was subject to AA and highlighted the need for additional plan/project environmental assessments to be carried out at the tier 2 and tier 3 level. Therefore, no likely significant in-combination effects are envisaged.
Applications under consideration	313763. Fermoy Weir Reinstatement and Fish Bypass Channel - The proposed project comprises the remediation of the existing weir, including reconstruction of breached sections of the weir, and the construction of a rough channel pool bypass to provide for fish passage around the weir. 303233 Change use of building to Primary Healthcare Centre, demolish existing link, extension of existing building, refurbishment of protected structure building, reconfigure car park and erect signage. Island Mills (Protected Structure), Mill Road, Fermoy, Co. Cork 02449. Demolition of the existing Lidl Licenced Discount Foodstore. The construction of the proposed new Licenced Discount Foodstore (2,125 sq m Gross Floor Area). N7 National	If the works were to run concurrently there could be the potential for slight disturbance effects. However, given the small scale of the current application, no significant in-combination disturbance effects have been identified. Future developments will only be granted permission where discharges from same meet with relevant water quality standards. Therefore, no in-combination effects with these projects have been identified.

Plans and Projects European Network	Key Policies/Issues/Objectives Directly Related to the Conservation of the	
	Secondary Road, Courthouse Road, Fermoy, Co. Cork	

In the absence of any significant potential impacts on the on the qualifying interests and conservation interests for the Blackwater River (Cork/Waterford) SAC or Blackwater Callows SPA and in the absence of significant impacts on the conservation objectives of these Natura 2000 sites, no potential in-combination impact from the proposed works has been identified.

9. Screening conclusion and statement

This AA screening report has been prepared to assess whether the proposed works, individually or in-combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European site(s).

The screening exercise was completed in compliance with the relevant European Commission guidance, national guidance, and case law. The potential impacts of the proposed works have been considered in the context of the European sites potentially affected, their qualifying interests or special conservation interests, and their conservation objectives.

Through an assessment of the source-pathway-receptor model, which considered the ZoI of effects from the proposed works and the potential in-combination effects with other plans or projects, the following findings were reported:

The proposed advanced works on the Fermoy FRS South Spare Generator Connections Project, at Fermoy, Co. Cork either alone or in-combination with other plans and/or projects, does not have the potential to significantly affect any European Site, in light of their conservation objectives.

Therefore, a Stage 2 Appropriate Assessment is deemed not to be required.

References

Applications for approval for Local Authority Developments made to An Bord Pleanála under 177AE of the Planning and Development Act, 2000, as amended (Appropriate Assessment): Guidelines for Local Authorities. An Bord Pleanála, Dublin (ABP, 2013).

Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a);

CJEU Case C 164/17 Edel Grace Peter Sweetman v An Bord Pleanála

Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DEHLG, 2010b);

Environmental Protection Agency Ireland (http://www.epa.ie/) accessed 06/05/25

European Commission, 2000. Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000a);

European Commission, 2001. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);

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

Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);

Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);

Invasive species Ireland (http://invasivespeciesireland.com/) accessed 06/05/25

King J. J. and Linnane S. M. (2004) The status and distribution of lamprey and shad in the Slaney and Munster Blackwater SACs. Irish Wildlife Manuals, No. 14. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2000)

Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC Office for Official Publications of the European Communities, Luxembourg (EC, 2018);

National Biodiversity Data Centre (http://www.biodiversityireland.ie/) accessed 06/05/25

National Parks and Wildlife Service website (www.npws.ie) accessed 06/05/25

NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170, Version 1. NPWS, Department of Arts, Heritage & the Gaeltacht (dated 31 July 2012).

NRA Guidelines on the Management of Noxious Weeds and Non-native Species on National Roads (NRA, 2010

NS 2 (2010) Freshwater Pearl Mussel. Second Draft. Munster Blackwater Sub-basin management plan. Funded by DEHLG. March 2010.

Sweeney, N. and Sweeney, P. (2017) Expansion of the White-clawed Crayfish (Austropotamobius pallipes (Lereboullet)) population in the Munster Blackwater. Irish Naturalists' Journal 35: 94-98.

Triturus Environmental Ltd. (2021). Aquatic baseline report for Fermoy Weir, Fermoy, Co. Cork Prepared by Triturus Environmental Ltd. for DixonBrosnan Environmental Consultants May 2021

Appendices

Appendix 1 Site synopses

Blackwater River (Cork/Waterford) SAC (Site Code 2170) Site Synopsis

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The portions of the Blackwater and its tributaries that fall within this SAC flow through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Nearby towns include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1220] Perennial Vegetation of Stony Banks
- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [3260] Floating River Vegetation
- [91A0] Old Oak Woodlands
- [91E0] Alluvial Forests*
- [1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
- [1092] White-clawed Crayfish (Austropotamobius pallipes)
- [1095] Sea Lamprey (Petromyzon marinus)
- [1096] Brook Lamprey (Lampetra planeri)
- [1099] River Lamprey (Lampetra fluviatilis)
- [1103] Twaite Shad (Alosa fallax)
- [1106] Atlantic Salmon (Salmo salar)
- [1355] Otter (Lutra lutra)
- [1421] Killarney Fern (Trichomanes speciosum)

The conservation objectives for the site are detailed in: NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170, Version 1. NPWS, Department of Arts, Heritage & the Gaeltacht (dated 31 July 2012). The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest.

The Blackwater rises in boggy land in east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeragh Mountains before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks

are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

Wet woodlands are found where river embankments have broken down and channel edges are subject to daily inundation. This is particularly evident in the steep-sided valley of the River Bride, between Cappoquin and Youghal. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almondleaved Willow (Salix alba and S. triandra), with isolated Crack Willow (S. fragilis) and Osier (S. viminalis). Rusty Willow (S. cinerea subsp. oleifolia) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (Lycopus europaeus), Guelder-rose (Viburnum opulus), Bittersweet (Solanum dulcamara) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (Taxus baccata) woodland occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore (Acer pseudoplatanus), Beech (Fagus sylvatica) and Douglas Fir (Pseudotsuga menzsisii). However, it does have the potential to develop into a Yew dominated stand in the long term and the site should continue to be monitored.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (Phragmites australis) is ubiquitous and is harvested for thatching. There is also much Marsh-marigold (Caltha palustris) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (Carex riparia and C. acutiformis). Hemlock Water-dropwort (Oenanthe crocata), Wild Angelica (Angelica sylvestris), Reed Canary-grass (Phalaris arundinacea), Meadowsweet (Filipendula ulmaria), Common Nettle (Urtica dioica), Purple Loosestrife (Lythrum salicaria), Common Valerian (Valeriana officinalis), Water Mint (Mentha aquatica) and Water Forget-me-not (Myosotis scorpioides) are all also found.

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the water table and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed with Rusty Willow, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (Lysimachia nemorum), with locally abundant Common Water-starwort (Callitriche stagnalis) and Marsh Ragwort (Senecio aquaticus). One of the depressions has Silver Birch (Betula pendula), Ash (Fraxinus excelsior), Crab Apple (Malus sylvestris) and a little Pedunculate Oak (Quercus robur) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive, with species such as water-crowfoots, including Pond Water-crowfoot (Ranunculus peltatus), Canadian Pondweed (Elodea canadensis), pondweed species, including Broad-leaved Pondweed (Potamogeton natans), water-milfoil species (Myriophyllum spp.), Common Club-rush (Scirpus lacustris), water-starwort species (Callitriche spp.), Lesser Water-parsnip (Berula erecta) particularly on the Awbeg, Water-cress (Nasturtium officinale), Hemlock Waterdropwort, Fine-leaved Water-dropwort (O. aquatica), Common Duckweed (Lemna minor), Yellow Water-lily (Nuphar lutea), Unbranched Bur-reed (Sparganium emersum) and the moss Fontinalis antipyretica all occurring.

The grasslands adjacent to the rivers of the site are generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow Iris (Iris pseudacorus), Meadowsweet, Meadow Buttercup (Ranunculus acris) and rushes (Juncus spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (Deschampsia cespitosa) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech and a few conifers, and sometimes of the invasive species Rhododendron (Rhododendron ponticum) and Cherry Laurel (Prunus laurocerasus). Oak woodland is well developed on sandstone about Ballinatray, with the acid oak woodland community of Holly (Ilex aquifolium), Bilberry (Vaccinium myrtillus), Great Wood-rush (Luzula sylvatica) and the ferns Dryopteris affinis and D. aemula occurring in one place. Irish Spurge (Euphorbia hyberna)

continues eastwards on acid rocks from its headquarters to the west, but there are also many plants of richer soils, for example Wood Violet (Viola reichenbachiana), Goldilocks Buttercup (Ranunculus auricomus), Broad-leaved Helleborine (Epipactis helleborine) and Red Campion (Silene dioica). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (Brachypodium sylvaticum) and Early-purple Orchid (Orchis mascula).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of oak with Downy Birch (Betula pubescens), Holly and Hazel (Corylus avellana) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the oak on the shallower slopes and here both Rhododendron and Cherry Laurel have invaded the woodland.

The oak wood community in the Lismore and Glenmore valleys is of the classic upland type, in which some Rowan (Sorbus aucuparia) and Downy Birch occur. Honeysuckle (Lonicera periclymenum) and Ivy (Hedera helix) cover many of the trees while Great Wood-rush, Bluebell (Hyacinthoides non-scripta), Wood-sorrel (Oxalis acetosella) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (Blechnum spicant), Male Fern (Dryopteris filix-mas), the bucklerferns D. dilatata and D. aemula, and Lady Fern (Athyrium felix-femina). There are many mosses present and large species such as Rhytidiadelphus spp., Polytrichum formosum, Mnium hornum and Dicranum spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (Lobaria spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (Prunus avium) and Goat Willow (Salix caprea). The ground flora is relatively rich, with Pignut (Conopodium majus), Ramsons (Allium ursinum), Garlic Mustard (Alliaria petiolata) and Wild Strawberry (Fragaria vesca). The presence of Ivy Broomrape (Orobanche hederae), a local species within Ireland, suggests that the woodland, along with its attendant Ivy, is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore, Ash and Horsechestnut (Aesculus hippocastanum).

In places the alien invasive species Cherry Laurel dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash, with Hawthorn (Crataegus monogyna) and Spindle (Euonymus europaea) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (Salix spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (Geum urbanum), Ivy and Soft Shield-fern (Polystichum setiferum), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (Carex remota) and Opposite-leaved Golden-saxifrage (Chrysosplenium oppositifolium). In places along the upper Bride, scrubby, semi-natural deciduous woodland of willow, oak and Rowan occurs, with abundant Great Wood-rush in the ground flora.

The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (Osmunda regalis) and Eared Willow (Salix aurita), and between them there is a sheet of Bottle Sedge (Carex rostrata), Marsh Cinquefoil (Potentilla palustris), Bogbean (Menyanthes trifoliata), Marsh St. John's-wort (Hypericum elodes) and the mosses Sphagnum auriculatum and Aulacomnium palustre. The cover is a scraw (i.e. floating vegetation) with characteristic species like Marsh Willowherb (Epilobium palustre) and Early Marshorchid (Dactylorhiza incarnata).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (Veronica montana), Wood Anemone (Anemone nemorosa), Enchanter's-nightshade (Circaea lutetiana), Barren Strawberry (Potentilla sterilis) and shield-fern (Polystichum sp.) occur. There is some Ramsons, Three-nerved Sandwort (Moehringia trinervia) and Early-purple Orchid (Orchis mascula) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle (Ajuga reptans) in wet places. A stand of Hazel woodland at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow and Downy Birch. The ground in the clearings is heathy with Heather (Calluna vulgaris), Slender St John's-wort (Hypericum pulchrum) and the occasional Broom (Cytisus scoparius) occurring.

The estuary and the habitats within and associated with it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site, with the best examples at Kinsalebeg in Co. Waterford, and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford, and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater. There are also large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green filamentous algae (Ulva sp. and Enteromorpha sp.) occur in places, while fucoid algae are common on the more stony flats, even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (Puccinellia maritima), small amounts of Greater Seaspurrey (Spergularia media), glasswort (Salicornia sp.), Sea Arrowgrass (Triglochin maritima), Annual Sea-blite (Suaeda maritima) and Sea Purslane (Halimione portulacoides) - the latter a very recent coloniser. Some Sea Aster (Aster tripolium) occurs, generally with Creeping Bent (Agrostis stolonifera). Sea Couch (Elymus pycnanthus) and small isolated clumps of Sea Club-rush (Scirpus maritimus) are also seen. On the Tourig River additional saltmarsh species found include sea-lavenders (Limoniun spp.), Thrift (Armeria maritima), Red Fescue (Festuca rubra), Common Scurvygrass (Cochlearia officinalis) and Sea Plantain (Plantago maritima). Oraches (Atriplex spp.) are found on channel edges. Species such as Saltmarsh Rush (Juncus gerardi) and Sea Rush (J. maritimus) are found in places in this site also, and are indicative of Mediterranean salt meadows. Areas of Salicornia mud are found at the eastern side of the townland of Foxbole above Youghal, at Blackbog, along the Tourig and Kinsalebeg esturaies.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well-developed and diverse flora. At the lowest part, Sea Beet (Beta vulgaris subsp. maritima), Curled Dock (Rumex crispus) and Yellow Horned-poppy (Glaucium flavum) occur, while at a slightly higher level Sea Mayweed (Matricaria maritima), Cleavers (Galium aparine), Rock Samphire (Crithmum maritimum), Sea Sandwort (Honkenya peploides), Spear-leaved Orache (Atriplex prostrata) and Babington's Orache (A. glabriuscula). Other species present include Sea Rocket (Cakile maritima), Herb-Robert (Geranium robertianum), Red Fescue and Kidney Vetch (Anthyllis vulneraria). The top of the spit is more vegetated and supports lichens and bryophytes, including Tortula ruraliformis and Rhytidiadelphus squarrosus.

The site supports several Red Data Book plant species, i.e. Starved Wood-sedge (Carex depauperata), Killarney Fern (Trichomanes speciosum), Pennyroyal (Mentha pulegium), Bird's-nest Orchid (Neottia nidus-avis), Golden Dock (Rumex maritimus) and Bird Cherry (Prunus padus). The first three of these are also protected under the Flora (Protection) Order, 2015, while the Killarney Fern is also listed on Annex II of the E.U. Habitats Directive. The following plants, relatively rare nationally, are also found within the site: Toothwort (Lathraea squamaria) - associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (Leucojum aestivum) and Flowering Rush (Butomus umbellatus) on the Blackwater; Common Calamint (Calamintha ascendens), Red Campion, Sand Leek (Allium scorodoprasum) and Wood Club-rush (Scirpus sylvaticus) on the Awbeg.

The site is also important for the presence of several E.U. Habitats Directive Annex II animal species, including Sea Lamprey (Petromyzon marinus), Brook Lamprey (Lampetra planeri), River Lamprey (L. fluviatilis), Twaite Shad (Alosa fallax fallax),

Freshwater Pearl Mussel (Margaritifera margaritifera), Otter (Lutra lutra) and Salmon (Salmo salar). The Awbeg supports a population of White-clawed Crayfish (Austropotamobius pallipes). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers. The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by significant pools, streams, glides, and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy, and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, can be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket Metrioptera roselii (Order Orthoptera) has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (Anodonta cygnea), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 5, 1996/97-2000/01) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute maximum 2,141, 1994/95). Staging Terns visit the site annually, with >300 Sandwich Tern and >200 Arctic/Common Tern (average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland Whitefronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret breed at the site (12 pairs in 1997, 19 pairs in 1998).

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2,752), Teal (average peak 1,316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1,680), Knot (150), Dunlin (2,293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4,000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers: 2 or 3 pairs at Dromana Rock; approximately 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and around 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in Co. Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde, west of Fermoy. Reed Warbler, a

scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it breeds nearby to the south of Youghal. Dipper occurs on the rivers.

Land use at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries, and there are a number of angler associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore, it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

SITE NAME: BLACKWATER CALLOWS SPA SITE CODE: 004094

The Blackwater Callows SPA comprises the stretch of the River Blackwater that runs in a west to east direction between Fermoy and Lismore in Counties Cork and Waterford, a distance of almost 25 km. The site includes the river channel and strips of seasonally-flooded grassland within the flood plain. Sandstone ridges, which run parallel to the river, confine the area of flooding to a relatively narrow corridor.

The river channel has a well-developed aquatic plant community, which includes such species as Pond Water-crowfoot (*Ranunculus peltatus*), Canadian Pondweed (*Elodea canadensis*) and a variety of pondweeds (*Potamogeton* spp.), water-milfoils (*Myriophyllum* spp.) and water-starworts (*Callitriche* spp.).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Wigeon, Teal and Black-tailed Godwit. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The site is of high ornithological interest on account of its wintering waterfowl populations. Whooper Swan occurs in numbers of international importance (212) - all figures are mean peaks for the five winters 1995/96 to 1999/2000. Bewick's Swan were regularly recorded at the site up to the mid-1990s; however, in the winters of 1997/98 and 1998/99 only four and two individuals respectively were recorded, and the species is no longer considered to be a regular visitor. This decline is in line with a national decrease and a marked contraction in range. The site supports nationally important populations of Wigeon (2,313), Teal (898) and Black-tailed Godwit (251). Other wintering species that occur include Mallard (398) Shoveler (26), Lapwing (191), Curlew (457) and Black-headed Gull (311).

Little Egret uses the site throughout the year as there is a nearby breeding colony downstream. The river system provides an important feeding area for these birds.

The Blackwater Callows SPA is of importance for its populations of wintering waterfowl, including an internationally important population of Whooper Swan and nationally important populations of Wigeon, Teal and Black-tailed Godwit. The

presence of Whooper Swan, as well as Little Egret, is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Part of the Blackwater Callows SPA is a Wildfowl Sanctuary.

31.10.2014

Appendix 2. Site drawings

