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REMEDIAL NATURA IMPACT STATEMENT OF A DEVELOPMENT IN GRENNAN, ATTANAGH, CO. LAOIS

PREPARED TO ACCOMPANY AN APPLICATION FOR SUBSTITUTE CONSENT
UNDER SECTION 177 OF THE PLANNING AND DEVELOPMENT ACT 2000, AS
AMENDED



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1 INTRODUCTION

1.1 BACKGROUND

Patrick Lalor is applying to An Bord Pleanála for Substitute Consent under Section 177C of the Planning and Development Act 2000 for a development previously constructed without planning consent on his farm at Grennan, Attanagh, Co. Laois. This application was made following a decision issued by An Bord Pleanála to grant Mr Lalor leave to apply for Substitute Consent (ABP Ref: 307382-20). The application for leave to apply for Substitute Consent was made to An Bord Pleanála in 2020.

It had previously been determined by Laois County Council (Planning Ref: 19/200), that due to the connectivity of the application site to sites designated under the Natura 2000 network, and its subsequent activities, i.e., the land spreading of the manure produced at the farm, that an Appropriate Assessment of the proposed development would have been required prior to its completion.

Therefore, this remedial Natura Impact Statement was prepared in support of the Substitute Consent application to An Bord Pleanála. In the Inspector's report for this application, the following conclusions were reached:

"Having regard to Section 177D of the Planning and Development Act, 2000, as amended, the Board is satisfied that an appropriate assessment is required in this case, in the light of the scale and nature of the development and its relationship with European sites.

Furthermore, the Board examined whether or not exceptional circumstances exist such that it would be appropriate to allow the opportunity for regularisation of the development by granting leave to make an application for substitute consent.

In this regard the Board;

(i) considered that this application for leave to apply for substitute consent has demonstrated that the regularisation of the development would not circumvent the purposes and objectives of the Habitats Directive because it would allow for the provision of information and an analysis of the likely significant effects of the development on European sites in the vicinity of the development site.

(ii) Considered that the applicant has demonstrated reasonable grounds to believe that the development was not unauthorised

(iii) considered that this application for leave to apply for substitute consent has demonstrated that the ability to carry out an appropriate assessment and that public participation in such an assessment have not been substantially impaired.

(iv) considered the submission of an remedial Natura Impact Statement would facilitate an assessment of the potential for the remediation of any significant effects on European sites, and

(v) considered that the applicant is making reasonable efforts to regularise the planning status of the development.

Having regard to the foregoing it is considered that exceptional circumstances do exist such that it would be appropriate to permit the opportunity for regularisation of the development by permitting an application for substitute consent in relation to the site outlined in this application"

1.2 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive 2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for

water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one MemberState) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2021 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the ‘Habitats Directive’ - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. *Natura 2000* sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting *Natura 2000* sites. Article 6(3) establishes the requirement for Appropriate Assessment:

“Any plan or project not directly connected with or necessary to the management of the 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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

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

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

(1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

(3) In carrying out screening for appropriate assessment of a proposed development a planning authority may request such information from the applicant as it may consider necessary to enable it to carry out that screening and may consult with such persons as it considers appropriate.

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

5) The competent authority shall determine that an appropriate assessment of a draft Landuse plan or a proposed development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site."

The obligations in relation to Substitute Consent have been implemented in Ireland under PartXA of the Planning and Development Act 2000, as amended ("the 2000 Act"). The relevantprovisions of Section 177G in relation to remedial Natura Impact Statement are set out below:

177G. — (1) A remedial Natura impact statement shall contain the following:

(a) a statement of the significant effects, if any, on the relevant European site which have occurred or which are occurring or which can reasonably be expected to occur because the development the subject of the application for substitute consent was carried out;

(b) details of —

(i) any appropriate remedial or mitigation measures undertaken or proposed to be undertaken by the applicant for substitute consent to remedy or mitigate any significant effects on the environment or on the European site;

(ii) the period of time within which any such proposed remedial or mitigation measures shall be carried out by or on behalf of the applicant;

(c) such information as may be prescribed under section 177N;

(d) and may have appended to it, where relevant, and where the applicant may wish to rely upon same:

(i) a statement of imperative reasons of overriding public interest;

(ii) any compensatory measures being proposed by the applicant.

2 METHODOLOGY

This remedial NIS has been prepared with reference to the following:

- European Commission (2019). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2001). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: 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 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – An assessment of the 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.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects.

2.1 STATEMENT OF COMPETENCY

This AA Screening report was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over sixteen years. Noreen has over 15 years' experience as a professional ecologist in Ireland.

2.2 DESK STUDIES & CONSULTATION

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species; conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Michael Ryan (Agricultural Advisor), IE Consulting, Patrick Lalor and Emma Pillion Planning – Information regarding the existing development including site plans, specifications, information on the planning history of the site.
- Laois County Council – Information on planning history in the area and the previous decisions of Laois County Council pertaining to this application site.
- An Bord Pleanála – Inspector's report (ABP-300315-17) refusing permission to retain the subject development as the development required an NIS.
- An Bord Pleanála – Inspector's report (ABP-307382-20) issued to the applicant granting him Leave to Apply for Substitute Consent under S.177C.

2.3 ASSESSMENT METHODOLOGY

The development (completed and proposed) was assessed to identify its potential ecological impacts and from this, the Zone of Influence (ZoI) of the proposed development was defined. Based on the potential impacts and their ZoI, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCO should be considered in detail.

3 PROJECT DESCRIPTION

3.1 DESCRIPTION OF WORKS

Patrick Lalor is applying to An Bord Pleanála for Substitute Consent under Section 177E of the Planning and Development Act 2000 for works undertaken in Grennan, Attanagh, Co. Laois. The development on the site which is the subject of the current application for substitute consent consists of the following:

- *Retention of slatted tank on the site, animal housing which incorporates cubicle area, calving boxes, milking parlour, dairy, office, plantroom, slatted feeding area, collecting area, steel uprights at slatted feeding area, and all associated ancillary works and services. The stated floor area of the slatted shed and ancillary areas is 1,266 sq. metres. The application documentation states that the combined floor area of the pre-existing farm buildings on the site is 708 sq. metres.*

An extract from the planning drawings is shown in Figure 1.

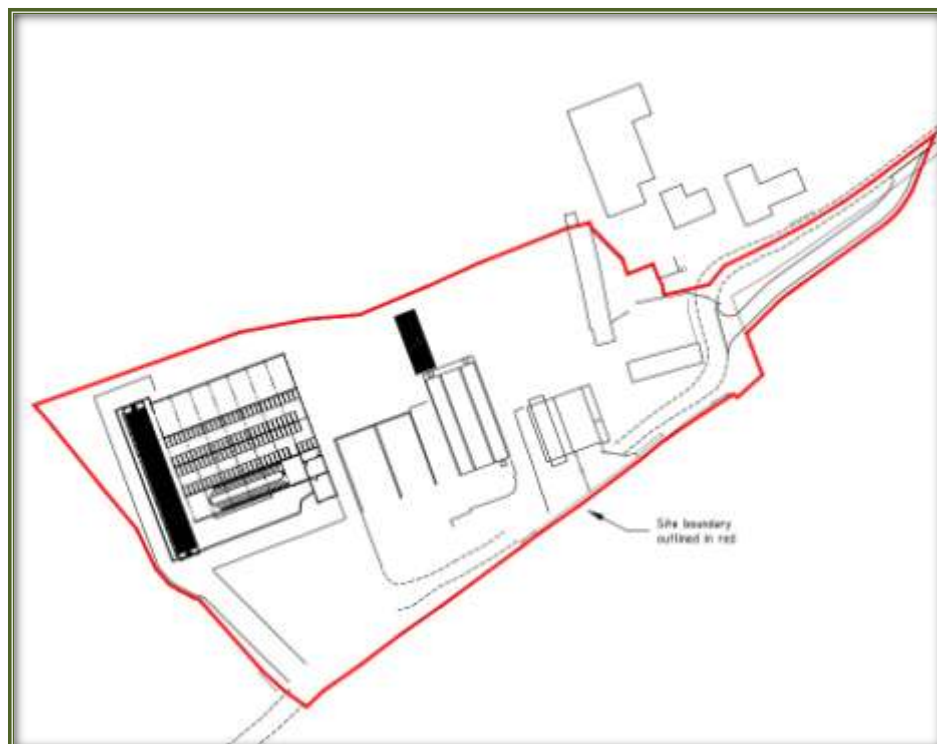


Figure 1 – Extract from Planning Drawings Submitted (as prepared by Mary Cotter)

3.2 ABOUT THE FARM

Patrick Lalor and his son operate a dairy farm in Attanagh, Co. Laois. The total land farmed (2021) is approximately 167.89 hectares, some of which is owned and some of which is

rented. There are two farmyards –one in Grennan (current application site) and one in Ironmills.

A Nutrient Management Plan (NMP) was prepared for the entire farm by Michael Ryan in February 2022. This report presents data regarding the amount of slurry and farmyard manure (including soiled water from hard surfaces) produced on the entire yard at Grennan and Ironmills, along with the land available for the spreading of this slurry. A NMP is a legal requirement under the Nitrates Regulations and is designed to ensure that the farmer concerned remains compliant with the provisions of the Nitrates Regulations relating to having adequate housing and manure storage facilities, and adequate suitable land to spread these manures on while remaining compliant with the maximum whole farm stocking rate permitted which is 170kgs Org N/Ha without having a derogation. In this case the applicant is not eligible to apply for a derogation as in 2021 he grew cereals and winter crops. The NMP also outlines the maximum fertilisation rates for each plot and crop on the holding both for organic and chemical fertiliser as set out in the Nitrates Regulations.

The current whole farm stocking rate is 166.38 kg/ha. This is below that permitted under the Nitrates Regulations.

Summary of All Livestock on the Farm (Grennan and Ironmills)

2020 Stock number – 540, as follows:

Animal Type	Grennan	Ironmills	Total
Dairy Cow	100	164	264
Cattle +2yrs	25	0	25
Cattle 1-2 yrs	0	85	85
Cattle 0-1yrs	0	90	90
Total	125	339	464

Slurry Details

Slurry is exported from Ironmills only, not from Grennan. Slurry produced in the Grennan farm is applied to lands surrounding the farm here. It is not transported up the lane towards the main road.

- Slurry produced from animals is 1,182.7m³
- 894m³ of slurry will be exported
- FYM Seepage is 188m³
- Dairy washings 183.7m
- Total slurry produced 1,554.4m³

- The total available net storage is 1,767.4m³
- Surpluss storage available is 213m³

Soiled Water Details

- Soiled water produced (Dairy Washings) – 18.2m³
- Soiled water produced (Yards) – 13.3m³
- Total available net soiled water storage – 124.6m³
- Surpluss storage available – 93.1m³
- FYM Seepage is 188m³

All soiled water from the farm in Grennan is directed to existing tanks. This soiled water is accounted for in the above figures and it has been considered as part of the Nutrient Management Plan that has been prepared for the farm.

Clean Surface Water

Rain water running off the roof of the structure seeking Substitute Consent currently falls off the roof and onto the ground. Remedial work will be required to direct this clean roof water to a soakpit as per BRE Digest 365 guidelines (as proposed following the soakaway design prepared after the FI Request the under Planning Application 17/218).

LAND-SPREADING

Land-spreading is the term generally given to the application of fertiliser (in this cattle / cow organic manure) to land. This activity is carried out by farmers to fertilise their lands for productive agricultural purposes in line with applicable legislative requirements and good practice.

Any assessment of the potential impact of the land-spreading of the organic manure arising from the proposed development must take heed that these are productive agricultural lands that have been subject to land-spreading in accordance with the relevant legislation and in accordance with the farm plans that are produced annually by the applicant. Evidence to demonstrate that the applicant has a requirement for the organic manure produced on the farm has been provided and ample land exists for the proper use of this manure as per S.I. 605 of 2017.

The organic manure produced on the farm will be utilised on lands that are owned or rented by the applicant, and those which have an agronomic requirement for this fertiliser. Land-spreading of organic manure has been ongoing here for many years, prior to the construction of the shed. These lands occur within the townlands of Grennan, Fermoye, Knockroe, Castlemarket, Ironmills or Kilrushand Jenkinstown. Organic manure will be

spread on the land in accordance with the farm plan and within the confines of S.I. 605 of 2017. The current NMP for the farm effectively demonstrates there is adequate land available to the applicant to apply all organic manures produced on this holding. No spreading will be done in any areas designated as an SAC / SPA.

S.I. 605 OF 2017

The European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 provides a basic set of measures to ensure the protection of waters, including drinking water sources, against pollution caused by nitrogen and phosphorus from agricultural sources, with the primary emphasis being on the management of livestock manures and other fertilisers. The purpose of these Regulations is to give effect to Ireland's Nitrates Action Programme. This directive outlines measures that must be followed during the land-spreading of manure. These measures are summarised in the points below.

- The amount of livestock manure applied in any year to land on a holding, together with that deposited to land by livestock, shall not exceed an amount containing 170 kg nitrogen per hectare.
- The spreading of any organic fertiliser during certain times of the year is prohibited (The prohibited spreading period, generally between Mid-October and Mid-January).
- Farmers must keep within the overall maximum fertilisation rates for nitrogen and phosphorus.
- Farmers must have sufficient storage capacity to meet the minimum requirements of the regulations.
- All storage facilities must be kept leak proof and structurally sound.
- Records for the movement of fertilisers must be kept.
- Chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water must be spread as accurately and as evenly as possible.
- An upward-facing splash plate or sludge irrigator on a tanker or umbilical system must not be used for the spreading of organic fertiliser or soiled water.
- Chemical fertilisers, livestock manure, soiled water or other organic fertilisers must not be spread when:
 - The land is waterlogged;
 - The land is flooded, or it is likely to flood;
 - The land is frozen, or covered with snow;
 - Heavy rain is forecast within 48 hours;
 - The ground slopes steeply and there is a risk of water pollution, when factors such as

surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.

- Chemical fertilisers must not be spread on land within 2 metres of a surface watercourse.

Table 1 shows the buffer zones for various water bodies (lakes, rivers, wells etc.). Soiled water, effluents, farmyard manures or other organic fertilisers must not be spread inside these buffer zones.

Water Feature	Buffer Zone
Any water supply source providing 100m ³ or more of water per day, or serving 500 or more people	200m (or as little as 30m where a local authority allow)
Any water supply source providing 10m ³ or more of water per day, or serving 50 people or more	100m (or as little as 30m where a local authority allows)
Any other water supply for human consumption	25m (or as little as 15m where a local authority allows)
Lake shoreline or a turlough likely to flood	20m
Exposed cavernous or karstified limestones features	15m
Any surface watercourse where the slope towards the watercourse exceeds 10%	10m
Any other surface waters	5m

Table 1 – Requirements for the Application of Fertilisers and Soiled Water as set out in S.I. 605 of 2017.

Prior to its implementation, S.I. 605 of 2017 was subjected to Appropriate Assessment (Natura Impact Statement - NIS) and a Strategic Environmental Assessment (SEA) Screening at draft stage (March 2017). At this stage, it was referred to as Ireland's Fourth Nitrates Action Programme (NAP). This draft NAP was assessed in terms of the likely significant effects of the programme and where it would adversely affect the integrity of European sites. The NIS identified that the existing and proposed measures would be predominantly positive for European sites. The measures of the NAP were influenced to avoid, as appropriate, measures that would have an adverse effect upon the integrity of the European sites. Any project falling under the requirements of the NAP will be required to conform to the mitigation measures contained within the NIS prepared and to any further regulatory provisions aimed at preventing pollution or other environmental effects. The

applicant is fully aware of his obligations under S.I. 605 of 2017 and they will meet all the requirements under this Directive with the proposed application.

3.3 SITE LOCATION AND SURROUNDING ENVIRONMENT

The site in question is located in a rural area, within the townland of Grennan. Access to the site is via a private farm access road that is located just off a local, third class road. The site is approximately 1 hectare in area. It is 1.7km north of Attanagh and 2.3km east of Durrow.

It is located in an area where agriculture is quite intensive and the dominant habitat is improved agricultural grassland. Other habitats close to the site include hedgerows, treelines and areas of broadleaved woodland. The River Nore and its riparian habitats is 1km west of the site. Site location maps are shown in Figures 2 and 3, whilst aerial photographs of the site and its surrounding habitats is shown in Figures 4a and b.



Figure 2 – Site Location Map (Site Pinned)



Figure 3 – Site Location Map (Site Outlined in Red)

HABITATS AND NOTABLE SPECIES

The site itself currently consists of buildings and artificial surfaces (the existing farm buildings and hard-core areas proposed for retention). There are also some small areas of improved agricultural grassland in the western section of the site. These are habitats of low biodiversity and conservation value. There are treelines present along part of the northern and southern site boundaries.

An examination of the website of the National Biodiversity Data Centre (Biodiversity Maps application), revealed that there are no records for the presence of any notable plant or mammal species from the relevant 1km squares (S4377) of this proposed development.

WATER FEATURES AND QUALITY

The application site is located within the Nore Hydrometric Area, Catchment and Sub-Catchment and the Owveg Sub-Basin. There are no drains or streams within or adjacent to the application site. There is a stream approximately 447m west of the application site. This stream flows southwards, until it meets the River Nore, at a point approximately 1.1km south-west of the application site. At its closest point, the River Nore is 954m south-west of the application site.

The EPA have defined the ecological status of the River Nore and its tributaries at points close to the application site as good. Under the requirements of the Water Framework Directive, this is satisfactory and this status must be maintained.

The application site is within the Lisdowney groundwater body, the status of which has been classed as good. The site itself is within an area of high groundwater vulnerability.



Figure 4a – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats. (© Bing Maps).
Taken Prior to Completion of Works



Figure 4b – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats. (© Google Maps).
Taken After Construction of Unauthorised Structure.

4 AA SCREENING (REMEDIAL)

4.1 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the application site have been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the application site and the activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are five Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the application site are summarised in Table 2 and maps and an aerial photograph showing their locations relative to the application site are shown in Figures 5, 6 and 7. A full description of all these sites can be read on the website of the National Parks and Wildlife Service (npws.ie). The potential significant effects are those which may have occurred in the past, are ongoing or those which may occur in the future.

European Site	Distance	Qualifying Interests	Potential for Significant Effects
River Barrow and Nore SAC 002162	743m west Spread-Lands Within / Adjacent and Hydrologically Linked	<ul style="list-style-type: none"> • <i>Vertigo moulinsiana</i> • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) • White-clawed crayfish (<i>Austropotamobius pallipes</i>) • Sea lamprey (<i>Petromyzon marinus</i>) • Brook lamprey (<i>Lampetra</i> 	<p><i>Having regards to the close proximity of the SAC to the application site, and using the basis of the precautionary principal, then potential direct and indirect impacts upon this SAC, its habitats and species arising from the application site must be considered further. Potential impacts may arise from inappropriate surface water</i></p>

		<p><i>planeri</i>)</p> <ul style="list-style-type: none"> • River lamprey (<i>Lampetra fluviatilis</i>) • Allis shad (<i>Alosa alosa</i>) • Twaite shad (<i>Alosa fallax fallax</i>) • Salmon (<i>Salmo salar</i>) • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Salicornia and other annuals colonizing mud and sand • Spartina swards • Atlantic salt meadows • Otter (<i>Lutra lutra</i>) • Mediterranean salt meadows • Killarney fern (<i>Trichomanes speciosum</i>) • Pearl mussel (<i>Margaritifera durrovensis</i>) • Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation • European dry heaths • Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels • Petrifying springs with tufa formation (Cratoneurion) • Old sessile oak woods with Ilex and Blechnum in British Isles • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> 	<p><i>management from the site and / or land spreading. This could have given rise to, or could give rise to, significant effects upon the QIs of this SAC.</i></p>
<p>River Nore SPA 004233</p>	<p>1.1km west / Spreadlands Adjacent and Hydrologically Linked</p>	<ul style="list-style-type: none"> • Kingfisher <i>Alcedo atthis</i> 	<p><i>Given the close proximity of the SPA to the application site, and using the basis of the precautionary principal, then potential direct and indirect impacts upon this SAC, its habitats and species arising from the application site must be considered further. Potential impacts may arise from inappropriate surface water management from the site and / or land spreading. This could have given rise to, or could give rise to, significant effects upon the QIs of this SAC.</i></p>

Lisbigney Bog SAC 000869	1.9km north-east	<ul style="list-style-type: none"> • Calcareous fens with <i>Cladium mariscus</i> and species of the Caricion davallianae • Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> 	<i>There is no hydrological connectivity between the application site and this SAC, therefore impacts upon this SAC can be ruled out from further assessment. There will be no land-spreading within or adjacent to this SAC. No impacts likely upon this SAC.</i>
Galmoy Fen SAC 001858	14.2km south-west	<ul style="list-style-type: none"> • Alkaline fen 	<i>There is no hydrological connectivity between the application site and this SAC, therefore impacts upon this SAC can be ruled out from further assessment. No impacts likely upon this SAC.</i>
Cullahill Mountain SAC 000831	10.2km south-west	<ul style="list-style-type: none"> • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] 	<i>There is no hydrological connectivity between the application site and this SAC, therefore impacts upon this SAC can be ruled out from further assessment. No impacts likely upon this SAC.</i>
Spahill And Clomantagh Hill SAC000849	13.2km south-west	<ul style="list-style-type: none"> • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] 	<i>There is no hydrological connectivity between the application site and this SAC, therefore impacts upon this SAC can be ruled out from further assessment. No impacts likely upon this SAC.</i>

Table 2 – Designated Sites within 15km of the Application Site

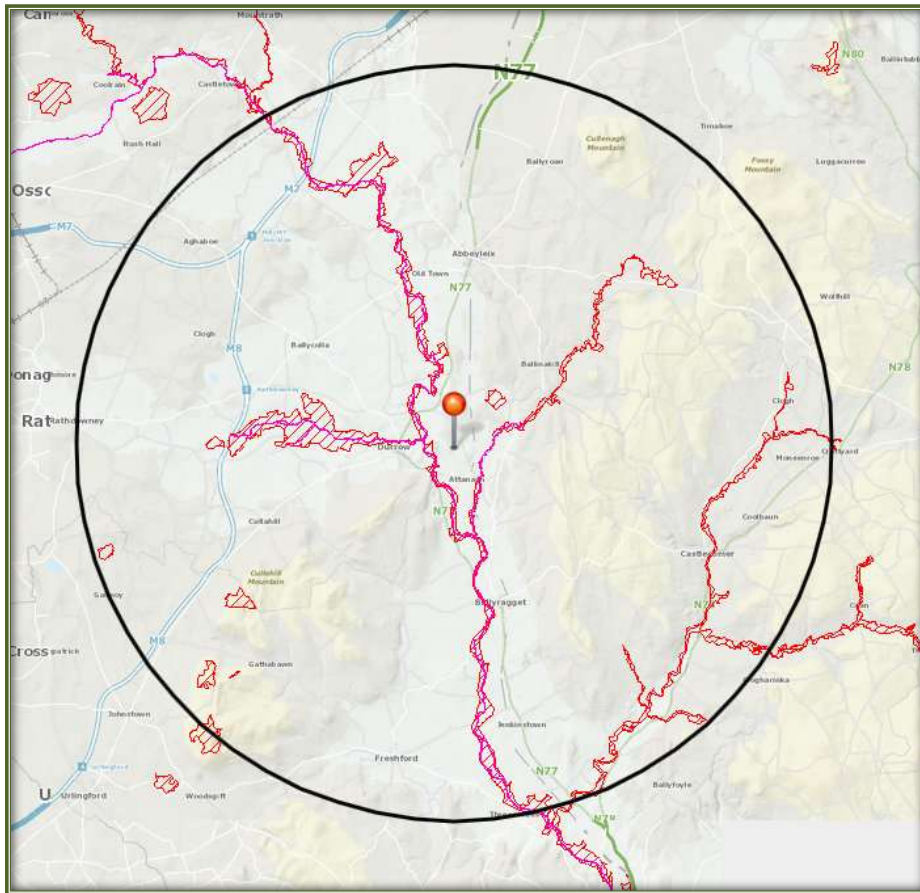


Figure 5 – The Application Site (Pinned) in relation to Natura 2000 Sites within 15km



Figure 6 – The Application Site (Outlined in Red) in relation to the River Barrow and Nore SAC (Red Hatched Areas) and SPA (Pink Hatched Areas)

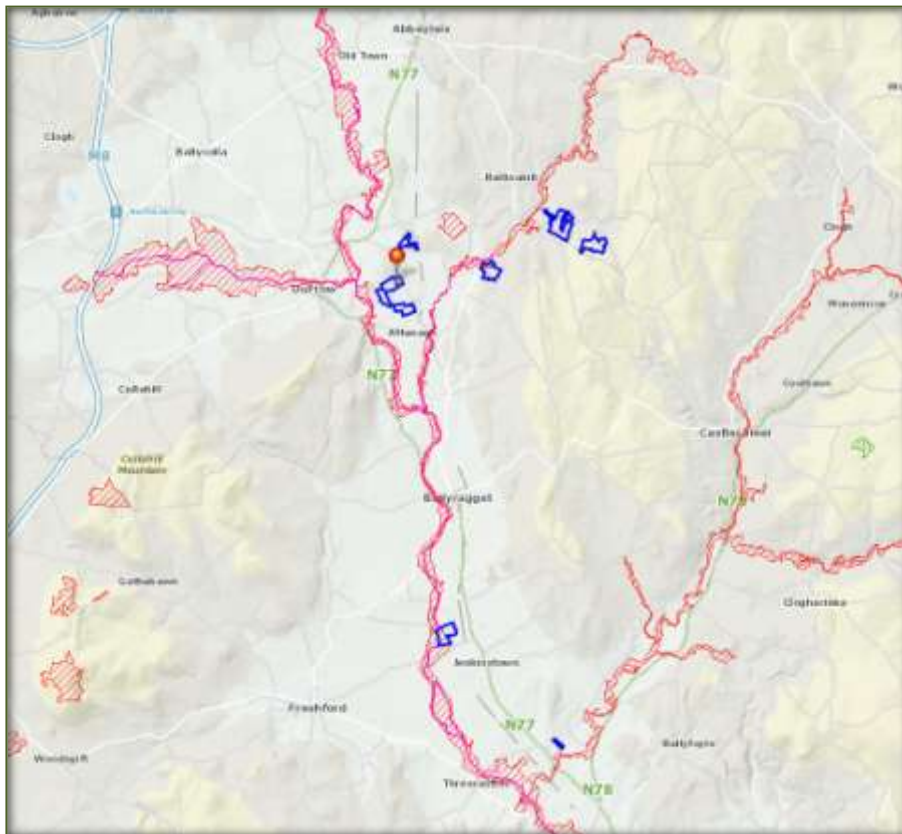


Figure 7 – The Application Site (Pinned) in relation to the River Barrow and Nore SAC (Red Hatched Areas), The River Nore SPA (Pink Hatching). Lands Being Owned / Rented are Highlighted in Blue.

4.2 IDENTIFICATION OF POTENTIAL IMPACTS

The application site at Grennan, Attanaghis potentially connected to the River Barrow and River Nore SAC and River Nore SPA, via activities that have occurred / will occur in the yard as well as the lands that have been identified for the receipt of the manure that is produced on this farm. Having regard to the tenets of the precautionary principle and how it guides the AA process, as this source-pathway-receptor model exists and in the absence of mitigation it cannot be ruled out that the proposed development did not / will not have impacts upon these designated sites.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the identified Natura 2000 sites and protected species have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. These effects may have occurred in the past, they may be ongoing or they could arise in the future.

1. Deterioration in water quality in designated areas arising from pollution due to the initial construction of the unauthorised structures and the ongoing and continuation of farm activities within the application site itself. Inappropriate surface water management in the farm yard may lead to impacts upon the River Nore and Barrow SAC and the River Nore SPA. Negative impacts upon local groundwater resources and subsequent effects on the Natura 2000 sites have also been considered.
2. Potential impacts on water quality within the River Barrow and Nore SAC / River Nore SPA arising from the use of organic manure produced on the farm in the past, present and future. Negative impacts upon local groundwater resources and subsequent effects on the Natura 2000 sites have also been considered. These potential impacts would exist even in the absence of the shed seeking retention permission as they were present prior to the construction of the shed.
3. Cumulative impacts.

4.3 ASSESSMENT OF SIGNIFICANCE

This section considers the list of sites identified in Section 3.3. It can be considered that with the exception of the River Barrow and Nore SAC and the River Nore SPA that the remainder of the sites identified in Section 3.3 can be excluded from the Appropriate Assessment process. This is based on their distance from the application site and the fact that they are outside of its Zone of Influence. The remaining concerns will therefore focus upon the protected habitats and species of the River Barrow and Nore SAC and the River Nore SPA.

4.4 SCREENING CONCLUSIONS

The application site is *not directly connected with or necessary to the nature conservation management of the designated site*. Therefore, following consideration of the location of the River Barrow and River Nore SAC and the River Nore SPA in relation to the application site at Grennan at Attanagh, and the potential impacts that may have occurred in the past, or those that could arise in the future, this application must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

5 APPROPRIATE ASSESSMENT (REMEDIAL NIS)

5.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the application for Substitute Consent and its associated activities at Grennan in Attanagh (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the River Barrow and Nore SAC and the River Nore SPA, with respect to these site's structures, species, functions and/or conservation objectives. These effects may have arisen in the past, they may still be ongoing and in the absence of mitigation, they may occur in the future. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive substitute consent.

In this section, the Natura 2000 site identified in the previous section will be described in greater detail in terms of their site characteristics and conservation objectives.

5.2 NATURA 2000 SITES IDENTIFIED

RIVER BARROW AND RIVER NORE (SAC SITE CODE 0002162)

This site consists of most of the freshwater stretches of the Barrow/Nore River catchments. The Barrow is tidal as far upriver as Graiguenamanagh, whilst the Nore is tidal as far upriver as Inishtioige. The site also includes the extreme lower reaches of the River Suir and the entire estuarine component of Waterford Harbour extending to Creadan Head. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains. They traverse limestone bedrock for a good proportion of their routes, though the middle reaches of the Barrow and many of the eastern tributaries run through Leinster Granite. A wide range of habitats associated with the rivers are included within the site, including substantial areas of woodland (deciduous, mixed), dry heath, wet grassland, swamp and marsh vegetation, salt marshes, a small dune system and intertidal sand and mud flats. Areas of improved grassland, arable land and coniferous plantations are included in the site for water quality reasons.

The site supports many Annexed habitats including the priority habitats of alluvial woodland and petrifying springs. The quality of habitat is generally good. The site also supports a number of Annex II animal species - *Salmo salar*, *Margaritifera margaritifera*, *M.m. durrovensis*, *Alosa fallax fallax*, *Austropotamobius pallipes*, *Petromyzon marinus*, *Lutra lutra*,

Lampetra fluviatilis and *L. planeri*. Annex I Bird species include *Anser albifrons flavirostris*, *Falco peregrinus*, *Cygnus cygnus*, *Cygnus columbianus bewickii*, *Limosa lapponica*, *Pluvialis apricaria* and *Alcedo atthis*. A range of rare plants and invertebrates are found in the woods along these rivers and rare plants are also associated with the saltmarsh.

The main habitat types within this SAC include:

- Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (20%)
- Salt marshes, Salt pastures, Salt steppes (1%)
- Shingle, Sea cliffs, Islets (1%)
- Inland water bodies (10%)
- Bogs, Marshes, Water fringed vegetation, Fens (10%)
- Heath, Scrub, Maquis and Garrigue, Phygrana (5%)
- Humid grassland, Mesophile grassland (17%)
- Improved grassland (15%)
- Other arable land (1%)
- Broad-leaved deciduous woodland (5%)
- Coniferous woodland (3%)
- Mixed woodland (5%)
- Inland rocks, Screes, Sands, Permanent Snow and ice (1%)
- Other land (1%)
- Coastal sand dunes, Sand beaches, Machair (1%)
- Extensive cereal cultures (4%)

The habitats within the SAC close to the application site include the River Barrow itself and its riparian grassland, woodland and treeline habitats. There is also a finger of broadleaved woodland extending south from the river towards the site and this woodland is 41m west of the site.

The Conservation Objective(Generic) of the River Barrow and River Nore SAC is:

To maintain / restore the favourable conservation status of the qualifying interests of this SAC.

In 2011, the NPWS published Site Specific Conservation Objectives (SSCOs) for this SAC. These conservation objectives were also supported by a number of other documents relating to the woodland and coastal habitats of this large SAC. These SSCO aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable condition for a habitat or species at a particular site. The maintenance of habitats and species within the Natura 2000 sites at

favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. For the River Barrow and Nore SAC, these SSCOs can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these SSCOs were assessed and where necessary, mitigated for.

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 specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;
- The conservation status of its typical species is favourable.

Favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or range of areas used by the species, other than that occurring from natural patterns of variation.

NON-RELEVANT QUALIFYING INTERESTS OF THE SITE (SCREENED OUT)

The River Barrow and River Nore SAC covers an extensive area of the south-east of Ireland. It passes through eight counties, therefore there are certain features within this SAC that will not be potentially impacted upon from this development, either due to the distance involved or because they are features that are not sensitive to changes in water quality. Therefore, these features can be screened out from further AA assessment. These features and the reason for their exclusion are listed in Table 2.

Designated Feature	Reason for Exclusion
Allis shad (<i>Alosa alosa</i>)	It is considered that the Allis shad is an opportunistic spawner in Irish waters; and there is no evidence of an established breeding population being present in the Barrow system. It is generally considered a vagrant species (NPWS, 2013)
Desmoulin's Whirl Snail (<i>Vertigo moulinsiana</i>)	This species is found in wetlands (Swamps, marches and fens) on the verges or rivers, lakes, canals and ponds. The main threat to this species is drainage. The development at Grennan has not led to the drainage of any wetlands, not will any be drained in the future. No impacts upon this species are predicted. In addition, there are no records for this species within the 10km square of this application site (S47). Records from this SAC for this species occur from Borris, Co. Kilkenny, which is on the Barrow River and not connected to the application site and from a wetland in Kilnaseer, Co. Laois, which is 10km west of the application site and not hydrologically downstream of it. Both these locations are outside of the zone of influence of this development and no impacts are anticipated.
Freshwater pearl mussel (<i>Margaritifera margaritifera</i>)	The habitat of <i>Margaritifera margaritifera</i> is acid/neutral waters which flow over non-calcareous rocks (Moorkins, 1999). While it remains listed as a feature of the River Barrow and River Nore SAC, this is being reviewed as suitable conditions for this species don't occur within the lime rich Barrow / Nore catchments (NPWS, 2008, 2011)
Killarney Fern (<i>Trichomanes speciosum</i>)	This is a terrestrial species that occurs in the southern reaches of the Barrow system. This species does not occur within the zone of influence of the application site and no impacts upon this species are likely.
Twaite shad (<i>Alosa fallax fallax</i>)	This species is found only downstream of St. Mullins, in south Co. Kilkenny. It potentially only occurs downstream of the confluence of the River Nore and Barrow, which is approximately 71km downstream of the River Nore at Attanagh. The main pressures on this species include invasive, non-native fish species such as dace, as well as fishing and harvesting. The populations of Twaite shad occur in the Barrow and are therefore outside of the zone of influence of this development.
Sea lamprey (<i>Petromyzon marinus</i>)	This species occurs in the lower reaches of the Barrow and Nore systems. It does not occur within the Zone of Influence of the application site.

Atlantic salt meadows	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.
Estuaries	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.
European dry heaths	Any change in water quality will not impact upon this habitat. This habitat is not within the zone of influence of the application site as it occurs on the steep, free draining river valley sides of the Barrow and its tributaries in the foothills of the Blackstairs Mountains.
Mediterranean salt meadows	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.
Mudflats and sandflats not covered by seawater at low tide	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.
Old sessile oak woods with Ilex and Blechnum in British Isles	Old sessile oak woodland is defined in the Habitats Directive interpretation manual as "acidophilous Quercus patraea woods, with low branched trees with many ferns, mosses, lichens and evergreen bushes". This habitat is not water dependent and potential changes in water quality will not impact this habitat. In addition, the Site Specific Conservation Objectives (SSCOs) for this SAC have not identified this habitat close to or within the zone of influence of the application site (Map 6) and potential impacts upon this habitat are not likely to occur.
Alluvial forests with Alnus glutinosa and Fraxinus excelsior	The Site Specific Conservation Objectives (SSCOs) for this SAC have not identified this habitat close to or within the zone of influence of the application site (Map 6) and potential impacts upon this habitat are not likely to occur. There will be no changes to the hydrological regime in any area that could give rise to negative effects upon this QI.
Petrifying springs with tufa formation (Cratoneurion)	Petrifying springs occur where lime-rich water emerges from below ground and deposits calcium carbonate or 'tufa' on the ground surface. Tufa appears as a whitish, crunchy coating on plants and on the ground surface. It may become consolidated into a porous rock, often forming a cascade down a hillside. The SSCO for this site have mapped the distribution of this habitat within the SAC (Map 6). There are no records of this habitat type within the Zone of Influence of the application site.
Salicornia and other annuals colonizing mud and sand	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.
Spartina swards	This is a coastal habitat and it is approximately 90km downstream of Attanagh. No impacts upon this habitat are predicted given the downstream distances involved.

**Table 2 – The Qualifying Interests of the River Barrow and River Nore SAC
(Screened Out)**

RELEVANT QUALIFYING INTERESTS OF THIS SITE (SCREENED IN)

Table 3 describes the qualifying interests of the River Barrow and River Nore SAC that had / have the potential to be impacted upon from the application. These QIs have been screened into the AA process. The NPWS Site Specific Conservation Objectives (SSCOs) and Article 17 reports (2019) were consulted for the following information.

Designated Feature	Reason for Inclusion
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	The distribution of this habitat type within the Barrow/Nore SAC is unknown. It is considered to occur in association with some riverside woodlands, unmanaged edges of slow moving rivers, river islands and in narrow bands along the floodplain of slow-flowing stretches of river. Nutrient levels may be naturally high. The community is dominated by tall hydrophilous herbs, for example <i>Angelica sylvestris</i> , <i>Filipendula ulmaria</i> , <i>Iris pseudacorus</i> , <i>Lysimachia vulgaris</i> , <i>Lythrum salicaria</i> and <i>Valeriana officinalis</i> . This habitat requires winter inundation, which results in the deposition of nutrient-rich silt laden waters. This habitat is sensitive to changes in the hydrological regime of its associated river. It is also sensitive to grazing, pollution and invasive species. As it is sensitive to pollution that could have arisen in the past and could arise in the future, and mitigation may be required to protect this habitat, this QI has been screened in.
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	This habitat is also commonly known as floating river vegetation. Its definition is wide and <i>Ranunculus</i> , <i>Callitriche</i> , <i>Potamogeton</i> and <i>Myriophyllum</i> species are often present. Pressures on this habitat include eutrophication, overgrazing and alien species. River connectivity with the floodplain is essential for the functioning of this habitat. This habitat is sensitive to changes in the hydrological regime of its associated river. It is also sensitive to grazing, pollution and invasive species. As it is sensitive to pollution that could have arisen in the past and could arise in the future, and mitigation may be required to protect this habitat, this QI has been screened in.
River lamprey (<i>Lampetra fluviatilis</i>) and brook lamprey (<i>Lampetra planeri</i>)	A study by King (2006) on the status and distribution of lamprey in the River Barrow, found that the distribution of the <i>Lampetra</i> genus in the River Barrow to be sparse. However, the River Barrow at its confluence with the Figile River should be able to support these species. There is no scientific reason why lamprey species would not occur in this area, therefore, their presence within the zone of influence of the application site should be assumed. In addition, the SSCO for both these species cite that the target for the distribution of these species should be 75% of the main stem length of the rivers accessible from the estuary. Therefore, it is an objective of this SAC to have lamprey distributed throughout the majority of this SAC therefore the targets required to achieve this objective must be met throughout the SAC. Lamprey require clean gravels for spawning, whilst the juveniles require fine sediments for burrowing. Free upstream migration to complete their life cycle is also important. Artificial barriers can block lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. Significant effects could have arisen in the past on this species and they could arise in the future if there is any decrease in water quality or increase in sedimentation levels in the River Barrow and

	Nore SAC.
Salmon (<i>Salmo salar</i>)	<p>The Atlantic salmon is known to occur throughout the Barrow system. In addition, the SSCO for the salmon cites that the target for the distribution of this species should be 100% of the river channels down to second order streams accessible from the estuary. Therefore, it must be assumed that salmon occur within the Zol of the application site, and if they do not presently occur then there should be no impediments arising from the development that would prevent the restoration of the favourable conservation condition of this species in the Nore River or its tributaries.</p> <p>Significant effects could have arisen in the past on this species and they could arise in the future if there is any decrease in water quality or increase in sedimentation levels in the River Barrow and Nore SAC.</p>
Otter (<i>Lutra lutra</i>)	<p>The otter occurs throughout the Barrow system. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter comprises of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frogs can also be important. Impacts that reduce the availability or quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills, and (3) accidental deaths.</p> <p>In Ireland, the territory of female otters in mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of males otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation. Therefore, as otters exhibit a wide territory range overall, it is possible that application site and its surrounding lands fall into the territory of the otter.</p> <p>Significant effects could have arisen in the past on this species and they could arise in the future if there is any decrease in water quality or increase in sedimentation levels in the River Barrow and Nore SAC.</p>
White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	<p>Crayfish need at least a Q3-4 in the rivers they occupy. (Demers & Reynolds, 2002). It is generally considered to be an ecosystem keystone or heritage species rather than a bio-indicator, because of its traditional importance and its large size, longevity and position in the ecosystem (Matthews & Reynolds, 1992). Crayfish need high habitat heterogeneity. Larger crayfish must have stones to hide under, or an earthen bank in which to burrow. Hatchlings shelter in vegetation, gravel and among fine tree - roots. Smaller crayfish are typically found among weed and debris in shallow water. Larger juveniles in particular may also be found among cobbles and detritus such as leaf litter. These conditions must be available on the whole length of occupied habitat (NPWS, 2011). The greatest threat to this species is introduced non-native crayfish and disease, such as has been seen recently with the loss of crayfish populations due to the crayfish plague. Crayfish are also sensitive to pollution. Records for the crayfish exist from the River Nore near Attanagh, and therefore as they are likely to occur within the Zone of Influence of the application site, mitigation measures will be recommended for the protection of this species.</p>

Nore Freshwater pearl mussel (<i>Margaritifera durrovensis</i>)	This species only occurs within the Nore system, upstream and downstream of Durrow. Therefore, it occurs within the Zone of Influence of the application site and its spreadlands. This species is highly sensitive to changes in water quality. Significant effects could have arisen in the past on this species and they could arise in the future if there is any decrease in water quality or increase in sedimentation levels in the River Barrow and Nore SAC.
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Table 3 – The Qualifying Interests of the River Barrow and River Nore SAC (Screened In)

SSCOs of the Screened-In Qualifying Interests

In 2011, the NPWS published Site Specific Conservation Objectives (SSCOs) for this SAC. These conservation objectives were also supported by a number of other documents relating to the woodland and coastal habitats of this large SAC. The additional attributes and targets which define the SSCO of the qualifying interests of the River Barrow and Nore SAC which were screened into this AA are outlined below in Tables 4 – 11.

Hydrophilous Tall Herb Fringe Communities (6430)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat distribution	Occurrence	No decline, subject to natural processes.
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Hydrological regime: Flooding depth/height of water table	Metres	Maintain appropriate hydrological regimes.
Vegetation structure: sward height	Cm	30-70% of sward between 40 and 150cm
Vegetation composition: broadleaf herb: grass ratio	Percentage	Broadleaf herb component of vegetation between 40% and 90%
Vegetation composition: typical species	Number	At least 5 positive indicator species present
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control. NB Indian balsam (<i>Impatiens glandulifera</i>), monkeyflower (<i>Mimulus guttatus</i>), Japanese knotweed (<i>Fallopia japonica</i>) and giant hogweed (<i>Heracleum mantegazzianum</i>).

Table 4 – SSCO for Hydrophilous Tall Herb Fringe Communities

Water Courses of Plain to Montaine Levels (3260)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat distribution	Occurrence	No decline, subject to natural processes
Habitat area	Km	Area stable or increasing, subject to natural processes
Hydrological regime: river flow	m/s	Maintain appropriate hydrological regimes
Hydrological regime: groundwater discharge	m/s	The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation
Substratum composition: particle size range	Mm	The substratum should be dominated by large particles and free from fine sediments
Water chemistry: minerals	Mg/l	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits
Water quality: suspended sediments	Mg/l	The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments.
Water quality: nutrients	mg / l	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition.
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type should be present and in good condition
Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained.

Table 5 – Water Courses of Plain to Montaine Levels

River Lamprey (1099)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem and major tributaries down to second order accessible from estuary
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of river / brook lamprey present
Juvenile density in fine sediment	Juveniles / m ²	Mean catchment juvenile density of brook / river lamprey at least 2/m ²
Extent and distribution of spawning habitat	M ² and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2ns order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 6 – SSCOs for River Lamprey

Brook Lamprey (1096)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% of river accessible	Access to all watercourses down to first order streams
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of brook lamprey present
Juvenile density in fine sediment	Juveniles / m ²	Mean catchment juvenile density of brook lamprey at least 2/m ²
Extent and distribution of spawning habitat	M ² and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2ns order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 7 – SSCOs for Brook Lamprey

Salmon (1106)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded
Salmon fry abundance	No of fry / 5 mins electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry / 5 minute sampling
Out-migrating smolt abundance	Number	No significant decline
Number and distribution of reeds	Number and Occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes
Water quality	EPA Q Value	At least Q4 at all sites sampled by the EPA.

Table 8 – SSCOs for Salmon

Otter (1355)

The SSCO for this species is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136ha along riverbanks / around ponds
Extent of Marine Habitats	Hectares	No significant decline. Area mapped and calculated as 857.7ha
Extent of Freshwater (River) Habitat	Km	No significant decline. Length mapped and calculated as 616.6km
Extent of Freshwater (Lake) Habitats	Hectares	No significant decline. Area mapped and calculated as 2.6ha
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline

Table 9 – SSCOs for Otter

White-clawed crayfish (1092)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	Occurrence	No reduction from baseline
Population structure: recruitment	Percentage occurrence of juveniles and females with eggs	Juveniles and / or females with eggs in at least 50% of positive samples
Negative indicator species	Occurrence	No alien crayfish species
Disease	Occurrence	No instances of disease
Water quality	EPA Q value	At least Q3-4 at all sites sampled by the EPA
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline in habitat heterogeneity or habitat quality

Table 10 – SSCOs for Crayfish

Nore freshwater pearl mussel (1990)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	Km	Maintain at 15.5km (Map 7 of SSCOs)
Population size: adult mussels	Number	Restore to 5,000 adult mussels
Population structure: recruitment	Percentage per size class	Restore to at least 20% of population no more than 65mm in length, and at least 5% of population no more than 30mm in length.
Population structure: adult mortality	Percentage	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution
Habitat extent	Km	Restore suitable habitat in length of river corresponding to distribution target (15.5km) and any additional stretches necessary for salmonid spawning
Water quality: Macroinvertebrates and phytobenthos (diatoms)	Ecological quality ratio (EQR)	Restore water quality-macroinvertebrates: EQR greater than 0.90; phytobenthos: EQR greater than 0.93
Substratum quality: Filamentous algae (macroalgae), macrophytes (rooted higher plants)	Percentage	Restore substratum quality-filamentous algae: absent or trace (<5%); macrophytes: absent or trace (<5%)
Substratum quality: sediment	Occurrence	Restore substratum quality-stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment.
Substratum quality oxygen availability	Redox potential	Restore to no more than 20% decline from water column to 5cm depth in substrate
Hydrological regime: flow variability	m/s	Restore appropriate hydrological regimes
Host fish	Number	Maintain sufficient juvenile salmonids to host glochidial larvae

Table 11 – SSCOs for Nore Freshwater Pearl Mussel

Potential Impacts

Potential impacts upon this SAC include:

- Pollution of water in the River Nore and its tributaries at points close to the application site arising from poor surface water management during the construction of the building seeking Substitute Consent and from the ongoing operation of the farmyard and the main access laneway from the public road;
- Pollution of groundwater at points close to the farmyard due to inappropriate management of surface waters and farms structures during ongoing and future operation.

- Pollution of surface water or groundwater arising from the land-spreading of the organic manure produced on the farm. This potential impact would exist regardless of the presence or absence of the shed seeking retention.

These impacts could subsequently give rise to significant effects upon the QIs which have been screened in. In the absence of mitigation, these significant effects may have arisen in the past, they may be ongoing and they may continue into the future.

RIVER NORE (SPA 004233)

The River Nore SPA is a long, linear site that includes the following river sections: the River Nore from the bridge at Townparks, (north-west of Borris in Ossory) to Coolnamuck (approximately 3 km south of Inistioge) in Co. Kilkenny; the Delour River from its junction with the River Nore to Derrynaseera bridge (west of Castletown) in Co. Laois; the Erkina River from its junction with the River Nore at Durrow Mills to Boston Bridge in Co. Laois; a 1.5 km stretch of the River Goul upstream of its junction with the Erkina River; the Kings River from its junction with the River Nore to a bridge at Mill Island, Co. Kilkenny. The site includes the river channel and marginal vegetation.

For a large part of its course the River Nore traverses Carboniferous limestone plains; it passes over a narrow band of Old Red Sandstone rocks below Thomastown. The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: Kingfisher.

A survey in 2010 recorded 22 pairs of Kingfisher (based on 16 probable and 6 possible territories) within the SPA. Other species which occur within the site include Mute Swan (35), Mallard (267), Cormorant (14), Grey Heron (45), Moorhen (14), Snipe (17) and Sand Martin (1,029) – all figures are peak counts recorded during the 2010 survey. The River Nore SPA is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive.

The NPWS have not yet produced SSCOs for this SPA. However, the main target of this SPA would be to protect the numbers and habitats of the kingfisher. Records held by the National Biodiversity Data Centre for this species confirm its presence along the River Nore within the Zone of Influence of the application site and its spreadlands. Therefore, significant effects upon this species (past, ongoing, future) must be considered further. The main threat to this species would arise from deteriorations in water quality arising from poor surface water management on the farm yard and from inappropriate land-spreading. A

deterioration in water quality further may affect the ecological integrity of the River Nore and subsequently on the food chain that this bird depends on.

5.3 SUMMARY OF POTENTIAL IMPACTS

INTRODUCTION

The identification of impacts and the assessment of their significance typically requires the identification of the type and magnitude of the impacts. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation. This section will establish whether the potential impacts and subsequent effects of the application at Grennan that were identified in the previous section, are likely to occur and whether or not they are significant. These potential impacts will be examined with respect to the conservation objectives of the Natura 2000 site identified. Impacts and effects have been considered on a temporal scale, i.e., those that might have occurred in the past, those that are currently ongoing and those that could arise in the future.

In the screening section of this report, the following possible impacts on the River Barrow and Nore SAC and River Nore SPA were listed. These impacts are again listed below and they will be dealt with in more detail in this section.

1. Deterioration in water quality in designated areas arising from pollution due to the initial construction of the unauthorised structures and the ongoing and continuation of farm activities within the application site itself. Inappropriate surface water management in the farm yard may lead to impacts upon the River Nore and Barrow SAC and the River Nore SPA. Negative impacts upon local groundwater resources and subsequent effects on the Natura 2000 sites have also been considered.
2. Potential impacts on water quality within the River Barrow and Nore SAC / River Nore SPA arising from the use of the organic manure produced on the farm in the past, present and future. Negative impacts upon local groundwater resources and subsequent effects on the Natura 2000 sites have also been considered. These potential impacts would exist even in the absence of the shed seeking retention permission as they were present prior to the construction of the shed.
3. Cumulative impacts.

Deterioration in Water Quality in the SAC / SPA arising from the Initial Construction and Subsequent Farmyard Operations

During the construction of the unauthorised structure, silt, hydrocarbon or cement laden run-off from the construction area may have resulted in the pollution of local drains or watercourses, especially during periods of heavy rain. In addition, the ongoing and continued operation of the farmyard and access lane could also potentially result in the run-off of contaminated surface water.

Therefore, possible impacts on the SAC / SPA include the pollution of local watercourses with silt, oil, farmyard manure or slurry. These impacts could have arisen in the past, they could currently be ongoing or they could continue to arise in the future. These impacts could cause significant effects upon the Qualifying Interest habitats of the SAC and SPA.

However, as there are no watercourses or drains within or adjacent to the application site and area of construction works that lead to the SAC/SPA and having regards to the existing vegetated buffer zones that were always maintained around the shed, then the source-pathway-receptor link between the application site itself and the SAC / SPA is weak and therefore this risk is considered to be insignificant. There is a drain along the northern edge of the access road, however, this is removed from the main area of construction works and therefore run-off into this drain during construction would not have arisen.

All soiled surface water from the farmyard in Grennan is being directed to existing storage tanks until it can be spread under optimal climate conditions on lands surrounding the farm in Grennan. It is not exported from this area and its use does not generate additional traffic along the lane. The volume of soiled water generated in the yard has been accounted for in the current Nutrient Management Plan that has been prepared for the farm. The use of this soiled water for land-spreading in accordance with the Nitrates Directive, would not have any significant effects upon the River Barrow and Nore SAC or the River Nore SPA.

Clean water from the roof of the shed requiring retention permission is falling to the ground around the shed currently. As this is clean, uncontaminated water, this would not have any impact upon local surface or ground water receptors.

The application site was also assessed in terms of its groundwater vulnerability. An examination of the Groundwater Vulnerability maps produced by the Geological Survey of Ireland revealed that the farm yard is located within an area of high groundwater vulnerability. Areas of extreme groundwater vulnerability occur to the north, south and south-west of the site. Any structural weaknesses in the effluent tanks on the site could lead

to impacts upon groundwater in the locality. Groundwater quality can impact upon surface water quality as these two resources mix at the hyporheic zone, which is the region just under a river or stream bed where there is a mixing of ground water and surface water.

Land-Spreading

The land-spreading of organic manure arising at Grennan and Ironmills has been ongoing for many years, prior to the construction of the shed seeking retention and it is not occurring specifically due to this development. The land-spreading of the organic manure produced at the farm will occur on land within the Nore catchment, and the applicant has land-holdings within, adjacent and hydrologically connected to the SAC and SPA. General environmental impacts arising from inappropriate land-spreading of manure can lead to serious impacts upon the receiving waters in local catchments and it can result in eutrophication, algal blooms, fish kills and loss of biodiversity. Designated habitats and species can be impacted upon and it can take years for the eco-system to recover.

In addition, land-spreading in areas of high or extreme groundwater vulnerability or where bedrock occurs at the surface can also result in pollution of groundwater and subsequently on surface water resources. As the applicant has lands within areas that are of high – extreme vulnerability, in the absence of mitigation measures that might have been carried out, it cannot be ruled out that land-spreading in these areas would not or did not lead to direct or indirect impacts upon the River Barrow and Nore SAC, the River Nore SPA, their qualifying interests and the targets and attributes that are required to either maintain or restore these interests in good conservation condition.

IN-COMBINATION EFFECTS

The potential for cumulative impacts arising from other significant existing or permitted infrastructure are assessed here. Cumulative impacts encompass the combined effects of multiple developments or activities on a range of receptors. Potential cumulative impacts associated with the existing and permitted significant infrastructure within the same water catchments as the development should be considered.

As part of the Appropriate Assessment, in addition to the existing development, other relevant projects and plans in the region must also be considered. This step aims to identify at this stage any possible significant in-combination or cumulative effects / impacts of the works on the Natura 2000 sites with other such plans and projects.

Laois County Development Plan

Planning policy at the local level is provided by the Laois County Development Plan 2017–2023. This plan contains a number of policies relevant to the ecology and nature conservation in Co. Laois. This plan was accompanied by a Natura Impact Report (Caas, 2017). The implementation of this plan will not lead to any cumulative impacts when considered in-combination with this current application at Attanagh.

Future Plans / Other Projects

The Laois County Council planning map tool was used to identify any future plans or projects in the Grennan / Attanagh areas which may potentially impact in-combination with the application on any Natura 2000 sites. A search was made for applications within the last five years. In this time, a number of planning applications were granted in the Attanagh area for domestic and agricultural developments, and where necessary these were screened for AA. These applications are detailed below:

Planning Reference	Location	Description	AA
17589	Grawn, Attanagh	Construct a two storey house, septic tank, percolation area, entrance & associated siteworks	Screened for AA in the planner's report. Significant effects upon Natura 2000 site ruled out.
1777	Fermoyle, Attanagh,	Construct a new dwelling with associated garage, sewage treatment, infiltration area and all ancillary works	AA screening not requested
18204	The Glebe, Attanagh	construct (i) slatted cubicle house (ii) slatted feeding tank and all associated site works.	An NIS was submitted following an FI request.
1839	Curraghacronacon, Attanagh,	Retain (a) extension and alterations to dwelling house; (b) change of use from outbuilding to extension to domestic shed/store and all associated site works	AA screening not requested
18470	Gurraun, Attanagh	retain domestic garage and all associated site works	AA screening not requested

1878	Brandra, Attanagh	construct a loose house with silage wall, uncovered slatted tank and feed area, all as an extension to existing loose house, uncovered slatted tank and feed area and all associated works and services	AA screening not requested
20545	Grennan, attanagh	Demolish existing old dwelling and construct new dwelling house in its place and all associated site works...	AA screening not requested

Table 12 – Developments Permitted in Attanagh in the Last Five Years

In relation to current and future planning applications, Laois County Council, as the competent authority, will screen each application for AA. Any new application will be examined and the requirement for screening for AA or NIS will be determined on a case by case basis to comply with the requirements of Article 6 of the Habitats Directive.

The current application for permission to retain the structures at the farm in Grennan, Attanagh, Co. Laois will have no significant effects upon The River Barrow and Nore SAC or the River Nore SPA when considered in-combination with the other permitted developments in the area.

5.4 MITIGATION MEASURES

CONSTRUCTION PHASE

Mitigation Measures Considered for Works Previously Carried Out

Measures potentially carried out during the initial construction works which would have mitigated against the potential for significant effects to have arisen on the River Barrow and Nore SAC / SPA include:

- Works were undertaken within an existing area that has no surface water features on it and therefore no direct surface water connectivity between the area of construction works to the SAC / SPA. The site is 743m east of the SAC boundary. During the construction works on the shed, existing grassland habitats and hedgerows around and beyond the site boundary were retained. The retention of these existing vegetation features would have created a natural buffer to prevent any run-off generated from the works from mobilising to any significant distance beyond the site boundaries itself.

Therefore, this buffer would have prevented significant effects upon the SAC / SPA during construction.

- The majority of the ground works were carried out in the summer months of 2016, and finishing works was completed over the next number of months. Therefore, the majority of the ground works were undertaken in dry weather and this would have prevented excess run off from mobilising from the site towards the SAC / SPA.
- The construction of the shed seeking Substitute Consent allowed for soiled water from the external hard-core areas and feed areas surrounding it to be directed into a slatted tank in accordance with the relevant Department of Agriculture Code of Practices and Specifications. This soiled water has been accounted for in the annual Nutrient Management Plans that have been prepared for the farm since 2016. This soiled water was spread in accordance with S.I. 605 of 2017.

Ongoing Measures and Additional Mitigation Measures Which Must be Implemented

- It is recommended that the farm structures proposed for retention are visually inspected to ensure the external finishes are in compliance with Department specification.
- A detailed Surface Water Management plan has been prepared for the farm by IE Consulting Engineers. Surface water runoff from external hard-standing areas is considered as soiled water and surface water runoff from roof drainage is considered as clean or uncontaminated water. Soiled water is being directed to the existing slatted tanks and land-spread in accordance with the current NMP that has been prepared for the entire farm by an approved agricultural adviser. The volume of this soiled water has been accounted for in all calculations and spread rates undertaken as part of the current NMP.
- There are gutters on the existing shed seeking Substitute Consent but no downpipes. Remedial works will involve the addition of downpipes on this shed and the creation of a new soak pit to the north of the shed. Details on the proposed remedial works have been outlined by IE Consulting Engineers. Surface water runoff generated from roof drainage shall be collected via a suitable gutter and pipe drainage system and shall discharge to a soakaway system at the location illustrated in Figure 8. The soakaway system shall provide both appropriate attenuation of surface water runoff from the roof drainage and permit discharge of surface water runoff to ground via infiltration.

Environmental Agricultural Consultants have undertaken an analysis of the proposed soakaway system. The soakaway system has been appropriately designed in accordance with recognised and industry standard methodologies and Codes of Practice (i.e. BRE Digest 365) and that the soakaway shall be constructed utilising appropriate materials

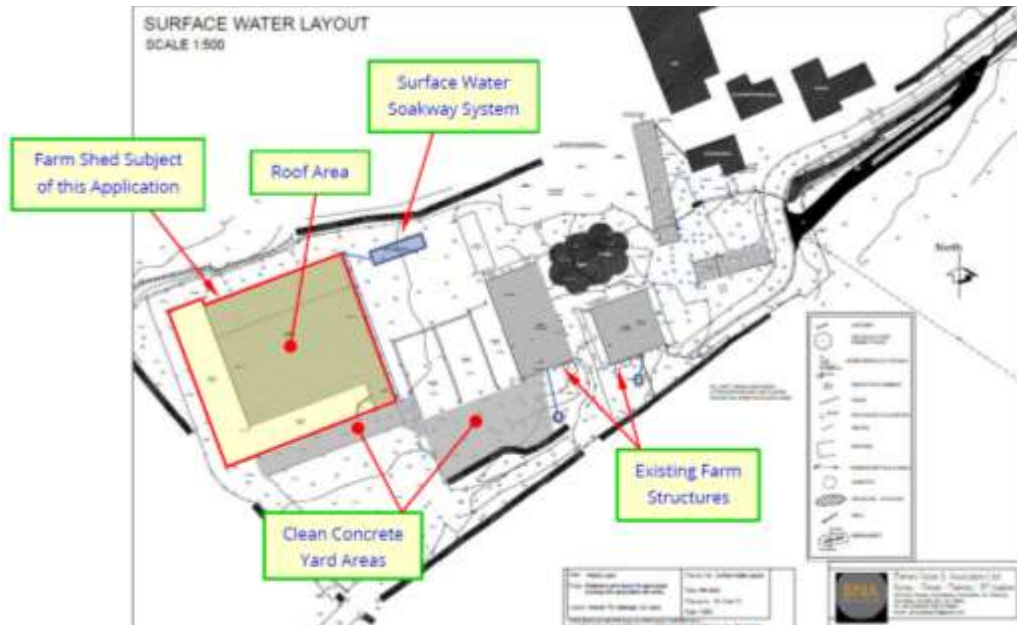


Figure 8 – The Site Plan including Details of Proposed Soakaway System (from Fig 1 of Report Prepared by IE Consulting)

OPERATIONAL PHASE

Mitigation Measures Considered for Works and Activities Previously Carried Out

Land-Spreading and Farm Operation

The applicant previously engaged Whitehill Environmental to prepare previous reports on the works at Grennan and in these earlier stages, he was advised that land-spreading should be avoided in land-banks within the SAC / SPA. In the NIS previously submitted for the leave to apply for Substitute Consent, it was advised that landbanks in Knockroe and Castlemarket should be excluded. These were excluded in 2021 and in the years previous to this since the works were completed.

The use of manure within the remaining landbanks was done in accordance with all the guidelines set out in S.I. 605 of 2017. This would have minimised run-off into surface watercourses and it would also have protected groundwater resources.

Ongoing / Additional Mitigation Measures Which Should be Implemented During Continued Operation of the Farm

Current Nutrient Management Plan

- A NMP has been prepared by a qualified agricultural advisor (Michael Ryan) based on the current stock rates on the entire farm holding. This report details all lands available for receipt of slurry, including grasslands and tillage lands and the current whole farm stocking rate (166.38 kg/ha). These calculations consider the stock for the closed period and they also calculate the soiled water & slurry produced, along with the rate of slurry applied to the ground. The NMP notes that the applicant has adequate housing facilities for all the animals within his care. There are also adequate facilities for the storage of organic manures and for the storage of soiled water as required under the Nitrates Regulations.

The NMP deals with all the slurry produced by the entire farm holding based on the 2021 land area, stocking rate, housing, soiled yards and the holding tank facilities for both yards (Grennan and Ironmills) in 2021. It also deals with the requirements for the farm to remain compliant with the stocking rate provisions of the Nitrates Regulations by specifying the amount of slurry to be exported in 2021 and the TB test numbers for 2021. This plan now forms the basis of the 2022 planned farming operations and remains valid until the new maps become available from the Department of Agriculture.

Under this 2021 NMP - slurry was exported. This ensured that the whole farm stocking rate remained below 170kg org N/Ha as required by law.

In addition, soil tests have been carried out and an acceptable rate of Index 3 for Phosphorus (P) for all land farmed has been taken. This means that no P fertiliser above the indicated amounts may be applied on the holding. The NMP has recommended that no P chemical fertiliser is applied thus assuming P index 4 by default, which cannot lead to a breach of any rules concerning P fertiliser application. This assumption has no effect on the application of organic manures as any holding may apply all organic manures produced on it irrespective of the P status of the holding even on P Index 4 soils in certain situations.

This NMP demonstrates that the applicant does not need to spread organic manures on any lands designated within the River Barrow and Nore SAC or the River Nore SPA and that the requirement to respect buffer zones where required is also independent of the rate of application of manures in the rest of the individual plots concerned. The limiting factor in the amount of organic manure to be spread is the availability of same, not the ability of the land to take the manure loading permitted. This arises as there is a significant export of slurry related to the requirement to remain stocking rate compliant in the absence of a Derogation as the farm has more than 5% tillage area and thus is not permitted to apply for a Nitrates Derogation. Were there to be no tillage crops, then a derogation could be applied for and then the whole farm stocking rate could be raised to 250 kg Org N/ha which is much higher than the current whole farm stocking rate before exports of slurry.

Land-Spreading Measures

In order to avoid any reductions in water quality within the catchment as a whole, all organic fertiliser must be used in accordance with S.I. 605 of 2017 European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2017). The following measures should be implemented at the applicant's farm on an ongoing basis.

- Guidelines within the Department of Agriculture's Explanatory Handbook for Good Agricultural Practice Regulations must be followed at all stages of the operation of the yard.
- Manure should only be spread in accordance with the Nutrient Management Plan for the farm and in accordance with S.I. 605 of 2017.
- All farm yard discharge should be in accordance with the specifications within the Department of Agriculture's "Minimum specification for Farmyard Drainage, Concrete Yards and Roads".
- Manure should not be spread in areas where bedrock occurs at the surface. Manure should not be spread in areas of extreme groundwater vulnerability unless a consistent minimum thickness of soil and subsoil is demonstrated according to the Geological Survey Ireland Response Matrix for Landspreading."
- The amount of livestock manure applied in any year to land on a holding, together with that deposited to land by livestock, shall not exceed an amount containing 170 kg nitrogen per hectare.

- To avoid contamination of the local watercourses in areas identified for land-spreading, a minimum buffer zone of 10m for any main river channels and 5m for smaller watercourses should be adhered to at all times during the application of effluent. Buffer zones should be increased depending on the gradient of the land. *In addition, when the waterbody is with 1km upstream of a water dependent designated site (SAC / SPA) the buffer for a river should be increased to 20m while a stream should be increased to 10m.*
- Manure should not be applied within 3m of open field drains or ditches in accordance with Good Agricultural Practice for Protection of Water 2017 S.I. 605 of 2017.
- Land spreading should only take place when suitable climatic and environmental conditions exist. Spreading should be avoided on:
 - wet or waterlogged soils
 - land sloping steeply towards water courses
 - frozen or snow covered soils
- Effluent should not be applied in proximity of hedgerows and field margins. This will maintain the biodiversity of these areas and allow for a more natural ecological corridor.
- The spreading of any organic fertiliser during certain times of the year is prohibited (The prohibited spreading period, generally between Mid-October and Mid-January).
- The applicant must keep within the overall maximum fertilisation rates for nitrogen and phosphorus.
- The applicant must have sufficient storage capacity to meet the minimum requirements of the regulations.
- All storage facilities must be kept leak proof and structurally sound.
- Records for the movement of fertilisers must be kept.
- Chemical fertilisers, livestock manure and other organic fertilisers, effluents and soiled water must be spread as accurately and as evenly as possible.

- An upward-facing splash plate or sludge irrigator on a tanker or umbilical system must not be used for the spreading of organic fertiliser or soiled water.
- Chemical fertilisers, livestock manure, soiled water or other organic fertilisers must not be spread when:
 - The land is waterlogged;
 - The land is flooded, or it is likely to flood;
 - The land is frozen, or covered with snow;
 - Heavy rain is forecast within 48 hours;
 - The ground slopes steeply and there is a risk of water pollution, when factors such as surface run-off pathways, the presence of land drains, the absence of hedgerows to mitigate surface flow, soil condition and ground cover are taken into account.
- Chemical fertilisers must not be spread on land within 2 metres of a surface watercourse.
- Soiled water, effluents, farmyard manures or other organic fertilisers must not be spread inside the buffer zones specified in S.I. 605 of 2017, i.e.,
 - Any water supply source providing 100m³ or more of water per day, or serving 500 or more people – 2000m;
 - Any water supply source providing 10m³ or more of water per day, or serving 50 people or more – 100m;
 - Any other water supply for human consumption – 25m;
 - Lake shoreline or a turlough likely to flow – 25m;
 - Exposed cavernous or karstified limestones features – 15m;
 - Any surface watercourse where the slope towards the watercourse exceeds 10% - 10m;
 - Any other surface waters – 5m.

- The applicant should liaise with National Parks and Wildlife Service in regards to the proper management of the callow habitats. It is recommended that in conjunction with the NPWS, that the applicant participates in the NPWS Farm Plan Scheme (<https://www.npws.ie/farmers-and-landowners/schemes/npws-farm-plan-scheme>).
- The applicant has land-holdings adjacent to a number of watercourses. The opportunity exists here for the creation of natural riparian buffer zones which will have positive impacts on biodiversity and water quality.

5.5 APPROPRIATE ASSESSMENT CONCLUSION

This remedial NIS has been undertaken to evaluate the potential impacts of the development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the River Barrow and Nore SAC and the River Nore SPA. Impacts were considered as either having potentially occurred or having the potential to occur.

The rNIS identifies mitigation measures that were in place which have, are and will continue to ensure avoidance of these effects; so that the structure and functions of the SAC and SPA are not affected, thus demonstrating that mitigation was/will be sufficient to avoid adverse impacts throughout the time periods of the development assessed. These mitigation measures are set out in Section 6 and they are largely informed by the current Nutrient Management Plan that has been prepared for the farm which considers that there will be no spreading within the SAC / SPA, that there is excess storage capacity within the farm for the volumes of manure produced and that the whole farm stocking rate will be below 170kg N/ha/yr. In addition, there is no direct surface water connectivity between the application site itself and the SAC / SPA, meaning that run-off from the construction and operation of the farm is not likely to have given rise to significant effects upon the SAC / SPA. In addition, all soiled water generated from the yard is being directed to storage tanks for spreading in accordance with S.I. 605 of 2017.

The implementation of these all these mitigation measures on site means that it can be concluded in the light of best scientific knowledge, that there has been no, nor will there be any significant effects upon the River Barrow and Nore SAC / SPA or the QIs for which these sites have been designated.



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