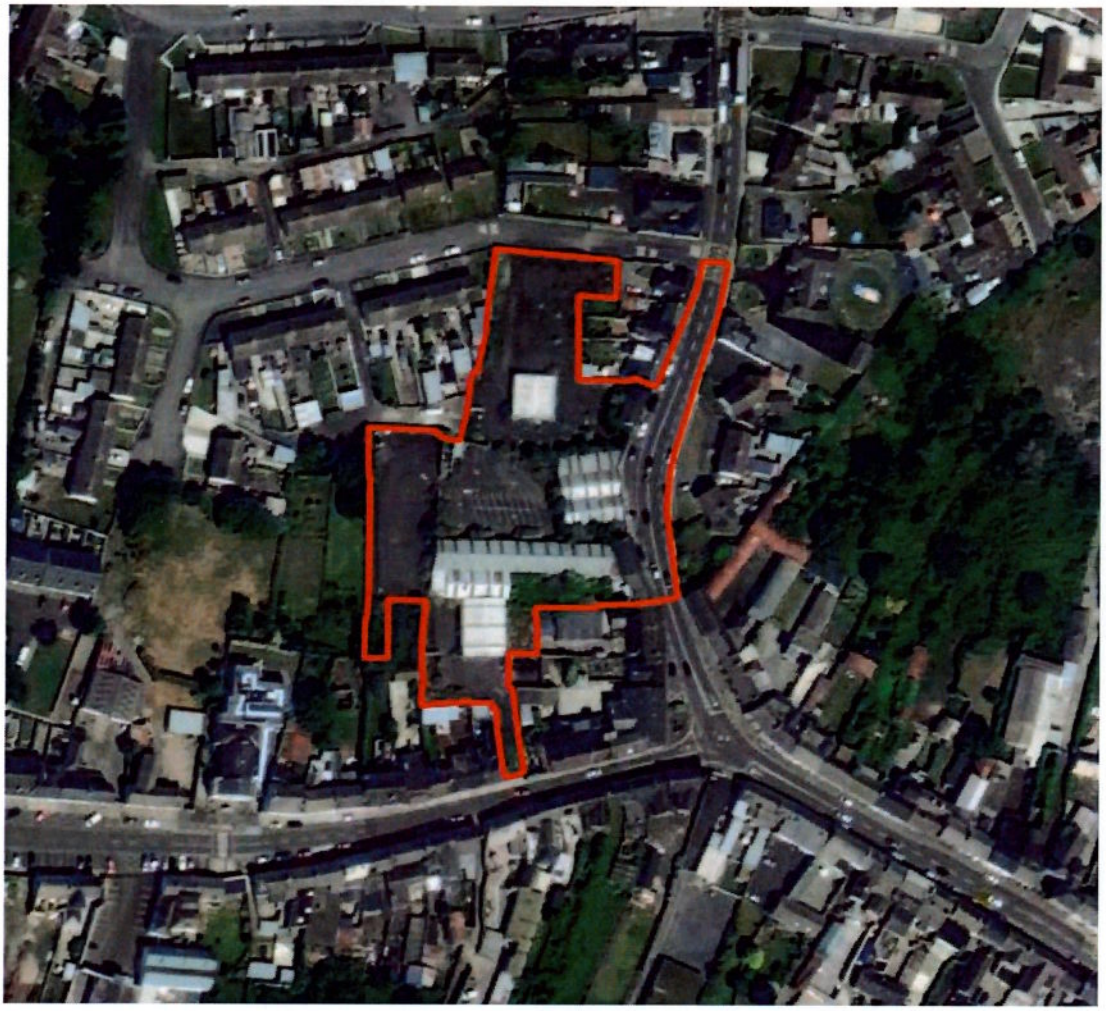
ALTEMAR

Marine & Environmental Consultancy

Appropriate Assessment Screening & Natura Impact Statement- Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for a Proposed Discount Foodstore Supermarket Development at Emmett Street, Mountmellick, Co. Laois.



28th May 2025

Prepared by: Frank Spellman of Altemar Ltd.
On behalf of: Lidl Ireland GmbH

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Document Control Sheet			
Project	Appropriate Assessment Screening & Natura Impact Statement - Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for a Proposed Discount Foodstore Supermarket Development at Emmett Street, Mountmellick, Co. Laois.		
Report	Appropriate Assessment Screening & Natura Impact Statement		
Date	28th May 2025		
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Contents

1. Introduction

The following Appropriate Assessment (AA) (Screening Stage) and Natura Impact Statement (NIS) has been prepared by **Altemar Ltd.** at the request of Lidl Ireland GmbH for a Proposed Discount Foodstore Supermarket Development at Emmett Street, Mountmellick, Co. Laois.

An Appropriate Assessment is an assessment of the potential effects of a proposed project or plan, on its own, or in combination with other plans or projects, on one or more Natura 2000 sites. Natura 2000 sites are those sites designated as Special Areas of Conservation (SAC) or Special Protection Areas (SPA).

The AA Screening stage examines the likely significant effects of a plan or project, either on its own, or in combination with other plans and projects, upon a Natura 2000 site and considers whether, on the basis of objective scientific evidence, it can be concluded that there are not likely to be significant effects on any European site, in view of best scientific knowledge and the conservation objectives of the relevant European sites.

The Natura Impact Statement examines whether the plan or project, either alone, or in combination with other plans and projects, in the view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European sites.

1.1 Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include: residential; infrastructural; renewable; oil & gas; private industry; Local Authorities; EC projects; and, State/semi-State Departments. Bryan Deegan, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 30 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. He is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan carried out all elements of this Appropriate Assessment Screening.

This report has also been prepared by Frank Spellman. Frank has extensive experience in carrying out a wide range of fauna surveys as both a sub-contractor and employee for environmental consultancies and organisations in Ireland and the US. These include both roving and static acoustic bat surveys, terrestrial non-avian mammal surveys, breeding/wintering bird surveys, and freshwater ecology surveys. Frank has been lead ornithologist on numerous development projects within Ireland carrying out full wintering bird and breeding bird assessments.

2. Background to the Appropriate Assessment

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/1477/EC)) forms the cornerstone of Europe's nature conservation policy. The Habitats Directive protects over 1000 animals and plant species and over 200 "habitat types" which are of European importance. In the Habitats Directive, Articles 3 to 9 provide the legislative means to protect habitats and species of European Community interest through the establishment and conservation of an EU-wide network of conservation sites (NATURA, 2000). These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive, Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment:

"Any plan or project not directly connected with or necessary to the management of the [NATURA 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the component 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."

As outlined in "Managing European sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" (European Commission, 21 November 2018) *"The purpose of the appropriate assessment is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in combination with other plans or projects. The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate assessment is therefore specifically on the species and/or the habitats for which the European site is designated."*

As outlined in the EC guidance document on Article 6(4) (January 2007)[1]:

"Appropriate assessments of the implications of the plan or project for the site concerned must precede its approval and take into account the cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives. This implies that all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.

Assessment procedures of plans or projects likely to affect European sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity. Regardless of whether the provisions of Article 6(3) are delivered following existing environmental impact assessment procedures or other specific methods, it must be ensured that:

- *Article 6(3) assessment results allow full traceability of the decisions eventually made, including the selection of alternatives and any imperative reasons of overriding public interest.*
- *The assessment should include all elements contributing to the site's integrity and to the overall coherence of the network as defined in the site's conservation objectives and Standard Data Form, and be based on best available scientific knowledge in the field. The information required should be updated and could include the following issues:*
    - *Structure and function, and the respective role of the site's ecological assets;*
    - *Area, representativity and conservation status of the priority and nonpriority habitats in the site;*
    - *Population size, degree of isolation, ecotype, genetic pool, age class structure, and conservation status of species under Annex II of the Habitats Directive or Annex I of the Birds Directive present in the site;*
    - *Role of the site within the biographical region and in the coherence of the European network; and,*
    - *Any other ecological assets and functions identified in the site.*
- *It should include a comprehensive identification of all the potential impacts of the plan or project likely to be significant on the site, taking into account cumulative impacts and other impacts likely to arise as a result of the combined action of the plan or project under assessment and other plans or projects.*
- *The assessment under Article 6(3) applies the best available techniques and methods, to estimate the extent of the effects of the plan or project on the biological integrity of the site(s) likely to be damaged.*
- *The assessment provides for the incorporation of the most effective mitigation measures into the plan or project concerned, in order to avoid, reduce or even cancel the negative impacts on the site.*
- *The characterisation of the biological integrity and the impact assessment should be based on the best possible indicators specific to the European assets which must also be useful to monitor the plan or project implementation."*

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

3. Stages of the Appropriate Assessment

This Appropriate Assessment screening and Natura Impact Statement was undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001), Part XAB of the Planning and Development Act 2000, as amended, in addition to the December 2009 publication from the Department of Environment, Heritage and Local Government; 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities' and the European Communities (Birds and Natural Habitats) Regulations 2011. In order to comply with the above Guidelines and legislation, the Appropriate Assessment process has been structured as follows:

1) Screening stage:
   - Description of plan or project, and local site or plan area characteristics;
   - Identification of relevant European sites, and compilation of information on their qualifying interests and conservation objectives
   - Identification and description of individual in combination effects likely to result from the proposed project;
   - Assessment of the likely significance of the effects identified above. Exclusion of sites where it can be objectively concluded that there will be no likely significant effects; and,
     Conclusions
2) Appropriate Assessment (Natura Impact Statement):
   - Description of the European sites that will be considered further;
   - Identification and description of potential adverse impacts on the conservation objectives of these sites likely to occur from the project or plan; and,
   - Mitigation Measures that will be implemented to avoid, reduce or remedy any such potential adverse impacts
   - Assessment as to whether, following the implementation of the proposed mitigation measures, it can be concluded, beyond all reasonable scientific doubt, that there will be no adverse impact on the integrity of the relevant European Site in light of its conservation objectives"
   - Conclusions.

If it can be demonstrated during the AA screening phase (Stage 1), that the proposed project will not have a significant effect, whether alone or in combination with other plans or projects, on the conservation objectives of a Natura 2000 site, then no further AA (Stage 2) will be required. It is important to note that there is a requirement to apply a precautionary approach to AA screening. Therefore, where effects are possible, certain or unknown at the screening stage, AA will be required.

In addition, it should be noted that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an AA of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

4. Stage 1 Screening Assessment

4.1 Management of the Site

The plan or project is not directly connected with, or necessary to the management of European sites.

4.2 Description of the Proposed Project

Planning Permission is sought by Lidl Ireland GmbH for development at a site located at Emmett Street, Mountmellick, Co. Laois.

The development will consist of the following:

1) The demolition of 8 no. existing vacant buildings, removal of additional ancillary / derelict structures and associated site clearance;

2) The construction of a part single part two storey Discount Foodstore (with ancillary off-licence use) with mono-pitch roof measuring c. 2,201 sqm gross floor space with a net retail sales area of c. 1,457 sqm;

3) Construction of associated car and cycle parking with revised main site access from (and associated works on) Emmett Street. Existing site accesses to the rear lane of Twomey Terrace will be removed. Existing site access to O'Moore Street will remain in situ; and,

4) Provision / repair / replacement (as required) of boundary treatments, free standing and building mounted signage, free standing trolley bay, roof mounted refrigeration and air conditioning plant and equipment, hard and soft landscaping, public lighting, electric vehicle charging infrastructure, roof mounted solar panels, ESB substation, drainage, utility and services infrastructure and connections, and all other associated and ancillary development and works above and below ground level.

The proposed site outline, location, and site plan are demonstrated in Figures 1-3.

4.3 Landscape

The landscape strategy for the proposed development has been prepared by Austen Landscape Architects. The proposed landscape plan is demonstrated in Figure 4.

4.4 Drainage

A Services Design Report has been prepared by SDS Ltd. for the proposed project. It outlines the following foul and stormwater drainage strategies:

Foul Drainage / Watermains – Uisce Eireann

'4.1 Existing Foul Sewer

According to Uisce Eireann map records and NLS utility survey the following foul mains have been identified:

1. *300mm Dia Uisce Eireann uPVC foul main which flows in a westerly direction from manhole Ex. F-1 to manhole EX. F-5.*
2. *225mm Dia Uisce Eireann uPVC foul main along Emmett Street, which flows from north to south.*
3. *225mm Dia Uisce Eireann Concrete foul main along o Moore Street, which flows in a westerly direction towards Manhole Ex. F-1.0.*

Please refer to Uisce Eireann map records in Appendix D and drawing no 24107-SDS-10-XX-DR-C-1025 and 24107-SDS-10-XX-DR-C-1025B for existing Uisce Eireann foul mains.

4.2 Uisce Eireann Pre-Connection Enquiry

A Pre-Connection enquiry form was submitted to Uisce Eireann for the new Lidl Discount Foodstore Supermarket at Mountmellick Co. Laois in April 2025 based on a gravity connection to the existing foul sewer network located at Manhole Ex. F-5.0. The Pre-Connection enquiry has been assigned the reference number CDS25002509, and please refer to Appendix J for copy of Confirmation of Feasibility received from Uisce Eireann.

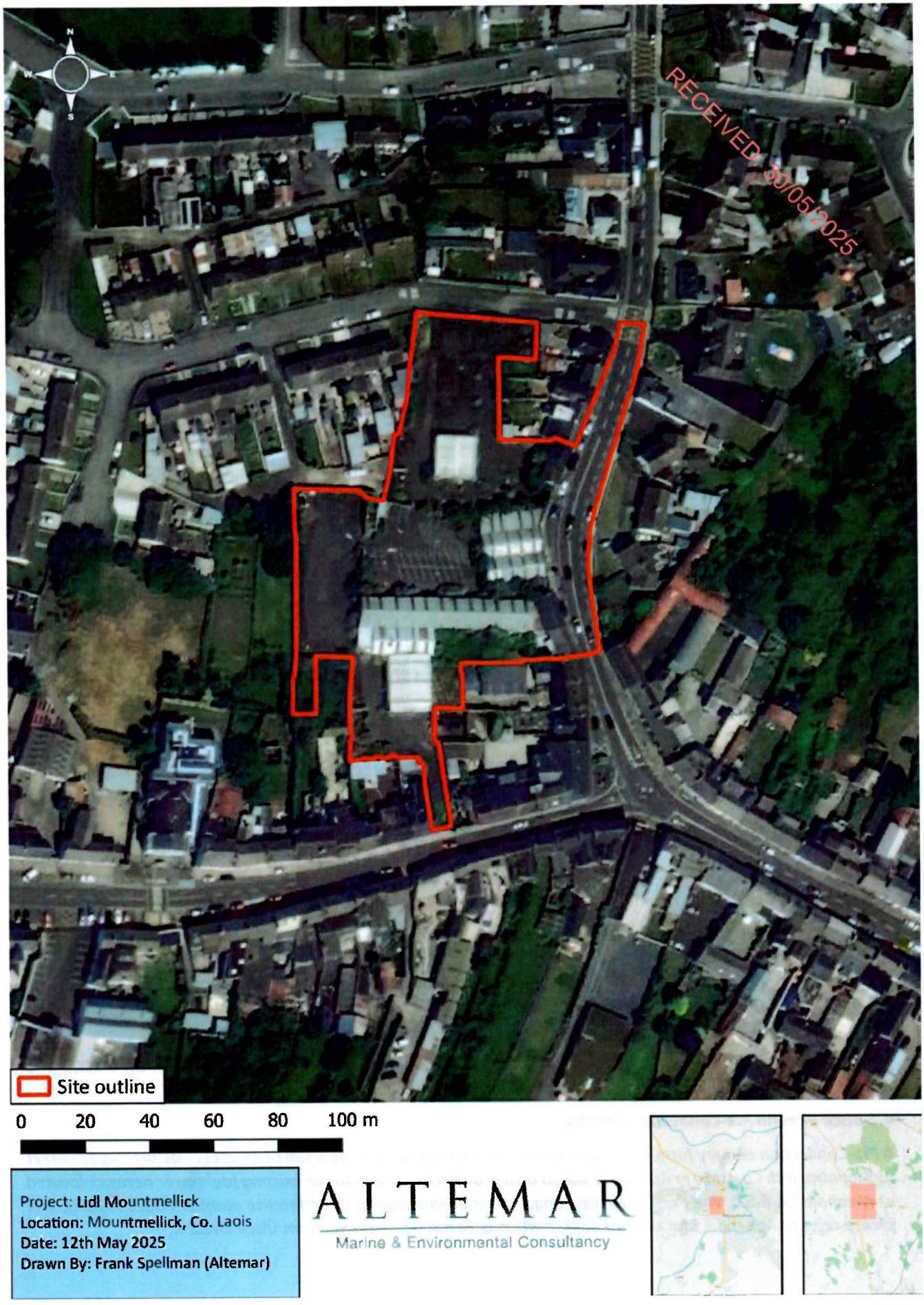

Figure 1. *Site outline*

Figure 2. *Site location*

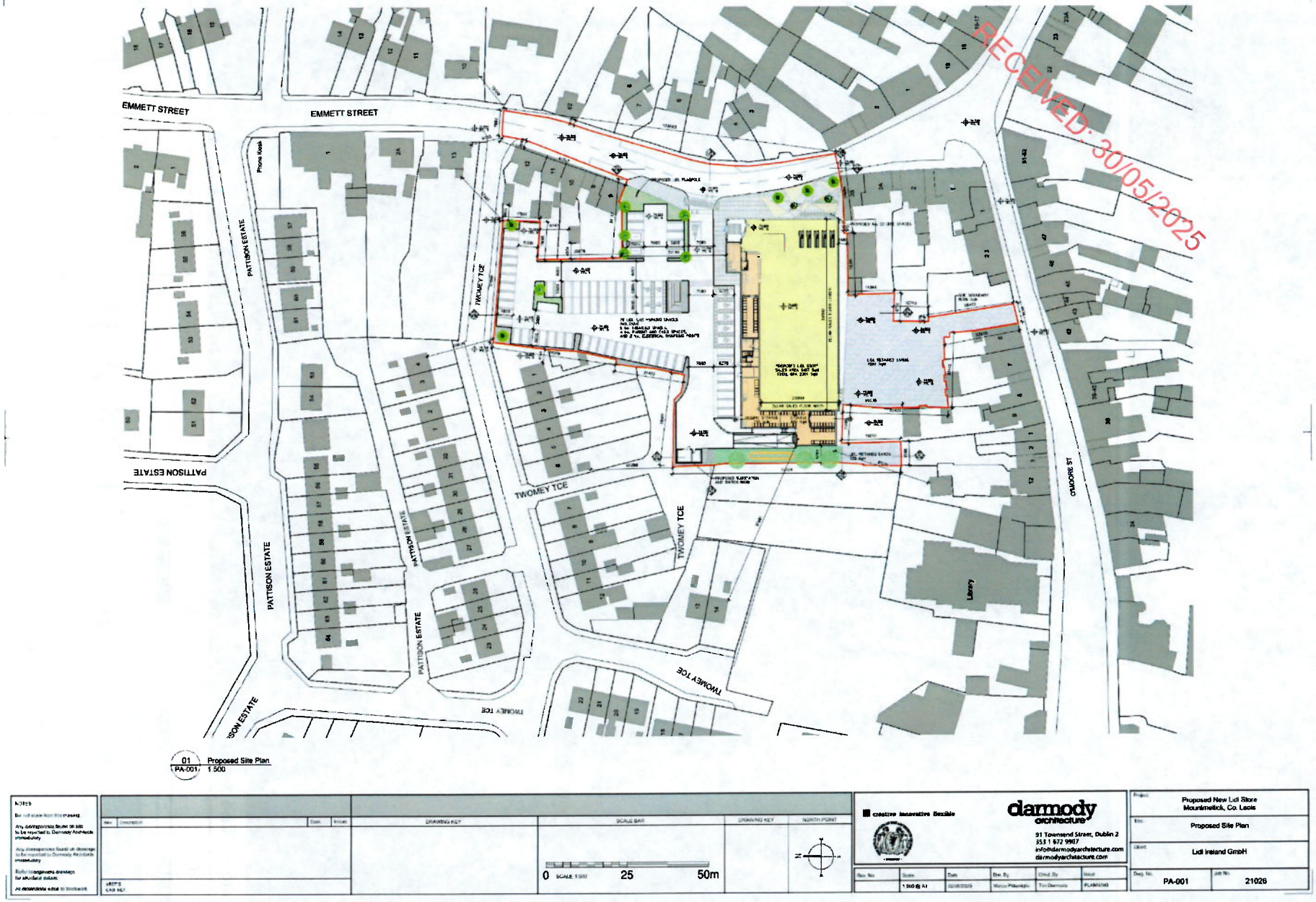

Figure 3. *Proposed site plan*

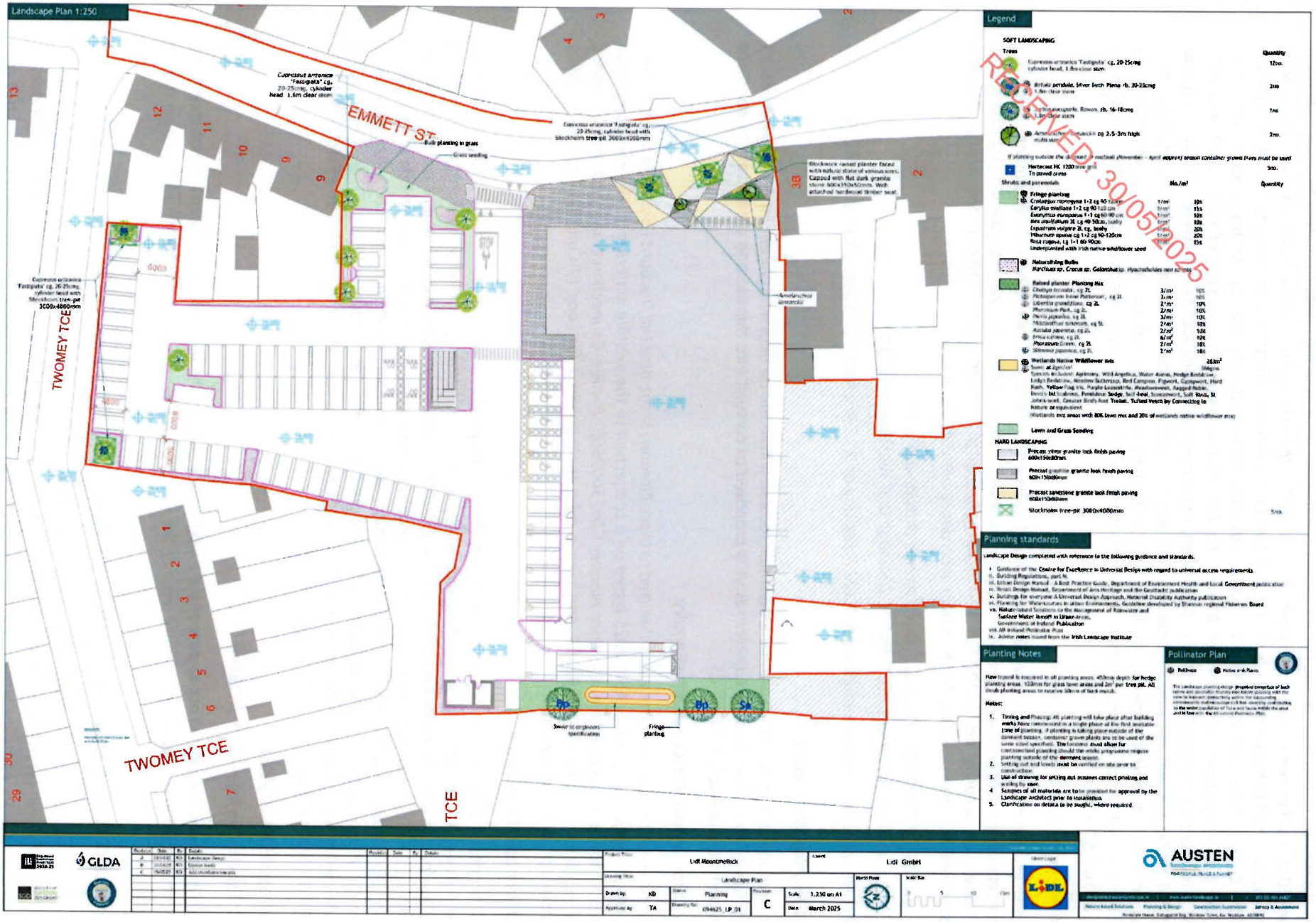

Figure 4. *Proposed landscape plan*

4.3 Foul Diversion

A foul diversion application for the Uisce Eireann 225mm Dia. uPVC foul main was submitted to Uisce Eireann in April 2025 and has been assigned diversion no. DIV25113. The existing Uisce Eireann 300mm Dia. uPVC will be decommissioned between Manhole Ex. FW 1.0 and Ex. Ex. F-5.0 as illustrated on drawing no. 24107-SDS-10-XXDR- C-1025 and 24107-SDS-10-XX-DR-C-1025B as it clashes with the substructure for the proposed Lidl store. Figure 4.1 below shows the proposed 300mm Dia. PVC foul diversion at a gradient of 1:300, 1:29, and 1:38, which is approximately 127m in length. As a result, the section of existing foul main between Manhole F-1.0 to Ex. F-4 to Ex. F-5 will become decommissioned, which is approximately 86m in length. The foul diversion application is viewable in Appendix K. Please refer to drawing no. 24155-SDS-10-XX-DR-C-1030 for existing and proposed longitudinal sections. All proposed manholes to be constructed in accordance with details on drawing no. 24107_SDS-10-XX-DR-C-1030.

4.4 Proposed Foul Sewer Network

A new 150mm dia PVC foul sewer pipe is proposed to be provided to service the new development, which will connect into the proposed diverted Uisce Eireann foul main at manhole MH F-3.0 at a gradient of 1:150 and 1:13 as shown on drawing no. 24107-SDS-10-XX-DR-C-1025 24107-SDS-10-XX-DR-C-1025B. The new foul sewer system will be constructed within the site in accordance with the following:

- *BS EN 752:2008 – Drain & Sewer Systems Outside Buildings,*
- *Building Regulations - TGD Part H, Drainage and Wastewater Disposal.*

'The overall daily wastewater loading is 9,123 litres/day or 9.123m3/day and a peak flow of 0.6340 l/s.'

'5.1 Existing Watermain

There is an existing 125mm Dia. uPVC watermain located within the carriageway of Emmett Street as shown on NLS Survey and Uisce Eireann map records. It is proposed to connect into this existing watermain as per Uisce Eireann standard detail STD-W-05.

5.2 Uisce Eireann Pre-Connection Enquiry

A Pre-Connection enquiry form was submitted to Uisce Eireann for the new Lidl Discount Foodstore Supermarket, at Mountmellick Co. Laois in April 2025 based on a connection to the existing watermain. The Pre- Connection enquiry has been assigned the reference number CDS25002509, The Pre-Connection enquiry has been assigned the reference number CDS25002509, and please refer to Appendix J for copy of Confirmation of Feasibility received from Uisce Eireann.

5.3 Proposed Watermain

The proposed development will be connected to the existing public watermain (100mm Cast Iron) which runs just outside the eastern boundary of the proposed application site. Allowing for a drinking water requirement of 2 l/day/person and the wastewater daily loading of 9.123m3 day, the proposed development will require in the order of 10.02m3 of potable water per day. The proposed connection for the store will be made in accordance with rish Water Standard Details for Non-Mechanical Meter Chamber (40-250mm diameter): Ref. STD-W-26-Rev 03. Please refer to drawing 25107-SDS-10-XX-DR-C-1026 for the location and details of the proposed watermains network and fire hydrants proposed for the new site layout. Refer to drawing no 25107 SDS-10-XX-DR-C-1420 for typical Uisce Eireann standard details.'

<u>Surface Water Strategy</u>

'3.2 Existing Surface Water Network

A utility survey was carried out as part of the topographical survey and the existing site area has not an existing surface network, only a manhole in the east of the site, that will be the point connection for the new surface design.'

3.8 PROPOSED SURFACE WATER COLLECTION SYSTEM

The proposed development includes the creation of a new surface water collection network designed to capture surface water run-off from roof gutters and downpipes. This system will also incorporate a series of bioretention swales, a network of gullies, asphalt porous, bioretention/rainwater gardens and a proposed attenuation tank

system situated throughout the site. These elements will be integrated to align with the design specifications for the finished car park layout. For further details on the proposed surface water collection network, please refer to drawing no. 25107-SDS-10-XX-DR-C-1025 and 25107-SDS-10-XX-DR-C-1025B.

The analysis utilised based on an effective contributing area of 3180m², which corresponds to a minimum required attenuation volume of 203 m³, as shown in Appendix E.

At car park level, surface water will be initially collected by the aforementioned roof gutters/downpipes and rain garden, along with sizeable areas of porous paving, and swale. Moreover, the bioretention rain garden will be underlaid with a voided stone sub-base, with surface water collected from the bioretention garden areas being routed to, and subsequently treated in, this voided stone sub-base, which is designed to incorporate a minimum stone depth of 500mm with 30% voids. This method of surface water treatment allows for the sub-base to cater for a surface water storage capacity of approximately 173.3m3. Please refer to Appendix E for attenuation volume and design parameters implemented in the design. The proposed attenuation tank will provide approximately 130m3 of storage. Before entering the attenuation tank, all surface water will be cleansed by an inline petrol interceptor located between MH S-9.0 and MH S-8.0. Please refer to Appendix F for information on proposed petrol interceptor.

After the surface water has passed through all Suds features, surface water that has been routed both from behind the rear of the proposed Lidl store, and through the car park area, will meet at proposed surface water. Thereafter, the outflow from the site is to be restricted by a HydroBrake limiting the surface water flow from the site to a discharge rate of 5 l/s/ha or 4.4l/s. Please see below for a more detailed description of the attenuation system and outflow control from this site. The surface water collection network will be constructed in accordance with the following:

- *BS EN 752:2008 – Drain & Sewer Systems Outside Buildings,*
- *Building Regulations - TGD Part H – Drainage and Wastewater Disposal,*

Outflow From Site

The discharge from this development is proposed to connect into existing 225mm/300mm Dia. public surface water network at manhole Ex. S 12-0 as shown on drawing no. 25107-SDS-10-XX-DR-C-1025 and 25107-SDS-10-XX-DR-C-1025B at a restricted rate of 5 l/s/ha or 4.4 l/s. It is proposed to use an optimum Hydrobrake International and please refer to Appendix H for additional information.

Surface Water Attenuation System

As previously mentioned, the surface water attenuation system is to comprises of rain garden, and attenuation tank. In total, these SuDS features provide a cumulative surface water storage volume of 130m3. All the above have been designed to provide storage for the surface water generated in a 1 in 100-year rainfall event. The rainfall generated by such an event will be increased by an allowance of 20% to cater for predicted climate change due to global warming. This storage volume of 130m3 will be adequate in terms of treating and storing surface water in the event of the rainfall event. Rainfall return period data was utilised from Met Éireann, which is presented in Appendix I. The main input parameters were used as part of the Microdrainage simulations which include:

- *Time of entry = 4 minutes*
- *Standard Average Annual Rainfall Event, SAAR = 1070*
- *Soil Type = 2 (based on site investigation data)*
- *SPR = 0.30 (as per GDSDS, Volume 2, Table 6.7)*
- *M5-60 = 18.3mm (from Met Eireann rainfall data, E:289004, N:223008)*
- *Ratio r, ($M5-60)/(5-2Day)$ = 0.235'*

The proposed drainage plan is demonstrated in Figure 5.

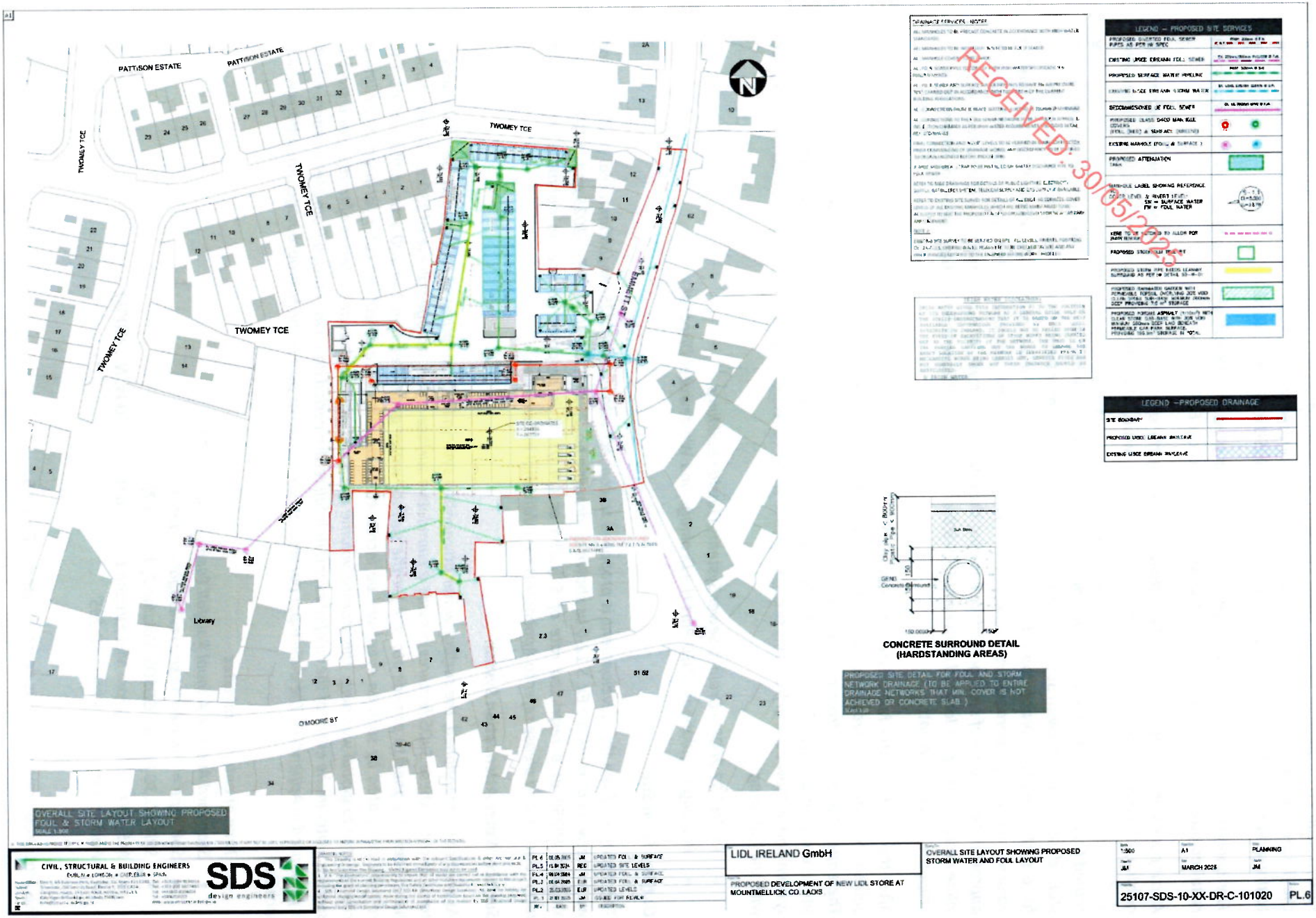

Figure 5. *Proposed drainage plan*

4.5 Identification of Relevant European Sites

The proposed development site is not within a European site. As outlined in Office of the Planning Regulator (2021) *"The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source- Pathway-Receptor framework and not by arbitrary distances (such as 15 km)."*

A key factor in the consideration as to whether or not a particular European site is likely to be affected by the proposed development is its distance from the development location. It is generally, but not necessarily, the case that the greater the distance from the plan or project the smaller the likelihood of impacts. In this case, the nearest European site to the proposed development is the River Barrow & River Nore SAC (305 m). The nearest watercourses to the subject site are the Manor House Stream, located approximately 280 m to the west, and the Owenass River located approximately 360 m to the east of the subject site (Figure 8). It is the Owenass to the east where surface water from the proposed development site ultimately outfalls. There is an existing public surface water network located to the east of the site along Emmett Street. This public network ultimately outfalls to the Owenass River approximately 360 m from the subject site. Given that the public surface water network is located directly adjacent to the subject site, and the fact that surface water drainage will outfall to this network during construction and operation, there is an indirect hydrological pathway to the River Barrow & River Nore SAC via surface water drainage.

Foul water from the proposed development will discharge to the existing public foul sewer network on Emmet Street, which ultimately discharges to Mountmellick wastewater treatment plant (WWTP) for treatment under licence. This WWTP's current operation is compliant according to the Uisce Eireann Annual Environmental Report 2024, and capacity will not be exceeded in the next 3 years[2]. In the absence of mitigation, foul water from the site will not significantly affect the qualifying interests of European sites.

After onsite attenuation, surface water from the proposed development will be directed to the public surface water network adjacent to the site on Emmett Street, which ultimately discharges to the Owenass River approximately 360 m away. As a result, there is an indirect hydrological connection to the River Barrow & River Nore SAC via surface water drainage. Given the scale of the proposed development, the nature of the proposed works, and the short distance to the Owenass River along this public network (~360m), out of an abundance of caution, and in the absence of mitigation, it is considered that there is the potential for significant downstream effects on the qualifying interests of the River Barrow & River Nore SAC. Mitigation measures are necessary to protect the qualifying interests of this designated European site.

In the interest of carrying out a thorough assessment in line with both the Habitats Directive and the precautionary principle, the area of assessment was expanded beyond the ZoI to include designated sites within 15km of the proposed development site, and sites beyond 15km with the potential for a Source-Pathway-Receptor connection. This was done in the interest of ensuring that any pathways, however indirect or remote, were considered. All Natura 2000 sites within 15km, and beyond 15km with the potential for a hydrological pathway are listed in Table 1. The qualifying interests, and the potential impact of the development on each European site and qualifying interest, are screened in/out in Table 2. SPA's and SAC's within 15km are seen in Figures 6 & 7. Watercourses, waterbodies, and SACs proximate to the subject site are demonstrated in Figures 8 & 9. Given that there are no Natura 2000 sites with a direct or indirect pathway beyond 15km of the subject site, no impacts are foreseen on Natura 2000 sites beyond 15km.

[2] www.water.ie/sites/default/files/2025-05/D0152-01_2024_AER.pdf

Table 1. Proximity to NATURA 2000 sites

European Site	Code	Distance	Direct Hydrological / Biodiversity Connection
Special Areas of Conservation			
IE002162	River Barrow and River Nore SAC	305 m	No
IE002141	Mountmellick SAC	4.1 km	No
IE000412	Slieve Bloom Mountains SAC	7.9 km	No
Special Protection Areas			
IE004160	Slieve Bloom Mountains SPA	5.5 km	No

Table 2. Initial screening of NATURA 2000 sites within 15km and European sites further than 15km with potential of hydrological connection to the proposed development

European Site Code	Name	Screened IN/OUT	Details/Reason
Special Areas of Conservation			
IE002162	River Barrow & River Nore SAC	**IN**	**Conservation Objectives** The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (Cratoneurion) [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016] *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] *Austropotamobius pallipes* (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Alosa fallax fallax* (Twaite Shad) [1103] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355] *Trichomanes speciosum* (Killarney Fern) [1421] 1990 Nore freshwater pearl mussel *Margaritifera durrovensis*

European Site Code	Name	Screened IN/OUT	Details/Reason
			Potential Impact The proposed development is located 305 m from this SAC. There is no direct hydrological pathway from the subject site to this SAC. There is an indirect hydrological pathway to this SAC via surface water drainage. As demonstrated in Figure 5, there is an existing public storm sewer located adjacent to the site along Emmett Street to the east of the site. This network ultimately outfalls to the Owenass River approximately 360 m to the east of the site. Given the proposed use of this public network for discharge from the subject site and the short distance to this SAC along the public network (~360 m), it is considered that, in the absence of mitigation, there is the potential for likely significant effects on this SAC during construction and operation. During operation, there is the potential for silt, dust, and pollutants from the subject site to enter this network and cause downstream impacts on this SAC. During operation, there is the potential for silt and pollutants from the site to enter this public network and cause downstream impacts on this SAC. Mitigation measures are required. Foul water from the proposed development will discharge to the existing public foul sewer network on the Emmett Street, which ultimately discharges to Mountmellick wastewater treatment plant (WWTP) for treatment under licence. This WWTP's current operation is compliant based on Uisce Eireann's 2024 Annual Environmental Report, and capacity will not be exceeded in the next 3 years[3]. In the absence of mitigation, foul water from the site will not significantly affect the qualifying interests of this SAC. Mitigation measures are required to protect the qualifying interests of this SAC due to the short indirect hydrological pathway via surface water drainage. **Stage 2 AA (NIS) is Required.**
IE002141	Mountmellick SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016] **Potential Impact** The proposed development is located 4.1 km from this SAC. There is no direct or indirect hydrological pathway from this site to the SAC. No potential impact is foreseen. There is no direct or indirect pathway from this site to the SAC. The construction and

[3] https://www.water.ie/sites/default/files/docs/aers/2023/D0036-01_2023_AER.pdf

European Site Code	Name	Screened IN/OUT	Details/Reason
			operation of the proposed development will not impact on the conservation interests of the site. **No significant effects are likely.**
IE000412	Slieve Bloom Mountains SAC	**OUT**	**Conservation Objectives** The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Northern Atlantic wet heaths with *Erica tetralix* [4010] Blanket bogs (* if active bog) [7130] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0] **Potential Impact** The proposed development is located 7.9 km from this SAC. There is no direct or indirect hydrological pathway from this site to the SAC. No potential impact is foreseen. There is no direct or indirect pathway from this site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects are likely.**
Special Protection Areas			
IE004160	Slieve Bloom Mountains SPA	**OUT**	**Conservation Objectives** The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. **Qualifying Interests** Hen Harrier (*Circus cyaneus*) [A082] **Potential Impact** The proposed development is located 5.5 km from this SPA. There is no direct or indirect hydrological pathway from the subject site to this SPA. Given the minimum distance to this SPA (5.5 km), no noise or vibration impacts on the qualifying interests of this SPA are foreseen. No potential impact is foreseen. There is no direct pathway from this site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects are likely.**

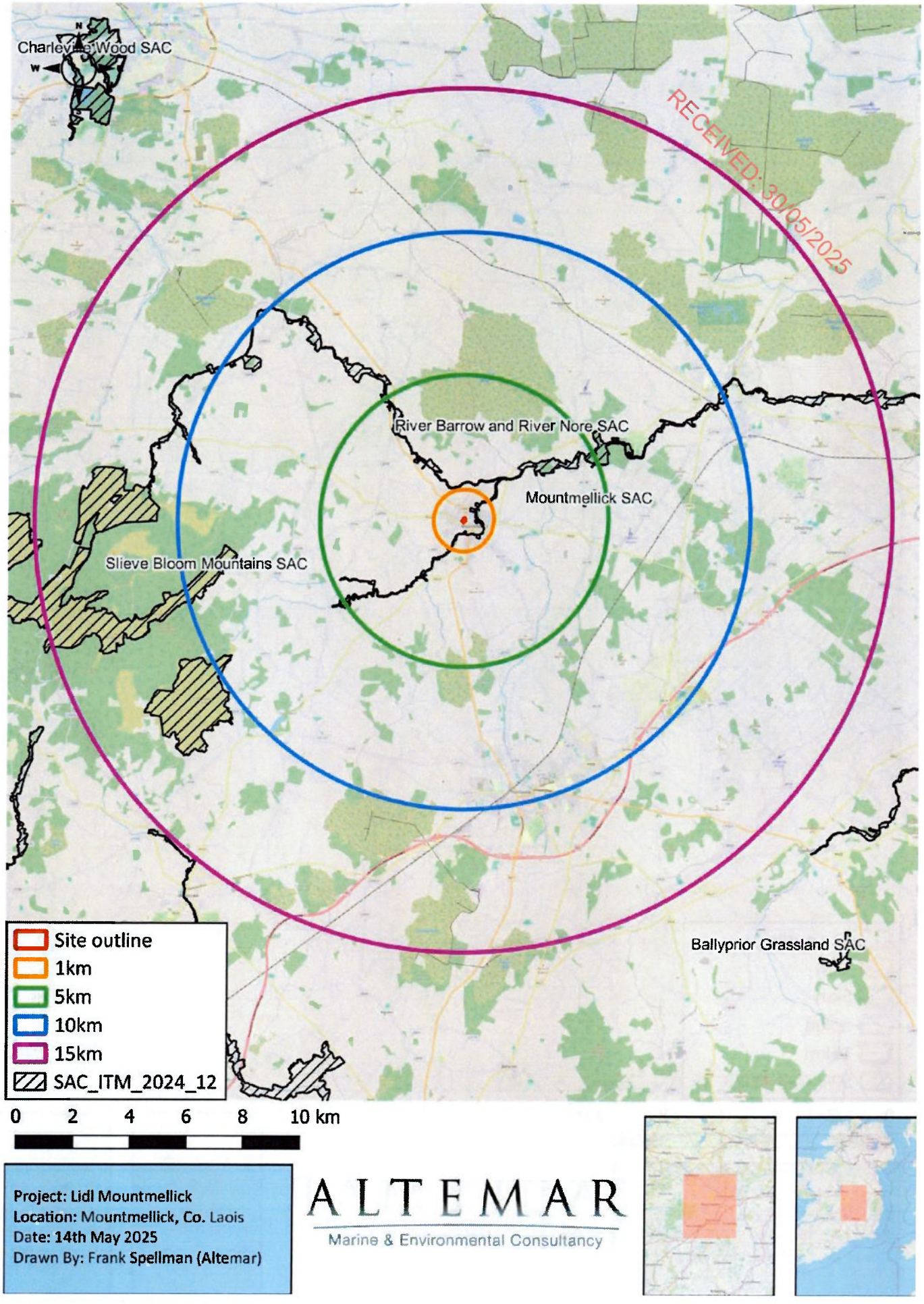

Figure 6. *Special Areas of Conservation (SAC) within 15km of the subject site*

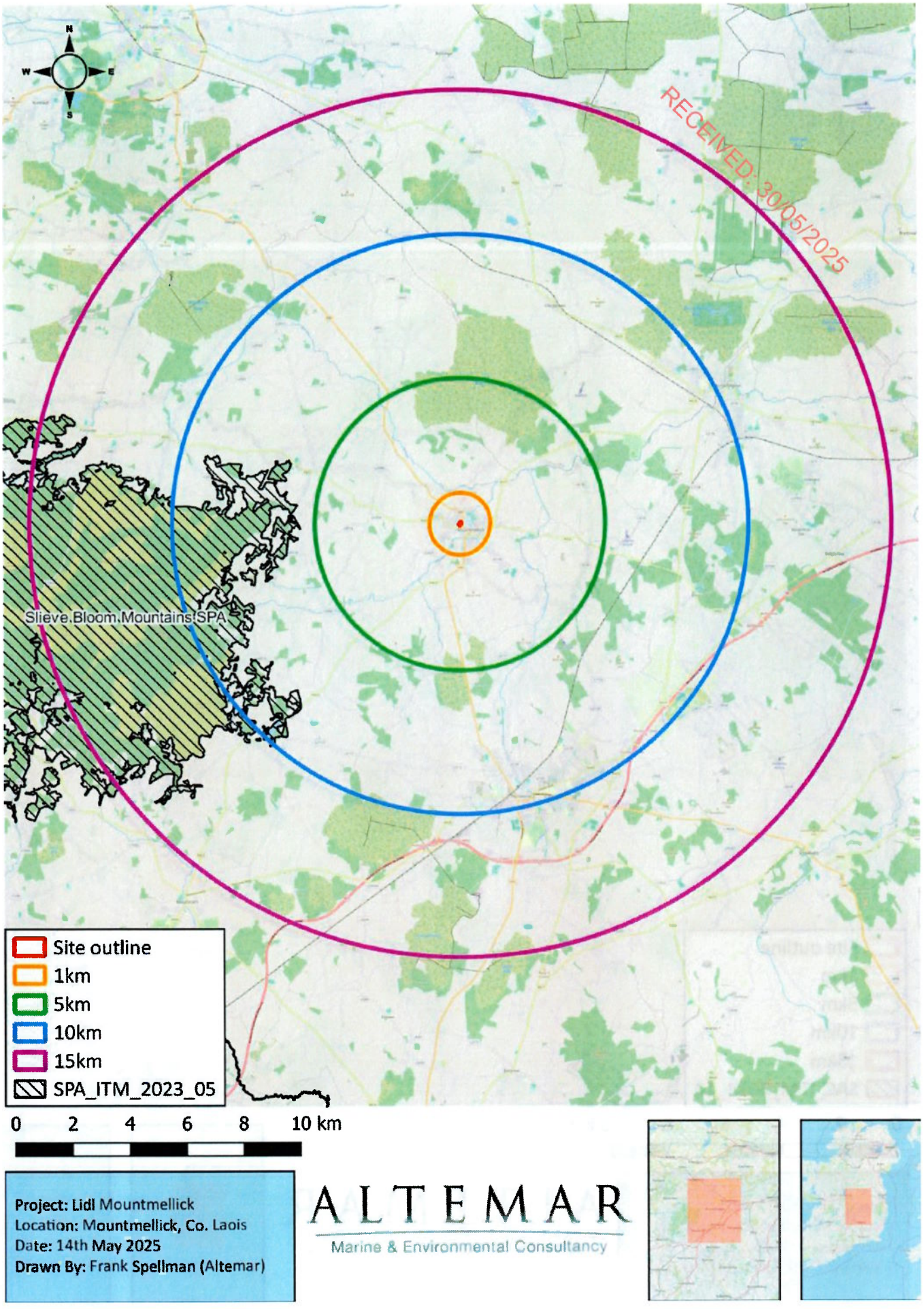

Figure 7. *Special Protection Areas (SPA) within 15km of the subject site*

Figure 8. *Waterbodies proximate to the subject site*

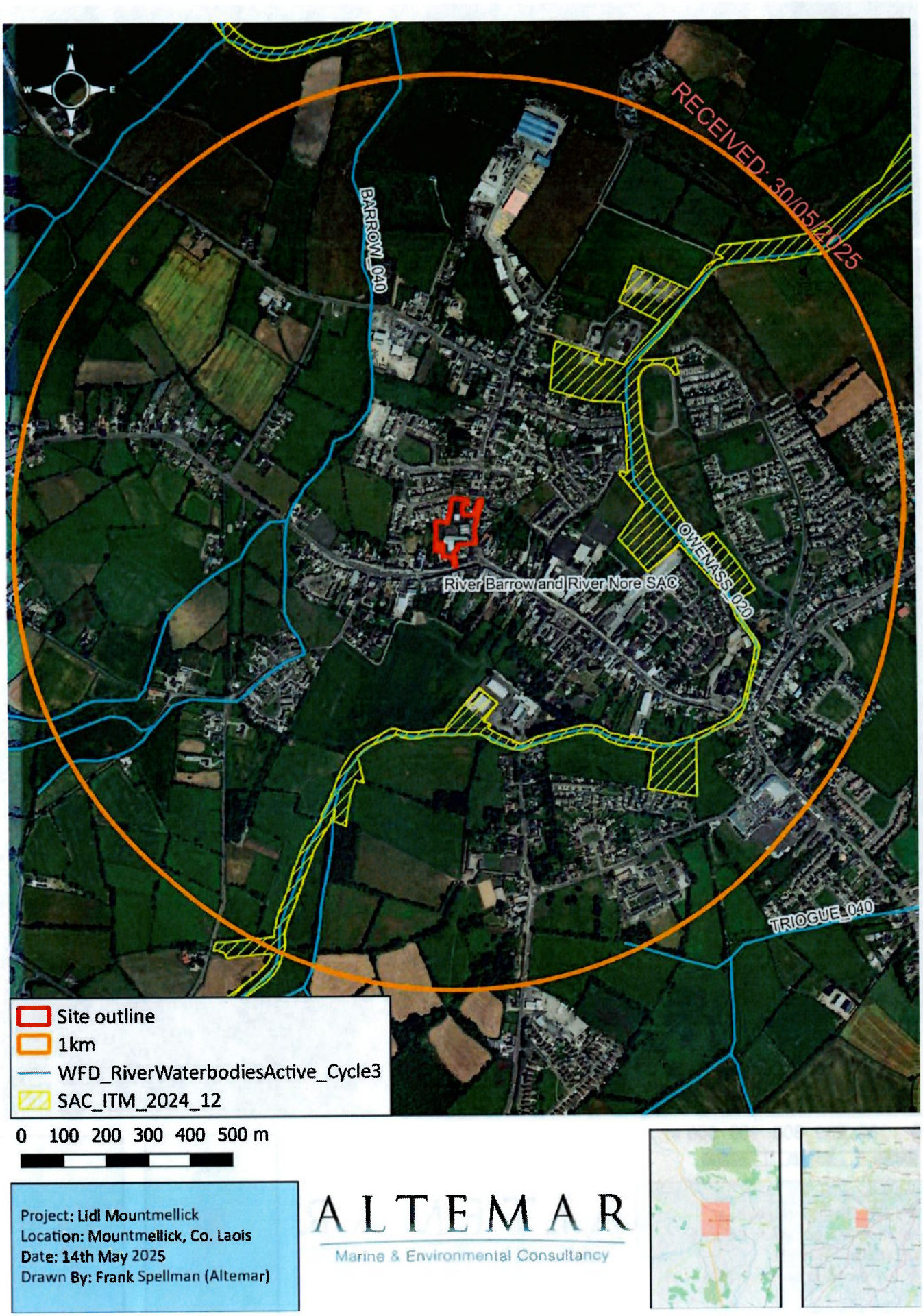

Figure 9. *Waterbodies and SACs in proximity to the subject site*

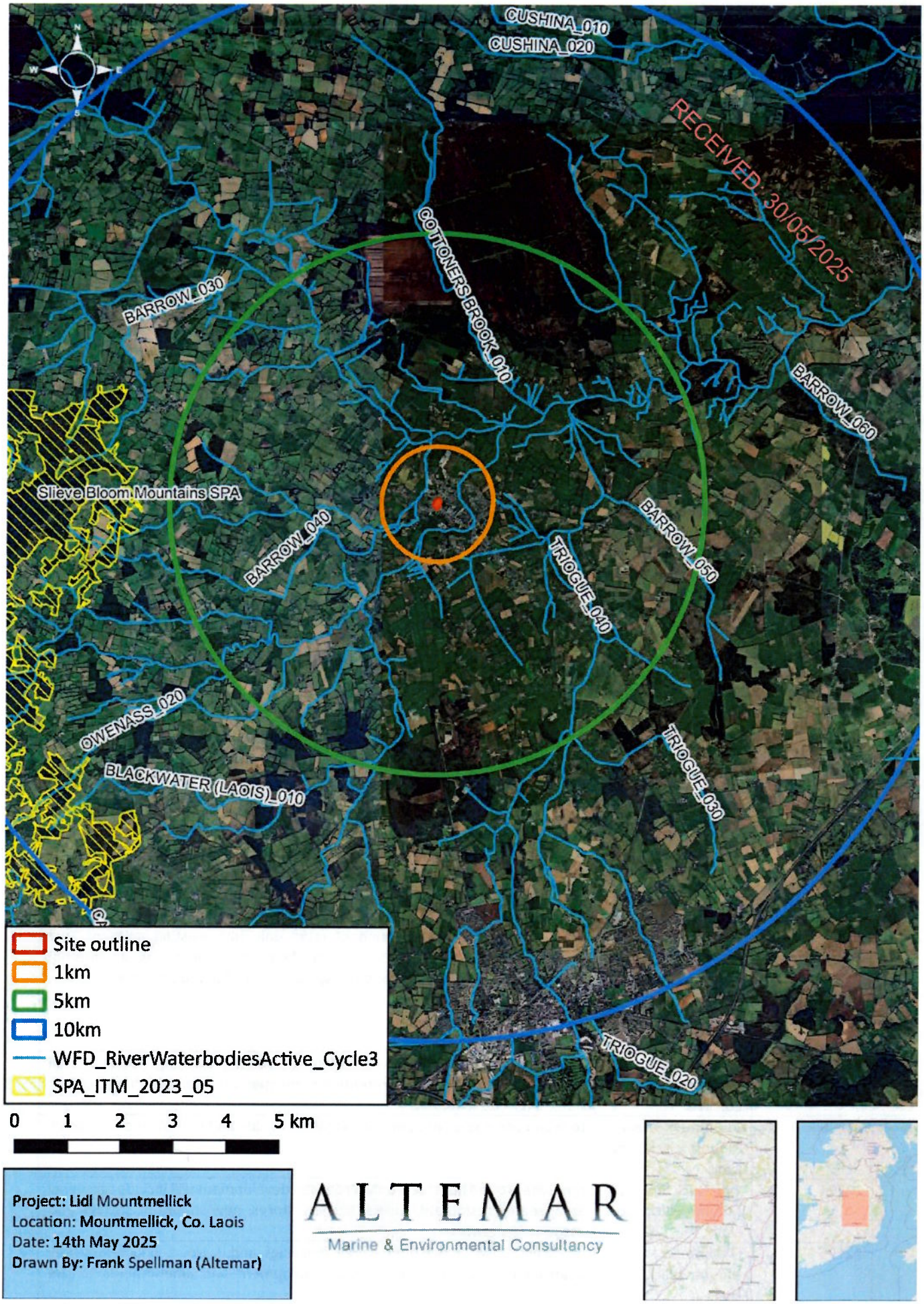

Figure 10. *Waterbodies and SPAs in proximity to the subject site*

4.6 In-Combination Effects

The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Map' portal:

Table 3. In-combination effects considered

Ref. No.	Address	Proposal
248725	Manor Street, Mountmellick, Co. Laois.	Retention of change of use from squash courts on ground floor to gym, change of use as squash club gym to gym, retention of 4 windows and signage
2460508	28 Patrick Street , Mountmellick , Co. Laois	convert and renovate an existing dwelling. works to include subdividing the dwelling into 3 no. apartments, together with all necessary ancillary services and associated site works. the proposed works are within the curtilage of a protected structure rps 695 and rps 030
2460651	11 Patrick Street , Mountmellick , Co. Laois.	carry out development at 11 Patrick Street, Mountmellick, Co. Laois. R32 XA58, which is adjacent to a protected structure (Record of Protected Structures Reference Number RSP023). The development will consist of permission for change of use from public house to restaurant with take-away and re-development of the two existing apartments at first floor and second floor to, 2 no. one-bedroom apartments and 1 no. two bedroom apartment . Permission is also sought for all demolishment works, construction works, bin area, storage areas and all associated site works
2460786	24 Pattison's Estate , Mountmellick , Co Laois	remove a section of an outbuilding to the rear of house, also to remove chimney stack, to replace existing windows & construct a portico to front facade and a single storey extension to side of existing house and all necessary and associated site works
2460496	Chapel Meadow Chapel Street , Mountmellick , Co Laois	retain existing single storey detached building used for as a swimming pool (for personal family use) as constructed, also retention permission for single storey domestic garage and shed as constructed and all associated site works.
2460687	Scoil Phadraig Naofa , Davitt Road , Mountmellick Co. Laois	construct a single storey extension to the Front/ Northeast of the School containing a Home School Liaison Room, 1 no. Classroom, 1 no. Resource Room and Administration accommodation, the construction of a single storey extension to the Side/ Southeast of the School containing 2 new Resource Rooms and an Accessible WC, and the construction of a single storey extension to the rear/ Southwest of the School containing 2 no. Classrooms. The proposed works also include the removal of an existing single storey outbuilding to the Front/ Northeast of the School along with minor alterations to the existing school, together with all associated siteworks, including the re-organisation of the existing car-parking area to the Northeast of the School.
2360049	R32 CK6A Yvonne's Florist/ Turf Accountants(R32 AT27), 1 Emmett Street, Mountmellick, Laois, R32AT27	change the use of existing retail unit(R32 CK6A Yvonne's Florist) to a Turf Accountants and amalgamation of retail unit with existing adjacent Turf Accountants(R32 AT27) to form a single premises including all internal demolitions, alterations, revised signage and all associated siteworks
22213	Garoon , Mountmellick , Co.Laois	A) construct extension and alterations to existing dwelling house and all associated site works and B) retention permission for domestic garage/shed
22326	11 Emmett Street , Mountmellick , Co. Laois	to retain permission of domestic Extension to side and rear of dwelling house
22294	29 Patrick Street , Mountmellick , Co. Laois	renovate ground floor level only. Proposed development will include takeaway area, seated restaurant, toilets, kitchen, stores, new shopfront signage and associated siteworks
22171	O'Moore St , Mountmellick , Co. Laois	construct 2 No. 2 bed two storey dwellings and 1 No. 1 bed two storey apartment as an infill streetscape development and amendments to site

Ref. No.	Address	Proposal
		boundaries of No. 2 O'Moore Street, Mountmellick and all ancillary works and services
2260013	38 O'Moore Street , Mountmellick , Co. Laois.	change the use from surgery and waiting room back to part of dwelling house and associated site works.
22568	Davitt Road , Mountmellick , Co. Laois	A) demolish existing building, B) build 32 two bedroom apartments, in four, two storey blocks, C) bin bays and cycle shelters, D) 61 parking spaces, E) site entrance and all associated site works. The planning application may be inspected, or purchased at a fee not exceeding the reasonable cost of making a copy, at the offices of the planning authority during its public opening hours. Note: a Natura impact statement will be submitted to the planning authority with the application and the natura impact statement will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the office of the relevant planning authority.
216	Ballycullenbeg , off Harbour Street , Mountmellick	develop 54 dwelling units comprising of the following: 1. 48No. dwellings in terraces of 4 dwellings, comprising of 22No. 3 bedroom 2 storey end-terrace units, 14 No. 3 bedroom 2 storey mid-terrace units, 8No. 2 bedroom 2 storey mid-terrace units, 2No, 2 bedroom bungalow end-terrace units & 2No, 2 bedroom bungalow mid-terrace units, and 6No. semi-detached 3 bedroom 2 storey dwellings. 2. Remove part of existing boundary screen wall and create new entrance road, vehicular entrances and footpaths onto Grange Hall. Continue the existing entrance wall facing onto Harbour street to No. 1 Harbour Street and returning alongside No. 1 Harbour Street. 3. Installation of all necessary and associated site works to include foul drains connecting onto Harbour Street and surface water drains with underground attenuation c onnecting to existing waterc ourse , telecommunications, water and service ducts, roadways, footpaths, green spaces, landscaping, public lighting, ESB and communications mini-pillars, car parking , signage, bin storage areas etc.
21147	5 Emmett Street , Mountmellick , Co. Laois	demolish existing ground floor extensions, fuel store and storage shed, there after planning permission is sought for the construction of ground floor extension to the rear of existing dwelling and new storage shed, along with the ancillary site services ands associated site works
20376	5 Davin Park , Mountmellick , Co. Laois	construct an extension to the rear of my existing dwelling to include a bedroom with en suite, hall and utility and to demolish existing sheds at rear with all ancillary site works
20327	New Road , Graigue , Mountmellick	construct a single storey extension to the rear, alter the existing dwelling, construct a new dormer roof to the existing dwelling and all associated site works
2061	12 Patrick Street , Mountmellick , Co. Laois	form a new entrance, construct new boundary wall and entrance gate to the rear of property, which is within the curtilage of a protected structure
19428	Patrick Street , Mountmellick , Co. Laois	construct a 62 bedroom two-storey nursing home, 8 two storey step down apartment units, landscaped gardens, parking area, service yard, refuse areas, esb transformer room, new service connections and all ancillary work
19558	Cullenbeg Park , Ballycullenbeg , Mountmellick	construct 70 no. 2-storey houses and associated site development works. The houses proposed will consist of 2 no. 4-bedroom end-of-terrace houses, 41 no. 3-bedroom terraced houses and 27 no. 2-bedroom terraced houses in 16 no. 2-storey blocks. A Natura Impact Statement has been prepared in respect of this application

It is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development alone or combination with other projects.

From a review of the above, it is concluded that no projects in the vicinity of the proposed development would be seen to have a significant in combination effect on Natura 2000 sites.

5. Appropriate Assessment Screening Conclusions

An initial screening of the proposed works, using the precautionary principle (without the use of any standard construction phase controls or mitigation measures) and the Source/Pathway/Receptor links between the proposed works and European sites with the potential to result in significant effects on the conservation objectives and features of interest of the European sites was carried out in Tables 2 and 3. Based on best scientific knowledge and objective information and assessment, the possibility of significant effects caused by the proposed project was excluded for the following European sites within 15km, in addition to sites beyond 15km with a direct/indirect pathway:

Special Areas of Conservation

- IE002141 Mountmellick SAC
- IE000412 Slieve Bloom Mountains SAC

Special Protection Areas

- IE004160 Slieve Bloom Mountains SPA

Given the nature of the proposed works, the scale of the proposed development, and the indirect hydrological pathway from the subject site to The River Barrow & River Nore SAC via the existing public storm network, it is considered that the potential ZOI of the proposed works extends beyond the site outline to include this European site. Out of an abundance of caution, in the absence of mitigation measures, it is considered that there is the potential for dust, silt, and pollutants to enter this public network, outfall to the Owenass River approximately 305 m from the site, and potentially result in significant effects on The River Barrow & River Nore SAC.

Acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on The River Barrow & River Nore SAC because it cannot be excluded on the basis of best objective scientific information following screening, in the absence of control or mitigation measures that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

An NIS or Stage 2 Appropriate Assessment is not required for the effects of the project on all other listed Natura sites (and those beyond 15km) because it can be excluded based on the best objective scientific information following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the European Site/s.

A Natura Impact Statement is required for the proposed development.

6. Stage 2: Natura Impact Statement

A Natura Impact Statement (NIS) is Stage 2 of the Appropriate Assessment process. In the case of the proposed development, acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on The River Barrow & River Nore SAC (due to the potential for downstream impacts during construction and operation via the surface water drainage network), because it cannot be excluded on the basis of best objective scientific information, in the absence of control or mitigation measures, following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

A Stage 2 Appropriate Assessment or NIS is not required for the effects of the project on all other listed Natura sites within, and sites beyond, 15km because, it can be excluded, on the basis of the best objective scientific information following screening, that the plan or project, individually and/or in combination with other plans or projects, will have not a significant effect on the European Site/s.

The NIS evaluates the potential for direct, indirect effects, alone or in combination with other plans and projects having taken into account the use of mitigation measures.

A further review of the Conservation Objectives and features of interest is necessary to determine if significant effects are likely to impact The River Barrow & River Nore SAC.

6.1 The River Barrow & River Nore SAC (002162)

As outlined in the River Barrow & River Nore SAC Site Synopsis[4] (NPWS, Version date 09.02.2016):

'This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portarlington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. 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 before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also run through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore.

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

[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1170] Reefs [1310] Salicornia Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[3260] Floating River Vegetation
[4030] Dry Heath [6430] *Hydrophilous* Tall Herb Communities
[7220] Petrifying Springs* [91A0] Old Oak Woodlands
[91E0] Alluvial Forests*
[1016] Desmoulin's Whorl Snail (*Vertigo moulinsiana*)

[4] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002162.pdf

[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)
[1092] White-clawed Crayfish (*Austropotamobius pallipes*)
[1095] Sea Lamprey (*Petromyzon marinus*)
[1096] Brook Lamprey (*Lampetra planeri*)
[1099] River Lamprey (*Lampetra fluviatilis*)
[1103] Twaite Shad (*Alosa fallax*)
[1106] Atlantic Salmon (*Salmo salar*)
[1355] Otter (*Lutra lutra*)
[1421] Killarney Fern (*Trichomanes speciosum*)
[1990] Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*)

Good examples of alluvial forest (a priority habitat on Annex I of the E.U. Habitats Directive) are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (Salix triandra), White Willow (S. alba), Rusty Willow (S. cinerea subsp. oleifolia), Crack Willow (S. fragilis) and Osier (S. viminalis), along with Iris (Iris pseudacorus), Hemlock Water-dropwort (Oenanthe crocata), Wild Angelica (Angelica sylvestris), Thin-spiked Wood-sedge (Carex strigosa), Pendulous Sedge (C. pendula), Meadowsweet (Filipendula ulmaria), Common Valerian (Valeriana officinalis) and the Red Data Book species Nettle-leaved Bellflower (Campanula trachelium).

A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the E.U. Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, Palustriella commutata and Eucladium verticillatum, have been recorded.

The best examples of old oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the 16th century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Version date: 9.2.2016 3 of 7 002162_Rev16.Docx Bellflower and the moss Leucodon sciuroides. The rare Myxomycete fungus, Licea minima has been recorded from woodland at Abbeyleix.

Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by oak (Quercus spp.), Holly (Ilex aquifolium), Hazel (Corylus avellana) and Downy Birch (Betula pubescens), with some Beech (Fagus sylvatica) and Ash (Fraxinus excelsior). All the trees are regenerating through a cover of Bramble (Rubus fruticosus agg.), Foxglove (Digitalis purpurea), Great Wood-rush (Luzula sylvatica) and Broad Buckler-fern (Dryopteris dilatata).

On the steeply sloping banks of the River Nore, about 5 km west of New Ross, in Co. Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of relatively undisturbed, relict oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown, a small, mature oak dominated woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (Vaccinium myrtillus), Heather (Calluna vulgaris), Hard Fern (Blechnum spicant), Common Cow-wheat (Melampyrum pratense) and Bracken (Pteridium aquilinum).

Borris Demesne contains a very good example of a semi-natural broadleaved woodland in very good condition. There is quite a high degree of natural regeneration of oak and Ash through the woodland. At the northern end of the estate oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of

deciduous woods situated on steep slopes above the river. The deciduous trees are mostly oak species. The woods have a well-established understorey of Holly, and the herb layer is varied, with Bramble abundant. The whitebeam Sorbus devoniensis has also been recorded here.

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the floodplain of the river is intact. Characteristic species of the habitat include Meadowsweet, Purple Loosestrife (Lythrum salicaria), Marsh Ragwort (Senecio aquaticus), Ground Ivy (Glechoma hederacea) and Hedge Bindweed (Calystegia sepium). Indian Balsam (Impatiens glandulifera), an introduced and invasive species, is abundant in places.

Floating river vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include water-starworts (Callitriche spp.), Canadian Pondweed (Elodea canadensis), Bulbous Rush (Juncus bulbosus), water-milfoils (Myriophyllum spp.), the pondweed Potamogeton x nitens, Broad-leaved Pondweed (P. natans), Fennel Pondweed (P. pectinatus), Perfoliated Pondweed (P. perfoliatus) and crowfoots (Ranunculus spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996).

Dry heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken and Gorse (Ulex europaeus) with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (Galium saxatile), Foxglove, Common Sorrel (Rumex acetosa) and Creeping Bent (Agrostis stolonifera). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (Orobanche rapum-genistae) has been recorded. Where rocky outcrops are shown on the maps Bilberry and Great Wood-rush are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of clover species, including the legally protected Clustered Clover (Trifolium glomeratum) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (Sedum anglicum), Sheep's-bit (Jasione montana) and Wild Madder (Rubia peregrina). These rocks also support good lichen and moss assemblages with Ramalina subfarinacea and Hedwigia ciliata.

Dry heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabrisky, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (Molinia caerulea) with Heather, Tormentil (Potentilla erecta), Carnation Sedge (Carex panicea) and Bell Heather (Erica cinerea).

Salt meadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (Phragmites australis) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (Puccinellia fasciculata) and Meadow Barley (Hordeum secalinum) are found. The very rare and also legally protected Divided Sedge (Carex divisa) is also found. Sea Rush (Juncus maritimus) is also present. Other plants recorded and associated with salt meadows include Sea Aster (Aster tripolium), Thrift (Armeria maritima), Sea Couch (Elymus pycnanthus), Spear-leaved Orache (Atriplex prostrata), Lesser Sea-spurrey (Spergularia marina), Sea Arrowgrass (Triglochin maritima) and Sea Plantain (Plantago maritima).

Glassworts (Salicornia spp.) and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones.

The estuary and the other E.U. Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with

pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include Arenicola marina, Nephtys hombergii, Scoloplos armiger, Lanice conchilega and Cerastoderma edule. An extensive area of honey-comb worm biogenic reef occurs adjacent to Duncannon, Co. Wexford on the eastern shore of the estuary. It is formed by the polychaete worm Sabellaria alveolata. This intertidal Sabellaria alveolata reef is formed as a sheet of interlocking tubes over a considerable area of exposed bedrock. This polychaete species constructs tubes, composed of aggregated sand grains, in tightly packed masses with a distinctive honeycomb-like appearance. These can be up to 25cm proud of the substrate and form hummocks, sheets or more massive formations. A range of species are reported from these reefs including: Enteromorpha sp.; Ulva sp.; Fucus vesiculosus; Fucus serratus; Polysiphonia sp.; Chondrus crispus; Palmaria palmate; Coralinus officialis; Nemertea sp.; Actinia equine; Patella vulgate; Littorina littorea; Littorina obtusata and Mytilus edulis.

The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (Carex spp.), Meadowsweet, willowherbs (Epilobium spp.) and rushes (Juncus spp.). Wet woodland also occurs. T

The dunes which fringe the strand at Duncannon are dominated by Marram (Ammophila arenaria) towards the sea. Other species present include Wild Clary/Sage (Salvia verbenaca), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift, Rock Samphire (Crithmum maritimum) and Buck's-horn Plantain (Plantago coronopus).

Other habitats which occur throughout the site include wet grassland, marsh, reedswamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds.

Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (Trichomanes speciosum), Divided Sedge, Clustered Clover, Basil Thyme (Acinos arvensis), Red Hemp-nettle (Galeopsis angustifolia), Borrer's Saltmarsh-grass, Meadow Barley, Opposite-leaved Pondweed (Groenlandia densa), Meadow Saffron/Autumn Crocus (Colchicum autumnale), Wild Clary/Sage, Nettle-leaved Bellflower, Saw-wort (Serratula tinctoria), Bird Cherry Version date: 9.2.2016 6 of 7 002162_Rev16.Docx (Prunus padus), Blue Fleabane (Erigeron acer), Fly Orchid (Ophrys insectifera), Ivy Broomrape (Orobanche hederae) and Greater Broomrape. Of these, the first nine are protected under the Flora (Protection) Order, 2015. Divided Sedge was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge, Field Garlic (Allium oleraceum) and Summer Snowflake. Six rare lichens, indicators of ancient woodland, are found including Lobaria laetevirens and L. pulmonaria. The rare moss Leucodon sciuroides also occurs.

The site is very important for the presence of a number of E.U. Habitats Directive Annex II animal species including Freshwater Pearl Mussel (both Margaritifera margaritifera and M. m. durrovensis), White-clawed Crayfish, Salmon, Twaite Shad, three lamprey species – Sea Lamprey, Brook Lamprey and River Lamprey, the tiny whorl snail Vertigo moulinsiana and Otter. This is the only site in the world for the hard water form of the Freshwater Pearl Mussel, M. m. durrovensis, and one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat, Badger, Irish Hare and Common Frog. The rare Red Data Book fish species Smelt (Osmerus

eperlanus) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater mussel species, Anodonta anatina and A. cygnea.

Three rare invertebrates have been recorded in alluvial woodland at Murphy's of the River. These are: Neoascia obliqua (Order Diptera: Syrphidae), Tetanocera freyi (Order Diptera: Sciomyzidae) and Dictya umbrarum (Order Diptera: Sciomyzidae). The rare invertebrate, Mitostoma chrysomelas (Order Arachnida), occurs in the old oak woodland at Abbeyleix and only two other sites in the country. Two flies (Order Diptera) Chrysogaster virescens and Hybomitra muhlfeldi also occur at this woodland.

The site is of ornithological importance for a number of E.U. Birds Directive Annex I species, including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bar-tailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois, and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. The old oak woodland at Abbeyleix has a typical bird fauna including Jay, Long-eared Owl and Raven. The reedbed at Woodstown supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.

Land use at the site consists mainly of agricultural activities – mostly intensive in nature and principally grazing and silage production. Slurry is spread over much of the area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the main rivers and their tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath, are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (Prunus laurocerasus) and Rhododendron (Rhododendron ponticum). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein. Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Freshwater Pearl Mussel, which is limited to a 10 km stretch of the Nore, add further interest to this site.'

Figure 11. *River Barrow and River Nore SAC – Old Oak Woodlands, Alluvial Forests & Petrifying Springs (Subject site = Purple Circle)*

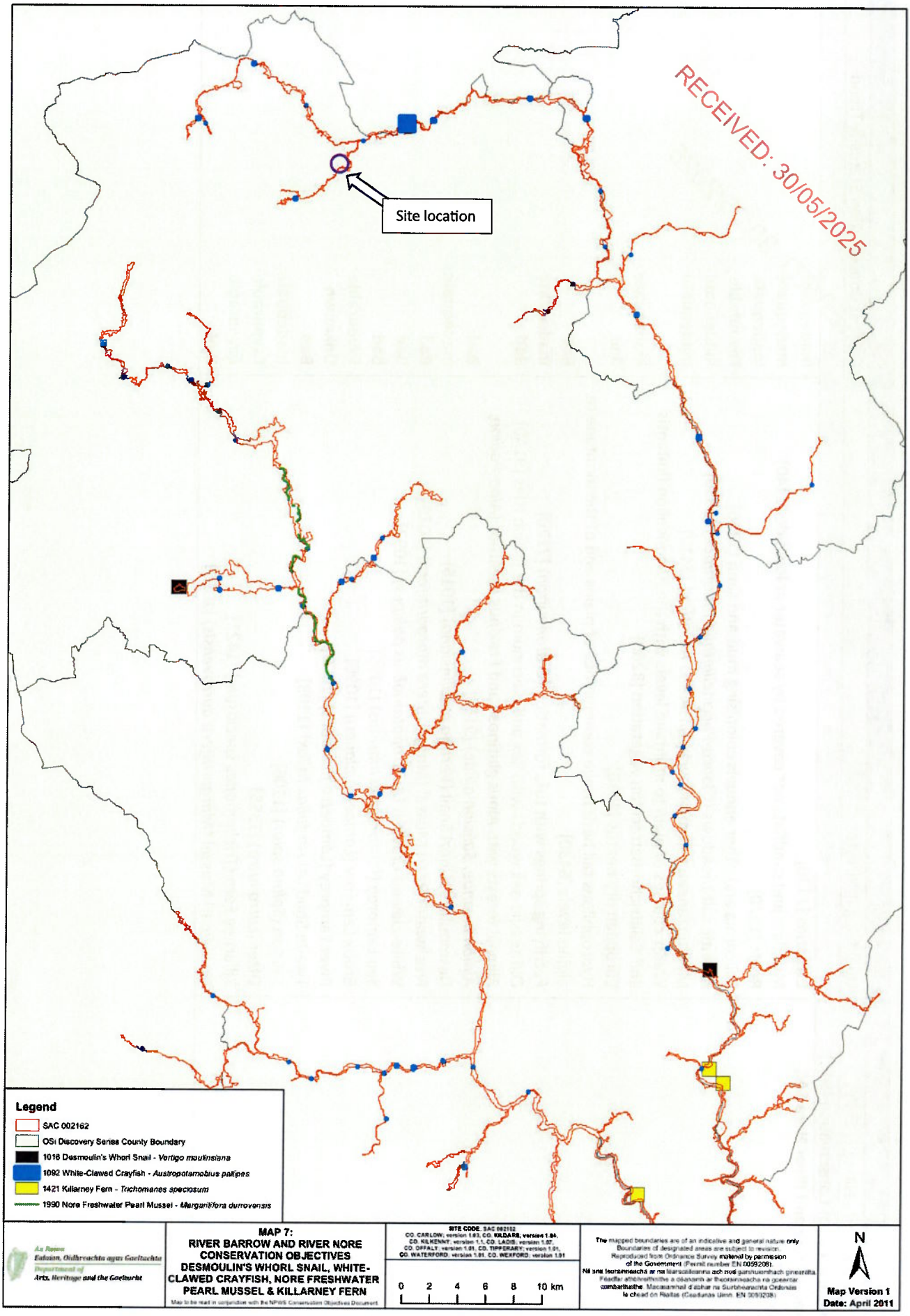

Figure 12. *River Barrow and River Nore SAC – Desmoulinls Whorl Snail, White Clawed Crayfish, Nore Freshwater Pearl Mussel & Killarney Fern (Subject site = Purple Circle)*

Table 4. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant Natura 2000 sites		
Natura 2000 Site Name & Code	Qualifying Interests	Current Conservation Status & Trend
Special Areas of Conservation (SAC)		
River Barrow and River Nore SAC (002162)	Estuaries [1130]	Inadequate
	Mudflats and sandflats not covered by seawater at low tide [1140]	Inadequate
	Reefs [1170]	Inadequate
	Salicornia and other annuals colonising mud and sand [1310]	Favourable
	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Inadequate
	Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Inadequate
	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Inadequate
	European dry heaths [4030]	Bad
	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Bad
	Petrifying springs with tufa formation (*Cratoneurion*) [7220]	Inadequate
	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	Bad
	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	Bad
	Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016]	Inadequate
	Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]	Bad
	White-clawed Crayfish (*Austropotamobius pallipes*) [1092]	Bad
	Sea Lamprey (*Petromyzon marinus*) [1095]	Bad
	Brook Lamprey (*Lampetra planeri*) [1096]	Favourable
	River Lamprey (*Lampetra fluviatilis*) [1099]	**Unknown**
	Twaite Shad (*Alosa fallax fallax*) [1103]	Bad
	Salmon (*Salmo salar*) [1106]	Inadequate
	Otter (*Lutra lutra*) [1355]	Favourable
	Killarney Fern (*Trichomanes speciosum*) [1421]	Favourable
	Nore Pearl Mussel (*Margaritifera durrovensis*) [1990]	Bad

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
River Barrow and River Nore SAC		
Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016] – To maintain the favourable conservation condition		
Distribution: occupied sites	Number	No decline. Two known sites: Borris Bridge, Co. Carlow S711503; Boston Bridge, Kilnaseer S338774, Co. Laois.
Population size: adults	Number per positive sample	At least 5 adult snails in at least 50% of samples
Population density	Percentage positive samples	Adult snails present in at least 60% of samples per site
Area of occupancy	Hectares	Minimum of 1ha of suitable habitat per site
Habitat quality: vegetation	Percentage of samples with suitable vegetation	90% of samples in habitat classes I and II as defined in Moorkens & Killeen (2011)
Habitat quality: soil moisture levels	Percentage of samples with appropriate soil moisture levels	90% of samples in moisture class 3-4 as defined in Moorkens & Killeen (2011)
Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029] – The status of the freshwater pearl mussel (*Margaritifera margaritifera*) as a qualifying Annex II species for the River Barrow and River Nore SAC is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this species. Please note that the Nore freshwater pearl mussel (*Margaritifera durrovensis*) remains a qualifying species for this SAC. This document contains a conservation objective for the latter species.		
White-clawed Crayfish (*Austropotamobius pallipes*) [1092] - To maintain the favourable conservation condition		
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 EPA
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline in heterogeneity or habitat quality
Sea Lamprey (*Petromyzon marinus*) [1095] - To restore the favourable conservation condition		
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary.
Population structure of juveniles	Number of age/size groups	At least three age/size groups present
Juvenile density in fine sediment	Juveniles/m^2	Juvenile density at least 1/m^2
Extent and distribution of spawning habitat	m^2 and occurrence	No decline in extent and distribution of spawning beds.

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive.
Brook Lamprey (*Lampetra planeri*) [1096] - To restore the favourable conservation condition		
Distribution	% of river accessible	Access to all water courses down to first order streams
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river 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 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive.
River Lamprey (*Lampetra fluviatilis*) [1099] - To restore the favourable conservation condition		
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 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive.
Twaite Shad (*Alosa fallax*) [1103] - To restore the favourable conservation condition		
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary
Population structure: age classes	Number of age classes	More than one age class present
Extent and distribution of spawning habitat	m^2 and occurrence	No decline in extent and distribution of spawning habitats
Water quality: oxygen levels	Milligrammes per litre	No lower than 5mg/l
Spawning habitat quality: Filamentous algae; macrophytes; sediment	Occurrence	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plant) growth
Atlantic Salmon (*Salmo salar*) [1106] - To restore the favourable conservation condition		
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

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling
Out-migrating smolt abundance	Number	No significant decline
Number and distribution of redds	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 EPA
Estuaries [1130] - To maintain the favourable conservation condition		
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community extent	Hectares	Maintain the natural extent of the *Sabellaria alveolata* reef, subject to natural process.
Community distribution	Hectares	The following sediment communities should be maintained in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex; Fine sand with *Fabulina fabula* community.
Mudflats and Sandflats not covered by seawater at low tide [1140] - To maintain the favourable conservation condition		
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community distribution	Hectares	The following sediment communities should be maintained in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex
Salicornia and other annuals colonizing mud and sand [1310] - To maintain the favourable conservation condition		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession
Habitat distribution	Occurrence	No decline, subject to natural processes
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain or where necessary restore natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009).

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Vegetation structure: negative indicator species: *Spartina anglica*	Hectares	No significant expansion of *Spartina*. No new sites for this species and an annual spread of less than 1% where it is already known to occur
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] - To restore the favourable conservation condition		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession
Habitat distribution	Occurrence	No decline, subject to natural processes.
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.
Vegetation structure: vegetation height	Centimeters	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur
Otter (*Lutra lutra*) [1355] - To restore the favourable conservation condition		
Distribution	Percentage positive survey sites	No significant decline
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136.0ha along river banks / around ponds
Extent of marine habitat	Hectares	No significant decline.
Extent of freshwater (river) habitat	Kilometres	No significant decline.
Extent of freshwater (lake) habitat	Hectares	No significant decline.
Couching sites and holts	Number	No significant decline
Fish biomass available	Kilograms	No significant decline
Mediterranean salt meadows (*Juncetalia maritimi)* [1410] - To restore the favourable conservation condition		

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat distribution	Occurrence	No decline, subject to natural processes.
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain or where necessary restore natural circulation of sediments and organic matter, without any physical obstructions
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated
Vegetation composition: typical species and sub-communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009)
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur
Killarney Fern (*Trichomanes speciosum*) [1421] - To maintain the favourable conservation condition		
Distribution	Location	No decline. Three locations known, with three colonies of gametophyte and one sporophyte colony
Population size	Number	Maintain at least three colonies of gametophyte, and at least one sporophyte colony of over 35 fronds
Population structure: juvenile fronds	Occurrence	At least one of the locations to have a population structure comprising sporophyte, unfurling fronds, 'juvenile' sporophyte and gametophyte generations
Habitat extent	m^2	No loss of suitable habitat, such as shaded rock crevices, caves, or gullies in or near to, known colonies. No loss of woodland canopy at or near to known locations
Hydrological conditions: visible water	Occurrence	Maintain hydrological conditions at the locations so that all colonies are in dripping or damp seeping habitats, and water is visible at all locations
Hydrological conditions: humidity	Number of dessicated fronds	No increase. Presence of dessicated sporophyte fronds or gametophyte mats indicates conditions are unsuitable
Light levels: shading	Percentage	No changes due to anthropogenic impacts

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Invasive species	Occurrence	Absent or under control
Nore freshwater pearl mussel (*Margaritifera durrovensis*) [1990] – To restore the favourable conservation condition		
Distribution	Kilometres	Maintain at 15.5km.
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	Kilometres	Restore suitable habitat in length of river corresponding to distribution target (15.5km; see map 7) and any additional stretches necessary for salmonid spawning
Water quality: Macroinvertebrate s 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	Metres per second	Restore appropriate hydrological regimes
Host fish	Number	Maintain sufficient juvenile salmonids to host glochidial larvae
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260] - To maintain the favourable conservation condition		
Habitat distribution	Occurrence	No decline, subject to natural processes
Habitat area	Kilometres	Area stable or increasing, subject to natural processes
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes
Hydrological regime: groundwater discharge	Metres per second	The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation
Substratum composition: particle size range	Millimetres	The substratum should be dominated by large particles and free from fine sediments
Water chemistry: minerals	Milligrams per litre	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Water quality: suspended sediment	Milligrams per litre	The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments
Water quality: nutrients	Milligrams per litre	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	Hectares	The area of active floodplain at and upstream of the habitat should be maintained
European dry heaths [4030] – To maintain the favourable conservation condition		
Habitat distribution	Occurrence	No decline from current habitat distribution, subject to natural processes
Habitat area	Hectares	Area stable or increasing, subject to natural processes.
Physical structure: free-draining, acid, low nutrient soil; rock outcrops	Occurrence	No significant change in soil nutrient status, subject to natural processes. No increase or decrease in area of natural rock outcrop
Vegetation structure: sub- shrub indicator species	Percentage cover	Cover of characteristic sub- shrub indicator species at least 25%: gorse (*Ulex europaeus*) and where rocky outcrops occur bilberry (*Vaccinium myrtillus*) and woodrush (*Luzula sylvatica*). Some rock outcrops support English stonecrop (*Sedum anglicum*), sheep's bit (*Jasione montana*) and wild madder (*Rubia peregrina*) as well as important moss and lichen assemblages
Vegetation structure: senescent gorse	Percentage cover	Cover of senescent gorse less than 50%
Vegetation structure: browsing	Percentage cover	Long shoots of bilberry with signs of browsing collectively less than 33%
Vegetation structure: native trees and shrubs	Percentage cover	Cover of scattered native trees and shrub less than 20%
Vegetation composition: positive indicator species	Number	Number of positive indicator species at least 2 e.g. gorse and associated dry heath/ acid grassland flora
Vegetation structure: positive indicator species	Percentage cover	Cover of positive indicator species at least 60%. This should include plant species characterisitic of dry heath in this SAC including gorse, bilberry and associated acid grassland flora
Vegetation composition: bryophyte and non-crustose lichen species	Number	Number of bryophyte or non- crustose lichen species present at least 2
Vegetation composition: bracken (*Pteridium aquilinum*)	Percentage cover	Cover of bracken less than 10% - however see 'Notes'
Vegetation structure: weedy negative indicator species	Percentage cover	Cover of agricultural weed species (negative indicator species) less than 1%

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Vegetation composition: non- native species	Percentage cover	Cover of non-native species less than 1%.
Vegetation composition: rare/scarce heath species	Location, area and number	No decline in distribution or population sizes of rare, threatened, or scarce species, including Greater Broomrape (*Orobanche rapum-genistae*) and the legally protected clustered clover (*Trifolium glomeratum*)
Vegetation structure: disturbed bare ground	Percentage cover	Cover of disturbed bare ground less than 10% (but if peat soil less than 5%)
Vegetation structure: burning	Occurrence	No signs of burning within sensitive areas
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] – To maintain the favourable conservation condition		
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	Centimetres	30-70% of sward is between 40 and 150cm in height
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 (*Impatiens glandulifera*), monkeyflower (*Mimulus guttatus*), Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*)
*Petrifying springs with tufa formation (*Cratoneurion*) [7220] – To maintain the favourable conservation condition		
Habitat area	Square metres	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	No decline.
Hydrological regime: height of water table; water flow	Metres; metres per second	Maintain appropriate hydrological regimes
Water quality	Water chemistry measures	Maintain oligotrophic and calcareous conditions
Vegetation composition: typical species	Occurrence	Maintain typical species
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] - To restore the favourable conservation condition		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 85.08ha for sub-sites surveyed

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Habitat distribution	Occurrence	No decline
Woodland size	Hectares	Area stable of increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least 30m^3/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter
Woodland structure: veteran trees	Number per hectare	No decline
Woodland structure: indicators of local disctinctiveness	Occurrence	No decline
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including sessile oak (*Quercus petraea*) and birch (*Betula pubescens*)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control
*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] - To restore the favourable conservation condition		
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 181.54ha for sites surveyed
Habitat distribution	Occurrence	No decline.
Woodland size	Hectares	Area stable of increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size
Woodland structure: cover and height	Percentage and metres	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types

Table 5. Detailed Conservation Objectives for Natura 2000 sites		
Attribute	**Measure**	**Target**
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings, and pole age-classes occur in adequate proportions to ensure survival of woodland canopy
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation
Woodland structure: dead wood	m^3 per hectare; number per hectare	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)
Woodland structure: veteran trees	Number per hectare	No decline
Woodland structure: indicators of local distinctiveness	Occurrence	No decline
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover not less than 95%
Vegetation composition: typical species	Occurrence	A variety of typical native species present, depending on woodland type, including ash (*Fraxinus excelsior*) alder (*Alnus glutinosa*), willows (*Salix spp*) and locally, oak (*Quercus robur*)
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control

7. Analysis of the Potential Effects

This section has been prepared to detail the potential effects on sensitive receptors within the Zone of Influence (ZOI) and the Natura 2000 sites downstream of the proposed development. This section provides a description of the potential effects that the proposed development may have on downstream European Sites in the absence of mitigation. The proposed development will involve terrestrial works and potential for silt laden run off and contaminants to enter the Owenass River with potential to impact on the River Barrow & River Nore SAC. In addition, this section outlines construction and operational phase measures designed to prevent any significant impacts on downstream European Sites.

7.1 Construction Effects

In the absence of mitigation, the construction of the proposed development would impact on the existing ecology of the site, the surrounding area, and designated River Barrow and River Nore SAC located downstream of the proposed works. These potential construction effects would include effects that may arise during the site clearance, reprofiling and construction works. It should be noted that the proposed development site is proximate to the Owenass River (approx. 360 m) and an existing public storm network adjacent to the site that ultimately outfalls to this SAC. Out of an abundance of caution, there is potential for significant effects on the qualifying interests of the River Barrow and River Nore SAC in the absence of mitigation measures. Construction phase mitigation measures are required on site particularly as construction works can lead to silt laden and contaminated runoff travelling downstream along this public surface water network, including the road drainage network. There is potential for silt laden runoff and contamination to have downstream effects on the River Barrow and River Nore SAC. Potential construction effects are outlined in Table 6.

7.1.1 Designated Natura 2000 Sites

The proposed development is not within a designated conservation site. The site has an indirect hydrological pathway to the River Barrow & River Nore SAC. Qualifying interests of the River Barrow and River Nore SAC include Otter (*Lutra lutra*), White-clawed Crayfish (*Austropotamobius pallipes*), and Freshwater Pearl Mussel (*Margaritifera margaritifera*). However, there is no downstream hydrological connection to areas where Nore Freshwater Pearl Mussel have been recorded (River Nore). The Owenass River is noted as an important spawning tributary of the River Barrow for Atlantic Salmon (*Salmo salar*). The Owenass River is not within the proposed works. There were no features of interest of these conservation sites noted within the works area. However, given the proximity of the River Barrow to the subject site (approx. 400m), it is likely that features of interest would be present downstream of the site. Mitigation Measures to prevent effects on this Natura 2000 site are outlined in Table 7.

7.2 Operational Effects

Once constructed, foul wastewater from the site will connect to the existing sewer on Emmett Street and will flow to Mountmellick Wastewater Treatment Plant for treatment. This wastewater treatment plant is currently operating within capacity[5]. Surface water drainage from the proposed development will be collected in attenuation tanks and an interceptor will be in place. Potential operational effects are outlined in Table 6.

7.2.1 Designated Natura 2000 Sites

The proposed development is not within a designated conservation site. The proposed development site has an indirect hydrological pathway to the River Barrow & River Nore SAC. Qualifying interests of the River Barrow and River Nore SAC include Otter (*Lutra lutra*), White-clawed Crayfish (*Austropotamobius pallipes*), and Freshwater Pearl Mussel (*Margaritifera margaritifera*). However, there is no downstream hydrological connection to areas where Nore Freshwater Pearl Mussel have been recorded (River Nore). The Owenass River is noted as an important spawning tributary of the River Barrow for Atlantic Salmon (*Salmo salar*). The Owenass River is not within the proposed works. There were no features of interest of these conservation sites noted within the works area. However, given the proximity of the River Barrow to the subject site (approx. 400m), it is likely that features of interest would be present downstream of the site. Mitigation Measures to prevent effects on this Natura 2000 site are outlined in Table 7.

[5] www.water.ie/sites/default/files/2025-05/D0152-01_2024_AER.pdf

Table 6. Potential effects on Natura 2000 sites.		
Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites		
European Site	Qualifying Interests	Potential for Adverse Effects
River Barrow and River Nore SAC [002162]	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (*Cratoneurion*) [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016] Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029] White-clawed Crayfish (*Austropotamobius pallipes*) [1092] Sea Lamprey (*Petromyzon marinus*) [1095] Brook Lamprey (*Lampetra planeri*) [1096] River Lamprey (*Lampetra fluviatilis*) [1099] Twaite Shad (*Alosa fallax fallax*) [1103] Salmon (*Salmo salar*) [1106] Otter (*Lutra lutra*) [1355] Killarney Fern (*Trichomanes speciosum*) [1421] Nore Pearl Mussel (*Margaritifera durrovensis*) [1990]	As demonstrated in Figure 12, the subject site is not located proximate to recorded areas of Freshwater Pearl mussel (*Margaritifera margaritifera)*. Areas recorded in Figure 12 are located within the River Nore (Nore freshwater pearl mussel (*Margaritifera durrovensis*)), to which there is no hydrological pathway from subject site. However, It is likely that the European Otter (*Lutra lutra*), Brook Lamprey (*Lampetra planeri)*, River Lamprey *(Lampetra fluviatilis)* & Atlantic salmon (*Salmo salar*) are present within the Owenass River and the downstream River Barrow proximate to the site. White-Clawed Crayfish (*Austropotamobius pallipes)* have been recorded in areas with an indirect hydrological pathway to the subject site (Figure 12). Surface water runoff on site or vehicle movements on the public road during construction may lead to silt or contaminated materials entering the public surface water network and ultimately discharging to the River Barrow and River Nore SAC. Concrete, silt or pollution could enter adjacent public drains during works and cause downstream impacts on the Owenass River and this SAC. The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels and chemicals could lead to pollution on site or in adjacent public drains. The storage of topsoil or works in the vicinity of the adjacent public drains could lead to dust, soil or silt laden runoff entering the Owenass River and downstream River Barrow. During operation, there is potential for localised pollution if SuDs measures are not properly installed. Given the nature of the proposed works, the outlined potential effects would be expected to be localised in nature and restricted to the immediate vicinity of the site. However, out of an abundance of caution, without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt were introduced into the public storm drain and travelled downstream to the Owenass River. There is potential for significant effects on the following qualifying Interests in the absence of mitigation measures. This would include the contamination of the Owenass River and downstream River Barrow which could directly or indirectly impact on the following species:

Table 6. Potential effects on Natura 2000 sites.		
Potential for adverse effects on the qualifying interests and conservation objectives of Natura 2000 sites		
European Site	Qualifying Interests	Potential for Adverse Effects
		Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029] (Precautionary approach) White-clawed Crayfish (*Austropotamobius pallipes*) [1092] (Precautionary approach) Sea Lamprey (*Petromyzon marinus*) [1095] Brook Lamprey (*Lampetra planeri*) [1096] River Lamprey (*Lampetra fluviatilis*) [1099] Twaite Shad (*Alosa fallax fallax*) [1103] Salmon (*Salmo salar*) [1106] Otter (*Lutra lutra*) [1355] Nore Pearl Mussel (*Margaritifera durrovensis*) [1990] The mitigation measures outlined will be implemented to ensure that no significant silt, dust, or pollution enters the adjacent surface water networks or the Owenass River.

Table 7. Mitigation Measures.		
Sensitive Receptors	Potential Impacts	Designed-in Mitigation
River Barrow and River Nore SAC	• Habitat degradation • Dust deposition • Pollution • Silt ingress from site runoff • Downstream effects • Negative effects on aquatic fauna	As outlined in the accompanying Construction Environmental management plan, the following mitigation measures will be in place. The outlined mitigation measures and ecological supervision and monitoring will prevent any potential impacts on the Owenass River and the River Barrow and River Nore SAC. **Construction Phase Mitigation** • *'The Main Contractor will develop Environmental Procedures to control the potential impacts from the construction phase of the development.* • *The Main Contractor will establish an Environmental Training and Awareness Programme and ensure that all personnel receive adequate training prior to the commencement of construction activities.* • *Routine inspections of the construction activities will be carried out by the Environmental Manager daily to ensure all necessary environmental measures relevant to the construction activities are being effectively implemented by all construction staff, ensuring legal and contractual conformity.* *The following mitigation measures are proposed to avoid release of cement leachate from the site:* • *No batching of wet-cement products will occur on site;* • *Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place. Where possible pre-cast elements for culverts and concrete works will be used;* • *No washing out of any plant used in concrete transport or concreting operations will be allowed on-site except into a designated lined skip;* • *Where concrete is delivered on site, only chute cleaning will be permitted, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed.* • *Use weather forecasting to plan dry days for pouring concrete;* • *Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event;* • *The small volume of water that will be generated from washing of the concrete lorry's chute will be directed into a concrete washout area/lined skip. At the end of a concrete pours, any of the remaining liquid contents are tankered off-site. Any solid contents that will have been cleaned down from the chute will have solidified and can be broken up and disposed of along with other construction waste.* *<u>Fuel, Oil and Chemical Storage</u>* • *Bulk fuel storage areas will be adequately protected with the provision of appropriate bunding to provide a minimum storage volume of 110% of total fuel storage capacity with the provision of a spill kit and the use of drip trays. Fuel storage must be sited away from any watercourse or on-site services as far as possible and have a designated area.*

		• *Where sub-contractors are required to refuel vehicles on-site, this will be carried out at a central refuelling location only. The sub-contractor will be required to make the necessary arrangements with the Main Contractor to access and purchase fuel oil from a central supply. All refuelling areas will be on areas of hard standing only at designated agreed locations. Open valves will not be left unattended.* • *All fuel, oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring. Storage tank levels will be checked before delivery to prevent overfilling and to ensure that the product is delivered to the correct tank.* • *The storage of materials in the main compound and work sites will be controlled in such a manner to ensure that materials are not damaged prior to use either through vehicle or people movements or through exposure to the elements.* • *All fuel, oil and chemicals will be stored on an impervious base within a bunded area and secured. The bund shall have a capacity of 110% of the volume of the products stored within it. All tanks and containers will be kept in a secure compound and be protected from vandalism and will be clearly marked with their contents. Stores shall be located at least 10 metres from any watercourse.* • *All mobile plant will be refuelled in a designated area on an impermeable surface and away from drains. In case of any spillages, there will be a spill response kit available at each refuelling point and within each machines working area. Where it is impractical to refuel within a bunded area, a drip tray will be available to catch any spills caused by over fuelling.* *<u>Emission to Surface, Groundwater & Spill Control Measures</u>* *The following steps provide the procedure to be followed in the event of an oil/fuel spill occurring on site:* • *Identify and stop the source of the spill and alert people working in the vicinity;* • *Notify the Environmental Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action;* • *If applicable, eliminate any sources of ignition in the immediate vicinity of the incident;* • *Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill;* • *If possible, cover or bund off any vulnerable areas where appropriate such as drains, watercourses and/or sensitive habitats;* • *If possible, clean up as much as possible using the spill control materials;* • *Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited;* • *The Environmental Manager shall inspect the site as soon as practicable and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring; and*

		• *The Environmental Manager will notify the appropriate stakeholders, such as the local authority, National Parks and Wildlife Service, Department of Communications, Climate Action and Environment and Department of Housing, Planning and Local Government and/or the EPA.* • *The will be no septic tanks during construction or after-use that could result in leaks to ground and the water environment. Welfare facilities for construction workers will include portable toilets or will be connected other existing foul sewer on site. Waste from portable toilets will be disposed of off-site.* • *There will be no concrete batching on site.* • *There will be no planned discharges to the ground during construction which will reduce the potential for impact to land and water quality.* • *Excavations will be left open and exposed for as little time as possible, which will minimize the potential for pathways from surface to groundwater.* • *Hazard materials will be clearly labelled, transports with care by trained competent personnel, store in dedicated bunded containers. Any liquid accumulating in within the bunds or secondary containment systems, will be disposed of at a suitably authorized facility.* • *Method statements will be prepared and implemented for the management, storage, testing and disposal of waste (including excavated material)* • *Any sludge collected from the wheel wash will be tested and disposed of to an appropriate waste disposal facility. No used water or settled solids will be disposed of to land or water without prior consent of the relevant authority.* *<u>Quality & Climate</u>* • *Exhaust emissions from vehicles operating within the working areas, including trucks, excavators, diesel generators or other plant equipment, will be controlled by the Contractor through regular servicing of machinery;* • *During dry periods when dust generation is likely or during windy periods, working areas and vehicles delivering material with dust forming potential will also be sprayed with water, as appropriate;* • *Areas where materials will be handled and stockpiled will be designed to minimise their exposure to wind – all temporary stockpiles shall be kept to the minimum practicable height with gentle slopes;* • *There shall be no long-term stockpiling within the working areas and storage time will be minimised;* • *Stockpiles of material shall be sealed during long periods without use. During long dry spells the surfaces of open stockpiles shall be wetted to minimise spread. Materials that have a high potential for dust generation should be removed from site as soon as possible.* • *Delivery vehicles containing materials likely to be subject to wind whipping shall be covered where possible.* • *An adequate water supply for effective dust/particulate matter suppression shall be provided. Non-potable water sources should be used where appropriate.*

		• *Drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment should be minimised, and fine water sprays used for dust suppression where appropriate. Enclosed chutes and conveyors should be used for long duration activities.* • *Dust generating activities, such as saw cutting, shall be accompanied by appropriate wetting or dust extraction methods to minimise dust spread to the surrounding atmosphere.* • *No burning of waste materials on site shall be permitted.* • *Waiting or inactive vehicles should switch off their engines wherever possible.* • *All jetting and washing activities shall take care not to discharge surface water to the public roads network.* • *Access gates should be positioned a suitable distance from the public road and other receptors. Water assisted sweepers should be used on the local roads to remove any tracked material. Dry sweeping of large areas should always be avoided.* • *Monitoring may be required during dry conditions or when undertaking operations prone to dust generation.* • *Construction Traffic Management Plan to be prepared by the Main Contractor in advance of the commencement of the construction which will be implemented in full. This will minimise congestion and encourage car sharing and the use of public transport, where practicable;* • *Materials will be handled efficiently on site to minimise the waiting time for loading and unloading, thereby reducing potential emissions;* • *Engines will be turned off when machinery is not in use; and* • *The regular maintenance of plant and equipment will be carried out.* • *Vehicles delivering material with potential for dust emissions to an off-site location shall be enclosed or covered at all times to restrict the escape of dust;* • *Any hard surface site roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only.* • *A power washing facility or wheel cleaning facility will be installed near to the site compound for use by vehicles exiting the site when appropriate* • *Road sweepers will be employed to clean the site access route as required.* *The following best practice water management measures will be implemented during the construction phase:* • *Temporary measures will be put in place to ensure only clean water is discharged from site i.e., in advance of excavation activities, temporary interception bunds and drainage ditches will be constructed up slope of the excavation to minimise surface runoff ingress into it. The interception bunds and drainage ditches will be subject to daily inspection to ensure they remain adequate and effective.* • *Silt traps will be employed and maintained in appropriate locations;* • *A filter drains and silt pits will be located at the base of all embankments, settled solids will be removed from the silt pits regularly.*

		• *Temporary stockpiles will be surrounded by silt fencing.* • *Excavation and earthworks will be suspended during and immediately following periods of heavy rainfall to minimise sediment generation and soil damage.* • *Oil, petrol and other fuel containers will be double-skinned and bunded to be able to contain 110% volume to guard against potential accidental spills or leakages entering local watercourses.* • *A spill kit including an oil containment boom and absorbent pads will be on site at all time.* • *A designated bunded refuelling area on an impermeable surface will be provided at a minimum distance of 15m away from any watercourse. No vehicles will be left unattended when refuelling.* • *Dedicated fuel storage areas will be introduced on-site which will be a minimum of 15m from watercourses or drains or, alternatively, fuelling will take place offsite.* • *All vehicles and plant will be regularly maintained, washed and inspected for fuel, oil and hydraulic fluid leaks.* • *Machinery including hand-tools will never be washed in watercourses or drainage ditches or within 15m of watercourses or drainage ditches.* • *Concrete pouring will not take place during heavy rain when run off is likely due to excess water. Shuttering will be designed to accommodate small increases in the volume of material contained within the shuttered area due to rainfall. Pre-cast concrete will be used if possible; otherwise, all cast-in-place concrete will be isolated from flowing water for a minimum of 48 hours to allow pH to reach neutral levels.* • *Wash down and washout of concrete transporting vehicles will not be permitted at the location of construction. Such wash down and washout activities will take place at an appropriate facility off site or at the location where concrete was sourced.* • *Oily water associated with construction activities will pass through an oil separator before discharging into the surface water drainage system which discharges into the existing public stormwater sewer to the north of the site.* *<u>Foul drainage</u>* • *The foul drainage associated with the temporary welfare facilities in the construction compound includes a canteen, toilets, showers and hand wash basins only. Wastewater will be disposed of by removal from site to an appropriately licensed treatment facility.'* Due to the short, indirect hydrological pathway to the River Barrow and River Nore SAC, in order to maintain the integrity of the European Site, the following additional mitigation measures shall be implemented: • An ecologist will be appointed prior to enabling works commencing on site • All works methodologies will have prior approval from the project ecologist. • Local silt traps established throughout site. • Mitigation measures on site include dust control, stockpiling away from drains.

		• Stockpiling of loose materials will be kept to a minimum of 20m from drains. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. • Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system. • Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches, excavations and other locations where it may cause pollution. • Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the drainage, without interception. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality. • During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the surface water network and nearby watercourse/SAC. • On-site inspections to be carried out by project ecologist. • Maintenance of any drainage structures (e.g. de-silting operations) must not result in the release of contaminated water to the surface water network. • No entry of solids to the drainage network during the connection of pipework. • Full compliance with the Water Pollution Acts will be carried out on site. • Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks. • The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained. • The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. • A project ecologist will be appointed and consulted in relation to all onsite drainage during construction works. Consultation with the project ecologist will not involve the formulation of new mitigation measures for the purposes of protecting any European Site, and relate only to the implementation of those mitigation measures already stated in the submission or the formulation of mitigation for other purposes. • Dewatering of excavations may be necessary. Appropriate monitoring of groundwater levels during site works will be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out. Unfiltered surface water discharges or runoff are not permitted from the site into the public surface water network during the works.

		• Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains and drainage ditches. • Ecological supervision will be required during excavation and enabling works stages. Silt interception measures will need to be in place to ensure that the drainage networks are not impacted during works and in particular during the site clearance. **Operational Phase Mitigation** • A project ecologist will be appointed to oversee completion of all landscape and drainage works. • The project ecologist will inspect all SuDs measures to ensure they have been adequately implemented, namely bioretention rain gardens, attenuation tank, porous asphalt and swale. • Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts.

8. Adverse Effects on the conservation objectives of European sites likely to occur from the project (post mitigation)

A robust series of mitigation measures developed by a multidisciplinary project team will be carried out. These measures will ensure that surface water discharging to the adjacent public storm network is clean and uncontaminated, that dust levels are controlled on site, and that operational measures are in place to prevent pollution. Early implementation of ecological supervision on site at initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation.

With the successful implementation of the outlined mitigation measures, no significant effects are foreseen from the construction or operation of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works and would not adversely affect the integrity of the designated site. The construction and operational mitigation designed for the proposed development satisfactorily addresses the potential impacts on the designated conservation site through the application of the construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt, dust and pollution entering the Owenass River will satisfactorily address the potential effects on downstream biodiversity and European sites. No significant adverse impacts on the conservation objectives of European sites are likely following the implementation of the mitigation measures outlined above.

9. In-Combination Effects

The following is a list of planning applications as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Map' portal:

Table 7. In-combination effects considered

Ref. No.	Address	Proposal
248725	Manor Street, Mountmellick, Co. Laois.	Retention of change of use from squash courts on ground floor to gym, change of use as squash club gym to gym, retention of 4 windows and signage.
2460508	28 Patrick Street , Mountmellick , Co. Laois	convert and renovate an existing dwelling. works to include subdividing the dwelling into 3 no. apartments, together with all necessary ancillary services and associated site works. the proposed works are within the curtilage of a protected structure rps 695 and rps 030
2460651	11 Patrick Street , Mountmellick , Co. Laois.	carry out development at 11 Patrick Street, Mountmellick, Co. Laois. R32 XA58, which is adjacent to a protected structure (Record of Protected Structures Reference Number RSP023). The development will consist of permission for change of use from public house to restaurant with take-away and re-development of the two existing apartments at first floor and second floor to, 2 no. one-bedroom apartments and 1 no. two bedroom apartment . Permission is also sought for all demolishment works, construction works, bin area, storage areas and all associated site works
2460786	24 Pattison's Estate , Mountmellick , Co Laois	remove a section of an outbuilding to the rear of house, also to remove chimney stack, to replace existing windows & construct a portico to front facade and a single storey extension to side of existing house and all necessary and associated site works
2460496	Chapel Meadow Chapel Street , Mountmellick , Co Laois	retain existing single storey detached building used for as a swimming pool (for personal family use) as constructed, also retention permission for single storey domestic garage and shed as constructed and all associated site works.
2460687	Scoil Phadraig Naofa , Davitt Road , Mountmellick Co. Laois	construct a single storey extension to the Front/ Northeast of the School containing a Home School Liaison Room, 1 no. Classroom, 1 no. Resource Room and Administration accommodation, the construction of a single storey extension to the Side/ Southeast of the School containing 2 new Resource Rooms and an Accessible WC, and the construction of a single storey extension to the rear/ Southwest of the School containing 2 no. Classrooms. The proposed works also include the removal of an existing single storey outbuilding to the Front/ Northeast of the School along with minor alterations

Ref. No.	Address	Proposal
		to the existing school, together with all associated siteworks, including the re-organisation of the existing car-parking area to the Northeast of the School.
2360049	R32 CK6A Yvonne's Florist/ Turf Accountants(R32 AT27), 1 Emmett Street, Mountmellick, Laois, R32AT27	change the use of existing retail unit(R32 CK6A Yvonne's Florist) to a Turf Accountants and amalgamation of retail unit with existing adjacent Turf Accountants(R32 AT27) to form a single premises including all internal demolitions, alterations, revised signage and all associated siteworks
22213	Garoon , Mountmellick , Co.Laois	A) construct extension and alterations to existing dwelling house and all associated site works and B) retention permission for domestic garage/shed
22326	11 Emmett Street , Mountmellick , Co. Laois	to retain permission of domestic Extension to side and rear of dwelling house
22294	29 Patrick Street , Mountmellick , Co. Laois	renovate ground floor level only. Proposed development will include takeaway area, seated restaurant, toilets, kitchen, stores, new shopfront signage and associated siteworks
22171	O'Moore St , Mountmellick , Co. Laois	construct 2 No. 2 bed two storey dwellings and 1 No. 1 bed two storey apartment as an infill streetscape development and amendments to site boundaries of No. 2 O'Moore Street, Mountmellick and all ancillary works and services
2260013	38 O'Moore Street , Mountmellick , Co. Laois.	change the use from surgery and waiting room back to part of dwelling house and associated site works.
22568	Davitt Road , Mountmellick , Co. Laois	A) demolish existing building, B) build 32 two bedroom apartments, in four, two storey blocks, C) bin bays and cycle shelters, D) 61 parking spaces, E) site entrance and all associated site works. The planning application may be inspected, or purchased at a fee not exceeding the reasonable cost of making a copy, at the offices of the planning authority during its public opening hours. Note: a Natura impact statement will be submitted to the planning authority with the application and the natura impact statement will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the office of the relevant planning authority.
216	Ballycullenbeg , off Harbour Street , Mountmellick	develop 54 dwelling units comprising of the following: 1. 48No. dwellings in terraces of 4 dwellings, comprising of 22No. 3 bedroom 2 storey end-terrace units, 14 No. 3 bedroom 2 storey mid-terrace units, 8No. 2 bedroom 2 storey mid-terrace units, 2No, 2 bedroom bungalow end-terrace units & 2No, 2 bedroom bungalow mid-terrace units, and 6No. semi-detached 3 bedroom 2 storey dwellings. 2. Remove part of existing boundary screen wall and create new entrance road, vehicular entrances and footpaths onto Grange Hall. Continue the existing entrance wall facing onto Harbour street to No. 1 Harbour Street and returning alongside No. 1 Harbour Street. 3. Installation of all necessary and associated site works to include foul drains connecting onto Harbour Street and surface water drains with underground attenuation c onnecting to existing waterc ourse , telecommunications, water and service ducts, roadways, footpaths, green spaces, landscaping, public lighting, ESB and communications mini-pillars, car parking , signage, bin storage areas etc.
21147	5 Emmett Street , Mountmellick , Co. Laois	demolish existing ground floor extensions, fuel store and storage shed, there after planning permission is sought for the construction of ground floor extension to the rear of existing dwelling and new storage shed, along with the ancillary site services ands associated site works
20376	5 Davin Park , Mountmellick , Co. Laois	construct an extension to the rear of my existing dwelling to include a bedroom with en suite, hall and utility and to demolish existing sheds at rear with all ancillary site works
20327	New Road , Graigue , Mountmellick	construct a single storey extension to the rear, alter the existing dwelling, construct a new dormer roof to the existing dwelling and all associated site works

Ref. No.	Address	Proposal
2061	12 Patrick Street , Mountmellick , Co. Laois	form a new entrance, construct new boundary wall and entrance gate to the rear of property, which is within the curtilage of a protected structure
19428	Patrick Street , Mountmellick , Co. Laois	construct a 62 bedroom two-storey nursing home, 8 two storey step down apartment units, landscaped gardens, parking area, service yard, refuse areas, esb transformer room, new service connections and all ancillary work
19558	Cullenbeg Park , Ballycullenbeg , Mountmellick	construct 70 no. 2-storey houses and associated site development works. The houses proposed will consist of 2 no. 4-bedroom end-of-terrace houses, 41 no. 3-bedroom terraced houses and 27 no. 2-bedroom terraced houses in 16 no. 2-storey blocks. A Natura Impact Statement has been prepared in respect of this application

It is considered that in combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on Natura 2000 sites will be seen as a result of the proposed development alone or combination with other projects. **From a review of the above, it is concluded that no projects in the vicinity of the proposed development would be seen to have a significant in combination effect on Natura 2000 sites.**

10. Conclusion

In a strict application of the precautionary principle, it has been concluded that mitigation measures were required to prevent impacts on the River Barrow & River Nore SAC. Impacts are likely from the proposed works in the absence of mitigation measures, primarily as a result of the indirect hydrological connection to the site via the adjacent public surface water network along Emmett Street which ultimately outfalls to the Owenass River approx. 360 m to the east of the site, which forms part of the River Barrow & River Nore SAC. As a result, there is potential for downstream effects from the project during site clearance, enabling, construction, landscaping, and drainage works. For this reason, a NIS was carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European Site. All other European sites were screened out at initial screening.

Mitigation measures will be in place to ensure there are no significant adverse effects on the Owenass River and subsequently the conservation site. A project ecologist will be appointed to oversee works in relation to the enabling works and the implementation of mitigation measures, as outlined, on site. The implementation of mitigation measures outlined, which will be followed, will be sufficient to prevent adverse effects on the integrity of European sites.

Following the implementation of the mitigation measures outlined, the construction and operation of this development would not be deemed to have a significant adverse impact on the integrity of the River Barrow and River Nore SAC. No significant impacts are likely on European sites, alone in combination with other plans and projects based on the implementation of standard construction phase mitigation measures.

These reports present an Appropriate Assessment Screening and NIS for the proposed development. The NIS outlines the information required for the competent authority to screen for appropriate assessment and to determine whether or not the proposed development, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

On the basis of the content of this report, the competent authority is enabled to conduct an Appropriate Assessment and consider whether, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

No significant effects are likely on European sites, their features of interest or conservation objectives. The proposed project will not will adversely affect the integrity of European sites.

11. References

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2. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government 2009; www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf
3. Managing NATURA 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC; European Commission 2000; ec.europa.eu/environment/nature/Natura2000/management/docs/art6/provision_of_art6_en.pdf
4. Assessment of Plans and Projects Significantly Affecting EUROPEAN Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; ec.europa.eu/environment/nature/Natura2000management/docs/art6/Natura_2000_assess_en.pdf
5. Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EC; https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XC1028(02)&from=EN
6. Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; ec.europa.eu/environment/nature/Natura2000/management/docs/art6/guidance_art6_4_en.pdf
7. Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging; ec.europa.eu/environment/nature/Natura2000/management/docs/guidance_doc.pdf
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9. NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
10. NPWS (2021) Conservation Objectives: Mountmellick SAC 002141. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
11. NPWS (2016) Conservation Objectives: Slieve Bloom Mountains SAC 000412. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
12. NPWS (2022) Conservation Objectives: Slieve Bloom Mountains SPA 004160. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
13. NPWS (2024) Site Synopsis: River Barrow and River Nore SAC 002162. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.