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APPROPRIATE ASSESSMENT
SCREENING
REPORT

**CARLOW COUNTY COUNCIL DEPOT,
POWERSTOWN,
Co. CARLOW**

2023

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1.0 INTRODUCTION

Panther Ecology Ltd was commissioned by Carlow County Council to prepare an Appropriate Assessment Screening Report for a proposed development for permission to construct; an equipment storage building, truck storage building, wire mesh boundary fence, concrete yards, salt silo, new surface water drainage system including a fuel/oil interceptor and a new foul water drainage system at Carlow County Council's existing 0.282 ha depot, located in Powerstown, Co. Carlow. The nearest Natura 2000 site is the River Barrow and River Nore SAC (Site Code: 002162) which part of the west side of the development is located within.

The screening programme shall be undertaken in accordance with the guidance outlined in "Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities" (DoEHLG, 2010) and "Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites" (EC, Nov 2001). Assessment of plans and projects significantly affecting Natura 2000 sites (November 2001) and Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive (2018). The principal aim of this study is to assess whether significant effects to European sites (the Natura 2000 network) are likely to occur as a result of this project in accordance with Article 6(3) of the Habitats Directive and the Planning and Development (Amendment) Act, 2001, as amended. This report has been prepared with regards to the European Communities (Natural Habitats) 1997 (S.I. No. 94 of 1997), and the later amendment regulations (S.I. No. 233 of 1998; S.I. No. 237 of 2005; S.I. No. 477 of 2011).

A study was undertaken by Ms Paula Farrell of Panther Ecology Ltd who has a BSc in Wildlife Biology from Munster Technological University (formerly IT Tralee) and has experience in elasmobranch, amphibian, bird, invertebrate and floral surveys. This survey was supervised by Martin O'Looney who has a BSc Degree in Environmental Science and Technology from Atlantic Technological University Sligo (formerly IT Sligo) and over 9 years experience in environmental consultancy and environmental impact assessment. This comprised a review of the proposed development, a site visit on 27th June 2023 to examine the ecological context of the development site, a desk study of the information on European sites within the potential zone of influence of the site and an analysis of the information in the context of the guidance to determine if a Natura Impact Statement is required.

2.0 LEGISLATIVE CONTEXT

The EU Habitats Directive (92/43/EEC) on the conservation of natural habitats and of wild fauna and flora, as amended by council directive 97/62/EC, 2006/105/EC, and Regulation EC1882/2003 of September 2003, as transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/11), provides the framework for legal protection for habitats and species of European importance. The Natura 2000 network provides an ecological infrastructure for the protection of sites that are of particular importance for rare, endangered or vulnerable habitats and species within the EU. The Natura 2000 network in Ireland is made up of European Sites which include:

- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)

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Article 6(3) of the Habitats Directive establishes the requirement for appropriate assessment when planning new developments that might affect a Natura 2000 site. Article 6(3) of the Habitats Directive states;

“Any plan or project not directly connected with, or necessary to the management of the site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site, and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

3.0 SCREENING FOR APPROPRIATE ASSESSMENT METHODOLOGY

Screening is the first stage in the Appropriate Assessment process and is carried out to determine whether a Stage 2 Appropriate Assessment and a Natura Impact Statement (NIS) is required. Screening addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3);

1. Whether a plan or project is directly connected to or necessary for the management of the European (Natura 2000) site; and
2. Whether a plan or project, alone or in combination with other plans or projects, is likely to have significant effects on a European (Natura 2000) site, in view of its conservation objectives.

Screening should be undertaken without the inclusion of mitigation measures. If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 AA and an NIS.

The findings and conclusions of the screening process should be documented, with the necessary supporting evidence and objective criteria. This is of particular importance in the cases where the Appropriate Assessment process ends at the screening stage because the conclusion is that no significant effects are likely.

Screening for Appropriate Assessment involves:

- Description of the project and area characteristics (existing environment);
- Identification and description of Natura 2000 sites that could potentially be affected, and compilation of information on their qualifying interests and conservation objectives;
- Assessment of likely effects – direct, indirect and cumulative, undertaken on the basis of availability of objective information as necessary;
- Screening statement with conclusions.

3.1 METHODOLOGY GUIDELINES

This Appropriate Assessment has been carried with reference to the following guidelines:

- Appropriate Assessment Screening for Development Management OPR Practice Note PN01 March 2021
- *Appropriate Assessment of Plans and Projects in Ireland. Guidelines for Planning Authorities.* DoEHLG, 2010.
- Circular NPWS 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities
- *Managing Natura 2000 sites – The Provisions of Article 6 of The Habitats Directive 92/43/EEC.* European Commission, 2000.
- Circular L8/08 Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments 2 September 2008
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Commission, 2002.
- Commission Notice “Managing Natura 2000 sites The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission, 21.11.2018
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

3.2 DESKTOP RESEARCH

Desktop research was carried out to gather information on the ecology of the site and surrounding areas. The locations of the Natura 2000 sites within the zone of influence of the development site at Carlow County Council Depot, Powerstown, Co. Carlow, were identified from National Parks and Wildlife Service (NPWS) online map viewer. Other Natura sites within the potential zone of influence were also reviewed and considered for the potential for the project to have a negative effect.

Water quality data from the EPA was reviewed for the assessment of biological and environmental data collected on waterbodies in Ireland as per the Water Framework Directive (WFD) Monitoring Programme of River Ecology Monitoring Results (2021).

Information on the characteristics of the Natura 2000 sites within the potential zone of influence was reviewed from the conservation objectives documents, site synopses and Standard Natura 2000 data forms available on the NPWS website.

3.3 SITE SURVEY

A site characterisation assessment was undertaken on the 27th June 2023 to examine the ecological context of the development site, by systematically walking the site and boundaries and determining the habitats present. The habitat survey was undertaken in accordance with the standard methodology outlined in Fossitt’s “*A Guide to Habitats in Ireland*”, a hierarchical

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classification scheme based upon the characteristics of vegetation present. The Fossitt system also indicates when there are potential links with Annex I habitats of the E.U. Habitats Directive (92/43/EEC). Cognisance was also taken of the Heritage Council guidelines, “*Best Practice Guidance for Habitat Survey and Mapping*”, (Smith *et al.*, 2011).

Bird species and signs of fauna activity and dwellings were also noted. Particular attention was given to the possible presence of habitats and/or species, which are legally protected under Irish and European legislation and to assessing any potential ecological connectivity with Natura 2000 sites or supplementary or stepping-stone habitats of relevance to Natura 2000 sites.

4.0 DESCRIPTION OF THE DEVELOPMENT

4.1 DEVELOPMENT SITE

The proposed development consists of permission to construct; an equipment storage building, truck storage building, wire mesh boundary fence, concrete yards, salt silo, new surface water drainage system including a fuel/oil interceptor and a new foul water drainage system at Carlow County Council’s existing 0.282ha depot, located in Powerstown, Co. Carlow [ITM Coordinates 670464.31, 668893.93], as shown in the location map included in Figure 4.1. The closest Natura 2000 site is the River Barrow and River Nore SAC (Site Code: 002162). A small area of the west of the site is located within the SAC boundary as shown in Figure 4.2 below.

The site is accessed via an existing entrance along the R448 Regional Road. The total area of the proposed development site is 314.8m². Water will be supplied to the proposed development via mains. Foul water will be directed to the an existing Waste Water Treatment Plant in the adjacent landfill owned by Carlow County Council. Stormwater from hard surfaces will be attenuated onsite and a new oil interceptor would be installed before being released the Powerstown watercourse via an existing outfall pipe. It will also include an ACO drain with ductile iron cover. No landscaping will be undertaken as part of this development. The proposed development will retain the boundary hedgerows and treeline, however, this will be trimmed to 2.5m high. New 1.5 - 2m high earth mounds with topsoil and grass finish are proposed along the southern boundary and northern boundary also. An existing PVC coated mesh fence surrounds the southern section of the proposed development with the addition of a new 2.5m high PVC coated mesh wire fence which will encompass the northern proposed development area. New concrete yards to the north and south of the development will be laid on flat approximately 15m from the nearest watercourse and shuttering will be used as a standard practice.

During excavation works, soils would be temporarily stored onsite. Any excess soils would be used for landscaping or exported offsite via a licenced contractor. The proposed development will require the removal of and importation of materials for the foundations measuring 20m³. Any topsoil imported will be screened from a certified supplier. There is no hazardous material within the site boundary.

The estimated construction timeframe for the proposed development is approximately 8-12 weeks. Construction works would be confined to the development footprint and would not necessitate any works within a watercourse or drainage ditch.

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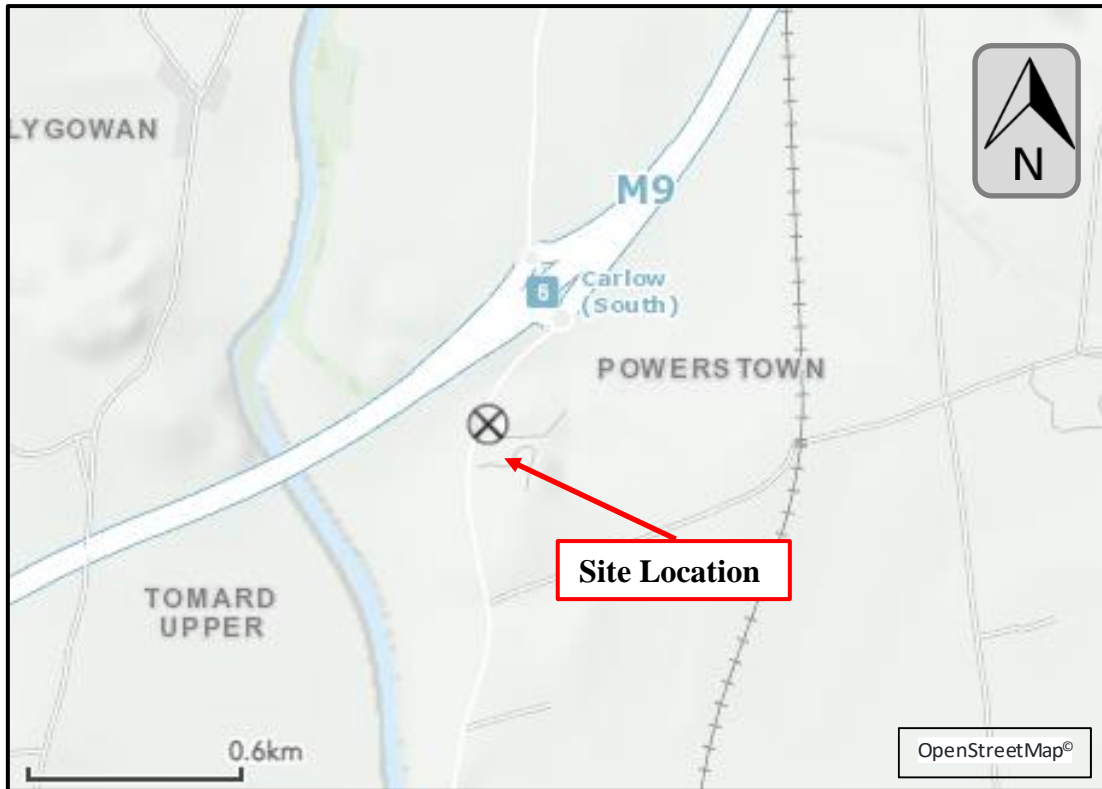


Figure 4.1: Location of Site at Carlow County Council Depot, Powerstown, Co. Carlow

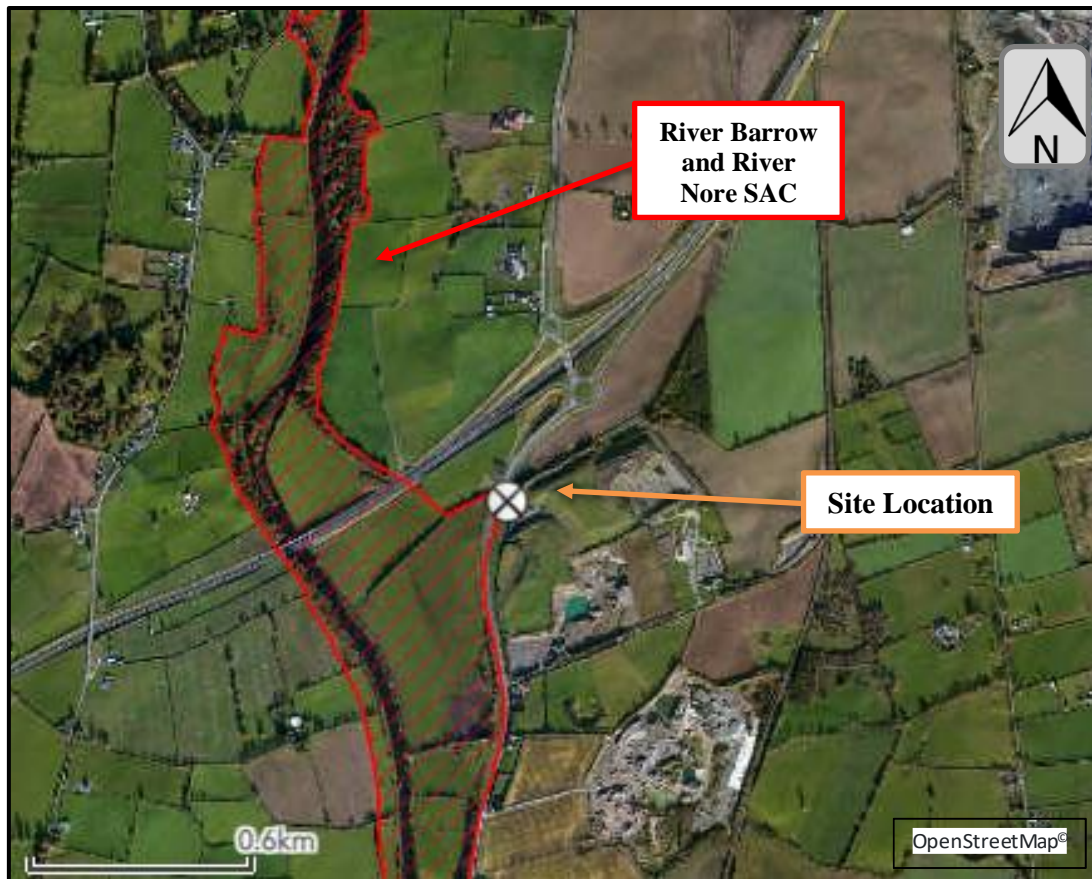


Figure 4.2: Location of Development and Natura 2000 Sites

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The following project elements of the development site have been examined for relevance to possible effects on the Natura 2000 sites;

- Earthworks & Excavation
- Sediment & Hydrocarbon Runnoff
- Stormwater & Waste Water
- Disturbance to Protected Species
- Impact on Protected Habitats
- Dust and Noise
- Invasive Species

4.2 EXISTING ENVIRONMENT

The development site is currently comprised of buildings and artificial surfaces with areas of grassy verges and recolonising bare ground. A metal fence surrounds the proposed development except for the north-west area adjacent to the R448 Regional Road. The surrounding area is predominantly rural with commercial enterprises within the vicinity. The Powerstown tributary is the closest watercourse to the site approximately 15m outside the northern boundary of the proposed development.

According to the Preliminary Flood Risk Assessment (PFRA) Mapping tool by the OPW, the development site is not located in an area of fluvial flooding, indicative of 10% AEP (10-yr) event, 1% AEP (100-yr) event or 0.1% AEP (1000-yr) event. However, it should be noted that this map is based on broad-scale simple analysis and may not be accurate for a specific location. There is no history of flooding at the development site. An area of low fluvial flood is very close to the northern boundary of the proposed development; however, the watercourse is culverted under the regional road to the north and flooding is unlikely given that the river is at a much lower elevation than the proposed development.

A site characterisation assessment was undertaken on the 27th June 2023 to examine the ecological context of the development site, by systematically walking the site and boundaries and determining the habitats present. During the site assessment the following habitats were observed.

Buildings and artificial surfaces (BL3) is the dominant habitat located mainly to the south and throughout; consisting of hardcore surfaces, walled boundaries, buildings and gates. Plant species include Bramble (*Rubus fruticosus*) and Moss (Bryophyta). Recolonising bare ground (ED3) dominates the northern area of the proposed development. The plant species composition comprised of Horsetail (*Equisetum* spp.), Bent Grass (*Agrostis* spp.), Soft Rush (*Juncus effusus*), Creeping Cinquefoil (*Potentilla reptans*), Pyramidal Orchid (*Anacamptis pyramidalis*), Yorkshire Fog (*Holcus lanatus*), Cocksfoot Grass (*Dactylis glomerata*), Vetch (*Vicia* spp.), Moss (Bryophyta), White Clover (*Trifolium repens*), Black Medick (*Medicago lupulina*), Perforate St John's-Wort (*Hypericum perforatum*), Mullein (*Verbascum Thapsus*), Selfheal (*Prunella vulgaris*), Hawkbit (*Leontodon* spp.), Fescues (*Festuca* spp.), Bindweed (*Convolvulus* spp.), Yellow Flag Iris (*Iris pseudacorus*). Around the perimeter but within the red line boundary is dry meadows and grassy verges habitat (GS2). It comprised of Clover (*Trifolium repens*), Rosebay Willowherb (*Chamaenerion angustifolium*), Herb Robert (*Geranium robertianum*), Oatgrass (*Arrhenatherum* spp.), Bent Grass (*Agrostis* spp.), Dandelion (*Taraxacum* spp.), Crane's-bill (*Geranium* spp.), Perforate St John's-Wort (*Hypericum perforatum*), Vetch (*Vicia* spp.), Hogweed (*Heracleum sphondylium*), Creeping Cinquefoil (*Potentilla reptans*), Cocksfoot grass (*Dactylis glomerata*), Black Medick (*Potentilla reptans*), Bramble (*Rubus fruticosus*), Creeping Buttercup (*Ranunculus repens*),

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Ragwort (*Jacobaea vulgaris*) and Pyramidal Orchid (*Anacamptis pyramidalis*). Along the eastern boundary is a treeline/hedgerow habitat (WL2/WL1) consisting of Lime (*Tilia* spp.), Cypress (*Cupressus*), Holly (*Ilex* spp.), Whitebeam (*Sorbus aria*), Beech (*Betula* spp.), Bramble (*Rubus fruticosus*), Hogweed (*Heracleum sphondylium*), Crab Apple (*Malus sylvestris*), Rowan (*Sorbus* spp.), Ash (*Fraxinus* spp.), Field Rose (*Rosa arvensis*), Hawthorn (*Crataegus monogyna*), Sycamore (*Acer pseudoplatanus*), Hazel (*Corylus* spp.), Willow (*Salix* spp.) and Nettle (*Urtica dioica*). A small area of scrub is found to the north comprised of Bramble (*Rubus fruticosus*), Willow (*Salix* spp.) and Buddleia (*Buddleja* spp.).

Habitats of note outside the red line boundary included the depositing/lowland river to the north. This river is culverted under the R488 regional road and flows in a westerly direction. During the day of assessment, the river had a regular flow and was approximately 2-4m in width with a muddy substrate. Plants within and on the banks of the river included Watercress, Duckweed (*Lemnoideae* spp.), Reed Canary Grass (*Phalaris arundinacea*) and Bramble (*Rubus fruticosus*). This watercourse was not accessible.

There were no protected flora or Third Schedule invasive species found within the site boundary. See Table 4.1 for summary for habitats located at development site. See Appendix C for Photo Log of the main habitats observed during the site assessment.

Table 4.1: Summary of Habitats Identified at and Adjacent the Development Site

HABITAT CLASSIFICATION HIERARCHY		
LEVEL 1	LEVEL 2	LEVEL 3
B – Cultivated and built land	BL – Built land	BL3 – Buildings and artificial surfaces
E – Exposed rock and disturbed ground	ED – Disturbed ground	ED3 – Recolonising bare ground
F – Freshwater	FW – Watercourses	FW2 – Depositing / lowland rivers
G – Grassland and marsh	GS – Semi-natural grassland	GS2 – Dry meadows and grassy verges
W – Woodland and scrub	WL – Linear woodland/scrub	WL1/WL2 – Hedgerows/treelines
	WS – Scrub-transitional woodland	WS1 – Scrub

Bird species noted during the site walkover included Wren (*Troglodytes troglodytes*), Swallow (*Hirundo rustica*), Woodpigeon (*Columba palumbus*), House Sparrow (*Passer domesticus*), Magpie (*Pica pica*), Skylark (*Alauda arvensis*), Swallow (*Hirundo rustica*), Goldfinch (*Carduelis carduelis*), Dunnock (*Prunella modularis*). No species is red listed under the BoCCI classification. Swallow, Skylark and House Sparrow are amber listed. None of the bird species recorded are listed under Annex I of the E.U. Birds Directive. An animal burrow was observed within the dry meadows and grassy verges habitat; however, there were cobwebs over the entrance indicating it had not been inhabited recently. There was also no evidence of scat/droppings or footprints. There was no evidence of other fauna noted during the survey.

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However, fauna, typical of that found throughout the rest of Ireland, which would be expected to be found in the area include Bat species, Badger (*Meles meles*), Fox (*Vulpes vulpes*), Otter (*Lutra lutra*), Wood Mouse (*Apodemus sylvaticus*), Rabbit (*Oryctolagus cuniculus*), Pine Marten (*Martes martes*), Stoat (*Mustela erminea hibernica*), American Mink (*Mustela vison*), Deer, Irish Hare (*Lepus timidus hibernicus*), Hedgehog (*Erinus europaeus*), Red Squirrel (*Sciurus vulgaris*), Grey Squirrel (*Sciurus carolinensis*) and Brown Rat (*Rattus norvegicus*).

In addition to the site walkover, flora and fauna records were reviewed on the National Biodiversity Data Centre (NBDC) website for the proposed development site and vicinity. No protected plant species under the Flora (Protection) Order, 2022 (S.I. No. 235 of 2022) were recorded within the 10km square (Tetrad – S76) in which the proposed development site is located. Endangered or threatened flora within this tetrad are: Blue Fleabane (*Erigeron acer*). Six invasive plant species listed in the Third Schedule of the European Communities Birds and Natural Habitats Regulations 2011 (S.I. No. 477 of 2011) were recorded within the 10km square (Tetrad – S76): Water Fern (*Azolla filiculoides*), Canadian Waterweed (*Elodea canadensis*), Giant Hogweed (*Heracleum mantegazzianum*), Indian Balsam (*Impatiens glandulifera*), Japanese Knotweed (*Fallopia japonica*), Rhododendron ponticum and Three-cornered Garlic (*Allium triquetrum*). Protected fauna species of note recorded within the NBDC 10km square ((Tetrad – S76) include the protected species, Common Frog (*Rana temporaria*), Freshwater White-clawed Crayfish (*Austropotamobius pallipes*), Brown Long-eared Bat (*Plecotus auritus*), Daubenton's Bat (*Myotis daubentonii*), Badger (*Meles meles*), Pygmy Shrew (*Sorex minutus*), European Otter (*Lutra lutra*), Lesser Noctule (*Nyctalus leisleri*), Nathusius's Pipistrelle (*Pipistrellus nathusii*), Natterer's Bat (*Myotis nattereri*), Pipistrelle (*Pipistrellus pipistrellus sensu lato*), Whiskered Bat (*Myotis mystacinus*) and European Hedgehog (*Erinaceus europaeus*). High impact invasive species listed in the Third Schedule of the European Communities Birds and Natural Habitats Regulations 2011 (S.I. No. 477 of 2011) include American Mink (*Mustela vison*), Brown Rat (*Rattus norvegicus*), Grey Squirrel (*Sciurus carolinensis*), Fallow Deer (*Dama dama*), Canada Goose (*Branta canadensis*). Bird species of note include Barn Owl (*Tyto alba*), Swallow (*Hirundo rustica*), Black-headed Gull (*Larus ridibundus*), Common Coot (*Fulica atra*), Kestrel (*Falco tinnunculus*), Kingfisher (*Alcedo atthis*), Linnet (*Carduelis cannabina*), Pheasant (*Phasianus colchicus*), Common Sandpiper (*Actitis hypoleucos*), Snipe (*Gallinago gallinago*), Starling (*Sturnus vulgaris*), Wood Pigeon (*Columba palumbus*), Curlew (*Numenius arquata*), Eurasian Teal (*Anas crecca*), Great Cormorant (*Phalacrocorax carbo*), Greylag Goose (*Anser anser*), Herring Gull (*Larus argentatus*), House Martin (*Delichon urbicum*), House Sparrow (*Passer domesticus*), Lesser Black-backed Gull (*Larus fuscus*), Little Egret (*Egretta garzetta*), Little Grebe (*Tachybaptus ruficollis*), Mallard (*Anas platyrhynchos*), Mute Swan (*Cygnus olor*), Northern Lapwing (*Vanellus vanellus*), Peregrine Falcon (*Falco peregrinus*), Rock Pigeon (*Columba livia*), Sand Martin (*Riparia riparia*), Sky Lark (*Alauda arvensis*), Spotted Flycatcher (*Muscicapa striata*), Pigeon (*Columba oenas*) and the Yellowhammer (*Emberiza citrinella*).

4.3 WATER QUALITY

The development is located within the Barrow Catchment (Catchment ID: 14), Sub Catchment Barrow_100. The nearest watercourse to the development site is the Powerstown (EPA Code: 14P33 – Order 3) which is at its closest approximately 15m north of the site boundary. This river flows in a westerly direction past the site for approximately 545m where it joins the River Barrow (EPA Code: 14B01 – Order 5) confluence. Other watercourses in the vicinity of the site are the Garryhundon (EPA Code: 14G29 – Order 3) located approximately 1km south-east

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of the proposed development. It merges with the Ballynaboley (Stream) (EPA Code: 14B08) which is located approximately 1.2km south of the proposed development. The Ballynaboley (stream) joins the River Barrow confluence approximately 1.5km (hydrologically) downstream of the proposed development. The Conservation Objectives document for the River Barrow and River Nore Special Area of Conservation shows that water quality objectives have been set for White-clawed Crayfish (*Austropotamobius pallipes*) and Atlantic Salmon (*Salmo salar*), with a Q3-4 (moderate status) and Q4 (good status) values set as objectives in freshwater. Water quality objectives have also been set for Twaite Shad (*Alosa fallax*) with a target of oxygen levels no lower than 5mg/l.

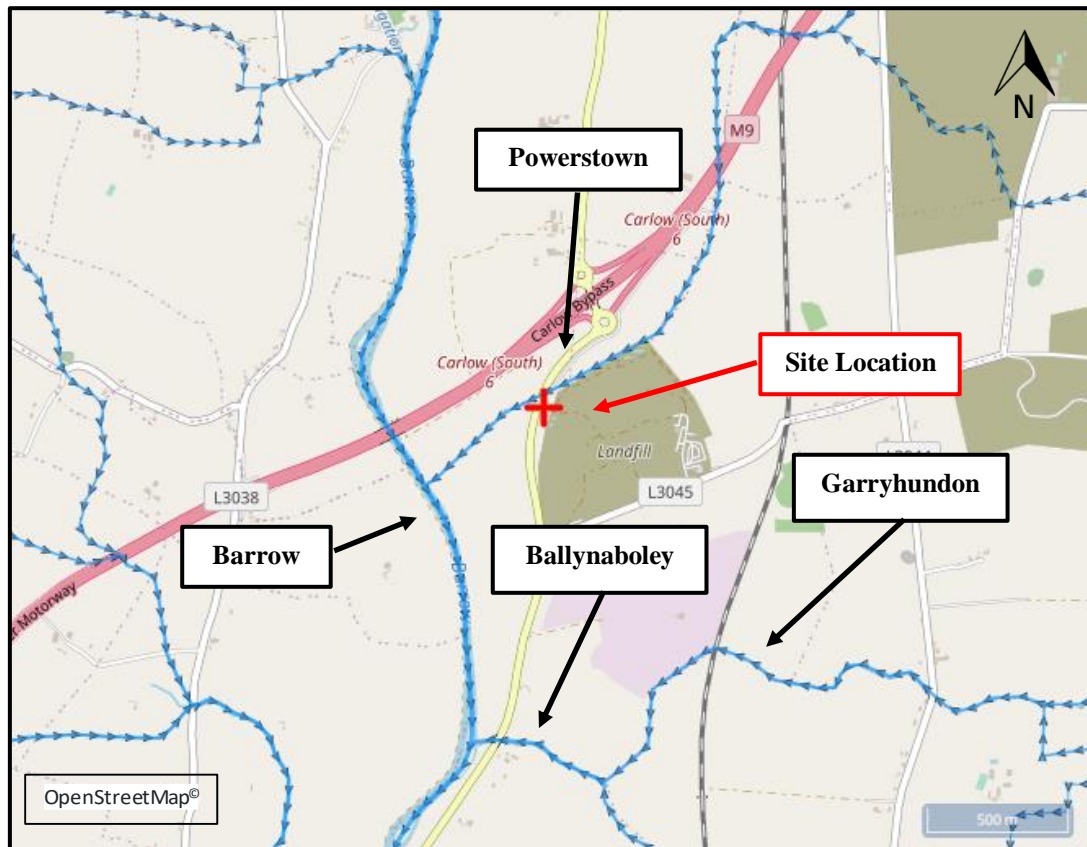


Figure 4.3: Mapped watercourses surrounding the development site

There are no monitoring stations along the Powerstown watercourse. The Environmental Protection Agency (EPA) however, do undertake surface water monitoring along the River Barrow. The results for the nearest monitoring stations (as per Table 4.2) with available monitoring results for the period 2003 – 2020 are summarised in Figure 4.4 below for indicative purposes. As can be seen in Figure 4.4 below, the River Barrow is mainly achieving a water quality status of between Q3.5 (Moderate) and Q4 (Good) in number of years with water quality maintaining a Moderate status atleast. EPA comments on the most recent monitoring results for the River Barrow are as follows.

“Both of the stations assessed in 2021, one upstream of Portarlinton storm water overflow and one downstream of the Portarlinton WWTP primary discharge, were in Poor ecological condition, which is lower than any rating recorded in the Barrow since 2009. The dissolved oxygen levels recorded in evening sampling at both of these sites was very high, indicating excessive primary production.”

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Table 4.2: Active Monitoring Stations of the River Barrow

STATION NO.	STATION LOCATION	EASTING	NORTHING	APPROX. LOCATION RELATIVE TO SITE
RS14B012600	Milford Br	269975	170430	2.6km Upstream
RS14B012680	Cardinal Moran Br	269489.39	166360.77	3km Downstream
RS14B012900	Royal Oak Br	268957	161462	9.9km Downstream

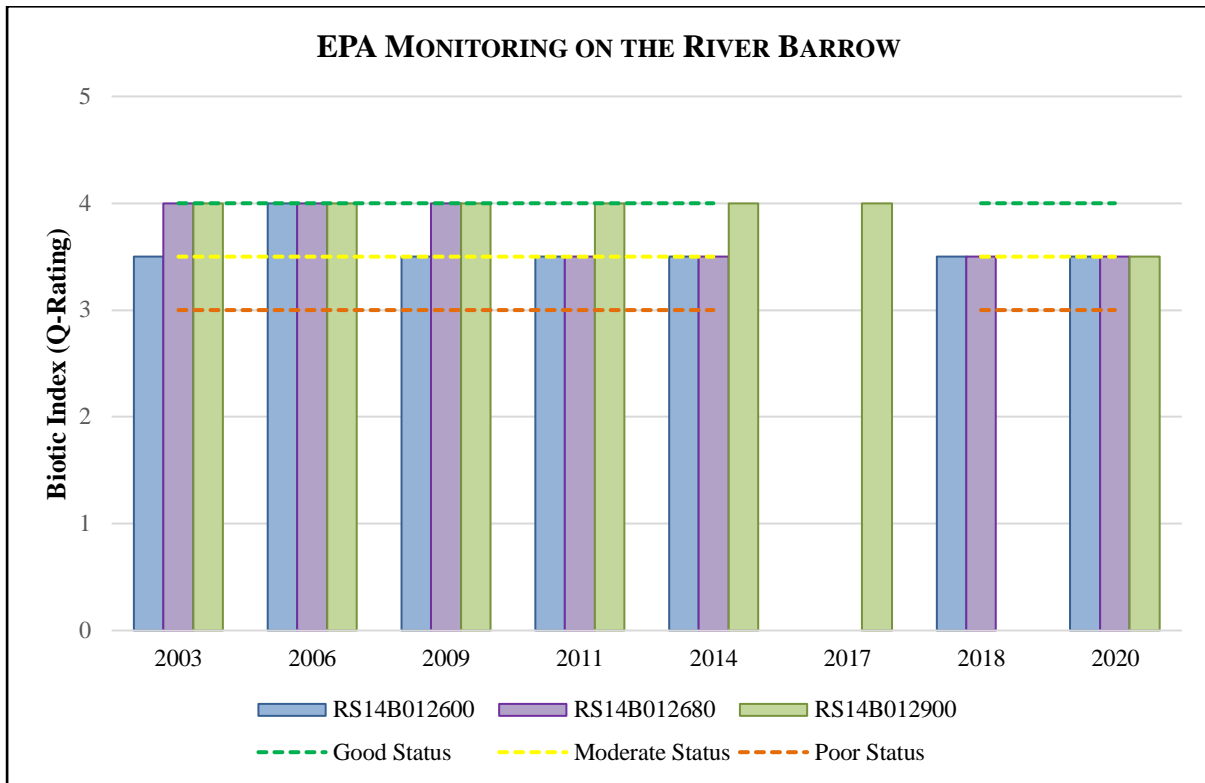


Figure 4.4: EPA Ecological Monitoring of the River Barrow from 2003-2020

5.0 EUROPEAN SITES (NATURA 2000 SITES) WITHIN ZONE OF INFLUENCE

In assessing the zone of influence of this project upon European sites, the following factors must be considered:

- Potential impacts arising from the project,
- The location and nature of European sites,
- Pathways between the development and European sites.

The project impact sources, environmental pathways and protected site characteristics were screened to identify European sites potentially within the zone of influence of the project.

No Special Protection Area (SPA) sites occur within the potential zone of influence of the development site. Two Special Area of Conservation (SAC) sites occur within the potential zone of influence of the development site and are shown in the following table:

Table 5.1: Special Areas of Conservation and Special Protection Area potentially within the potential zone of influence

SITE NAME	DESIGNATION	SITE CODE	DISTANCE
River Barrow and River Nore	SAC	002162	Adjacent W
Slaney River Valley	SAC	000781	14.3kn E

Maps detailing European sites within 2km and 15km of the development site are included as Appendix C below. For this assessment, the site considered to be within the potential zone of influence of the development site is the River Barrow and River Nore SAC (Site Code: 002162) due to the close proximity and hydrological connection via the Powerstown watercourse.

The proposed development is located approximately 14.3km from the Slaney Valley SAC (Site Code: 000781). There is no direct hydrological connection between this protected site and the proposed development. The Slaney Valley SAC is also located within a separate catchment (Slaney and Wexford Harbour – Catchment ID:12). Therefore, due to lack of a source receptor pathway and large distance, this SAC has been screened out.

The proposed development is not hydrologically connected to any other Natura 2000 site within the potential zone of influence. Therefore, it is not anticipated that the proposed development would have any significant impact on any other protected Natura 2000 site.

5.1 RIVER BARROW AND RIVER NORE SAC (SITE CODE: 002162)

This SAC is composed of the freshwater stretches of the Barrow and Nore catchments, as far upstream as the Slieve Bloom Mountains, and the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger 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. The site is a SAC selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive:

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TABLE 5.1.1: ANNEX I HABITATS	
CODE	DESCRIPTION
1130	Estuaries
1140	Tidal Mudflats and Sandflats
1170	Reefs
1310	<i>Salicornia</i> Mud
1330	Atlantic Salt Meadows (<i>Glauco-Puccinellietalia maritimae</i>)
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)
3260	Floating River Vegetation
4030	Dry Heath
6430	Hydrophilous Tall Herb Communities
7220	Petrifying Springs*
91A0	Old Oak Woodlands
91E0	Alluvial Forests*

* denotes a priority habitat

TABLE 5.1.2: ANNEX II SPECIES		
CODE	COMMON NAME	SCIENTIFIC NAME
1016	Desmoulin's Whorl Snail	<i>Vertigo moulinsiana</i>
1029	Freshwater Pearl Mussel	<i>Margaritifera margaritifera</i>
1092	White-clawed Crayfish	<i>Austropotamobius pallipes</i>
1095	Sea Lamprey	<i>Petromyzon marinus</i>
1096	Brook Lamprey	<i>Lampetra planeri</i>
1099	River Lamprey	<i>Lampetra fluviatilis</i>
1103	Twaite Shad	<i>Alosa fallax</i>
1106	Atlantic Salmon	<i>Salmo salar</i>
1355	Otter	<i>Lutra lutra</i>
1421	Killarney Fern	<i>Trichomanes speciosum</i>
1990	Nore Freshwater Pearl Mussel	<i>Margaritifera durrovensis</i>

An excerpt from the site synopsis for River Barrow and River Nore SAC is included below. This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains. 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 upper reaches of the Barrow runs through limestone, with the middle reaches and many of the eastern tributaries running through Leinster Granite. The southern end runs over intrusive rocks poor in silica. Good examples of alluvial forest are seen at Rathsnagadan, Murphy's of the River and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species 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*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*).

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Good examples of old oak woodlands include those at Cloghristic Wood, Drummond Wood and Borris Demesne. Borris Demesne contains a very good example of a semi-natural broadleaved woodland in very good condition, with a high degree of natural regeneration of oak and ash. Drummond Wood consists of three blocks of deciduous woods situated on steep slopes. The deciduous trees are mostly oak species. The woods have a well-established understorey of Holly, and the herb layer is varied. Eutrophic tall herb vegetation occurs within various areas of alluvial forest and where the river floodplain is intact. Characteristic species include Meadowsweet, Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*) and Hedge Bindweed (*Calystegia sepium*). The invasive Indian Balsam (*Impatiens glandulifera*) is abundant in places. Floating river vegetation is well represented in the Barrow and many of its tributaries. Species include water-starworts (*Callitriche* spp.), Bulbous Rush (*Juncus bulbosus*), water-milfoils (*Myriophyllum* spp.), pondweeds (*Potamogeton* spp.) and crowfoots (*Ranunculus* spp.).

Dry heath occurs in pockets along the steep valley sides of the rivers. Dry heath vegetation consists of Bracken and Gorse (*Ulex europaeus*) with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (*Galium saxatile*), Foxglove (*Digitalis purpurea*), Common Sorrel (*Rumex acetosa*) and Creeping Bent (*Agrostis stolonifera*). Dry heath generally grades into wet woodland or wet swamp vegetation lower down the slopes on the riverbank. In the foothills associated with the Aughnabrisky, Aughavaud and Mountain Rivers there are wet heath areas dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*) and Bell Heather (*Erica cinerea*). Salt meadows occur at the site's southern section. In the larger salt meadow areas, the Atlantic and Mediterranean sub types are generally intermixed. At the salt meadow's upper edge, the legally protected Borrer's Saltmarsh-grass (*Puccinellia fasciculata*), Meadow Barley (*Hordeum secalinum*) and Divided Sedge (*Carex divisa*) are found. Other flora present includes Sea Rush (*Juncus maritimus*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*) and Sea Arrowgrass (*Triglochin maritima*). Glassworts (*Salicornia* spp.) and other annuals colonising mud / sand are found in the saltmarsh creeks and at seaward edges.

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, the Curragh, Goul Marsh and 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.

Land use at the site consists mainly of agricultural activities. The spreading of slurry and fertiliser poses a threat to the water quality and to the populations of Annex II 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, with both commercial and leisure fishing taking place. Other recreational activities such as boating, golfing and walking are also popular. Several industrial developments, which discharge into the river, border the site. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within woodland areas and invasion by non-native species. 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. It also

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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.

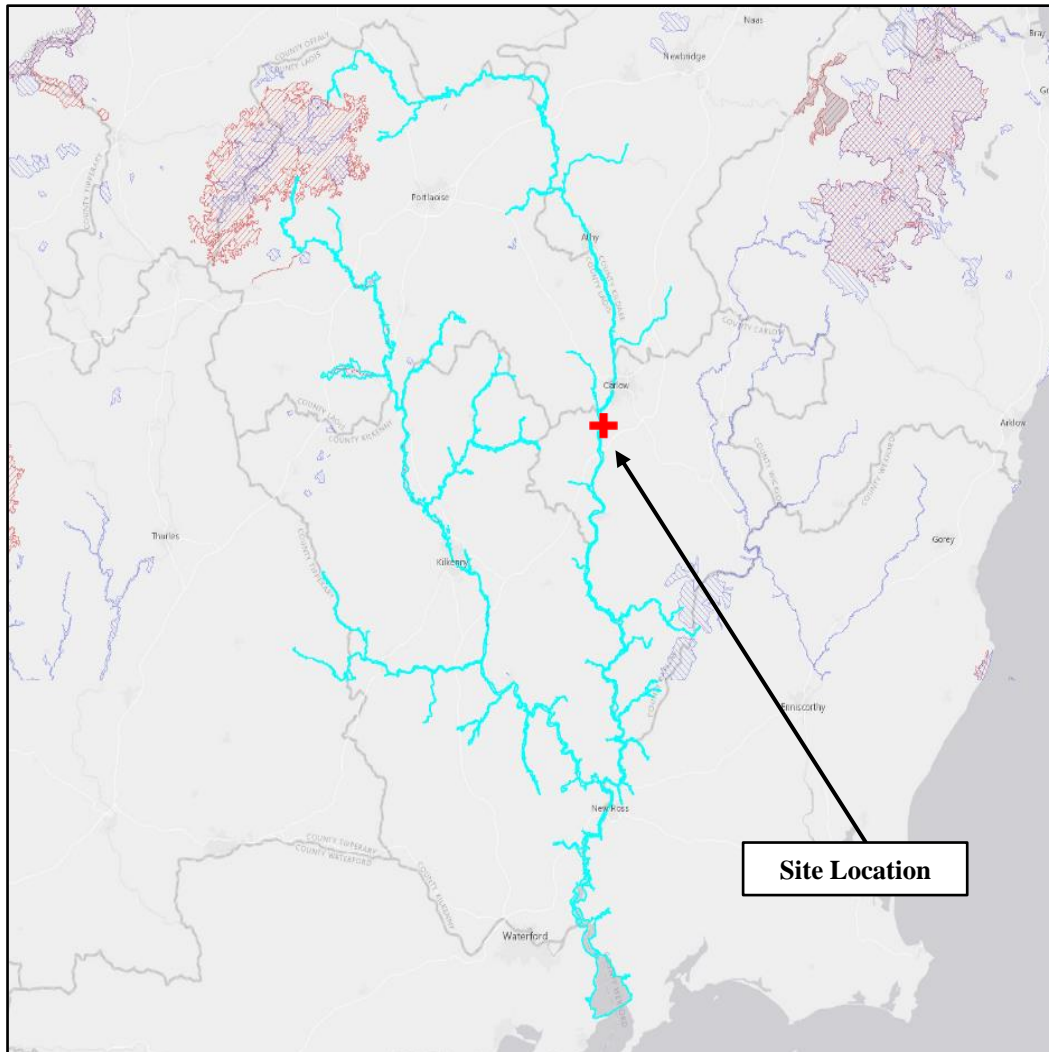


Figure 5.1: River Barrow and River Nore SAC

The conservation objectives for the SAC site are to maintain or restore the favourable conservation condition of the qualifying interests. Site specific conservation objectives (SSCOs) for the qualifying interests of the River Barrow and River Nore SAC are provided in the table below, where available from the NPWS document “Conservation Objectives: River Barrow and River Nore SAC 002162” (NPWS, 2011).

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
[1130] Estuaries			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes	Habitat area was estimated using OSI data and the defined Transitional Water Body area under the Water Framework Directive as 3856ha
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 <i>Fabulina fabula</i> community.	
Community extent	Hectares	Maintain the natural extent of the <i>Sabellaria alveolata</i> reef, subject to natural process	
[1140] Tidal Mudflats and Sandflats			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated using OSI data as 926ha
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	
[1170] Reefs			
None Specified	-	-	
[1310] Salicornia Mud			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession.	The Ringville sub-site was mapped and no additional areas of potential Salicornia mudflat were identified from an examination of aerial photographs, giving a total estimated area of 0.03ha. Note further unsurveyed areas maybe present within the site
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: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
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	
Vegetation structure: negative indicator species: <i>Spartina anglica</i>	Hectares	No significant expansion of <i>Spartina</i> . No new sites for this species and an annual spread of less than 1% where it is already known to occur	
[1330] Atlantic Salt Meadows			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession	Four sub-sites were mapped and additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area of Atlantic salt meadow of 35.07ha. Note further unsurveyed areas maybe present within the site
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: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
Vegetation structure: zonation	Occurrence	Maintain range of saltmarsh habitat zonation 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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
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	
Vegetation structure: negative indicator species: <i>Spartina anglica</i>	Hectares	No significant expansion of <i>Spartina</i> . No new sites for this species and an annual spread of less than 1% where it is already known to occur	
[1410] Mediterranean Salt Meadows			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Dunbrody Abbey - 0.08ha, Rochestown - 0.04ha, Ringville - 6.70ha	Three sub-sites were mapped and no additional areas of potential saltmarsh were identified from an examination of aerial photographs, giving a total estimated area of Mediterranean salt meadow of 6.82ha. Note further unsurveyed areas maybe present within the site
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: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	
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	% cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated.	
Vegetation composition: typical species and sub-communities	% cover at a representative sample of monitoring stops	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project	
Vegetation structure: negative indicator species: <i>Spartina anglica</i>	Hectares	No significant expansion of <i>Spartina</i> . No new sites for this species and an annual spread of less than 1% where it is already known to occur	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
[3260] Floating River Vegetation			
Habitat distribution	Occurrence	No decline, subject to natural processes	<p>The full distribution of this habitat and its sub-types in this site is currently unknown. The basis of the selection of the SAC for the habitat is the presence of an excellent example of the vegetation assemblage associated with tidal reaches of large rivers between Enniscorthy and Polladerg townland.</p> <p>Due to regular disturbance (through variations in flow), river macrophytes rarely reach a climax condition but frequently occur as transient communities. A natural (relatively unmodified) flow regime is required for both plant communities and channel geomorphology to be in favourable condition, exhibiting typical dynamics for the river type</p>
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	Milligrammes per litre	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits	
Water quality: suspended sediment	Milligrammes 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	Milligrammes 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	The area of active floodplain at and upstream of the habitat should be maintained	
[4030] Dry Heath			
Habitat distribution	Occurrence	No decline from current habitat distribution, subject to natural processes	<p>Spatial extent currently unmapped but indicated as occurring on the steep, free-draining, river valley sides especially the Barrow and tributaries in the foothills of the Blackstairs Mountains.</p> <p>Dry heath in this SAC occurs on free-draining nutrient poor soils and is often characterised by gorse and open acid</p>
Habitat area	Hectares	Area stable or increasing, subject to natural processes. Habitat area is not known but estimated as less than 400ha of the area of the SAC, occurring in dispersed locations	
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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES

ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Vegetation structure: sub- shrub indicator species	Percentage cover	Cover of characteristic sub- shrub indicator species at least 25%: gorse (<i>Ulex europaeus</i>) and where rocky outcrops occur bilberry (<i>Vaccinium myrtillus</i>) and woodrush (<i>Luzula sylvatica</i>). Some rock outcrops support English stonecrop (<i>Sedum anglicum</i>), sheep's bit (<i>Jasione montana</i>) and wild madder (<i>Rubia peregrina</i>) as well as important moss and lichen assemblages	grassland areas. And locally bilberry and woodrush. Bracken appears to be quite dense in places and before any management action is considered its rate of spread needs to be established as well as its threat, if any, to other dry heath species and its potential value to important fauna (e.g. Twite).
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 characteristic 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 (<i>Pteridium aquilinum</i>)	Percentage cover	Cover of bracken less than 10%	
Vegetation structure: weedy negative indicator species	Percentage cover	Cover of agricultural weed species (negative indicator species) less than 1%	
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 (<i>Orobanche rapum-genistae</i>)	Broomrape is dependent on gorse at this site as it is parasitic on gorse roots. It is recorded as occurring on steep slopes above New Ross. A small area of excellent dry coastal heath at Ballyhack is interspersed with patches rock and of dry lowland grassland and has a high species diversity. Notably there is an excellent range of Clover (<i>Trifolium</i>) species including the legally protected clustered clover, a species known only from one other site in Ireland. Also <i>T. ornithopodiodes</i> , <i>T. striatum</i> and <i>Torilus nodosa</i> .

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
		and the legally protected clustered clover (<i>Trifolium glomeratum</i>)	
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	
[6430] Hydrophilous Tall Herb Communities			
Habitat distribution	Occurrence	No decline, subject to natural processes	<p>Distribution of this habitat in this site is currently unknown. Considered to occur in association with some riverside woodlands, unmanaged river islands and in narrow bands along the floodplain of slow-flowing stretches of river.</p> <p>This habitat requires winter inundation, which results in deposition of naturally nutrient-rich sediment.</p> <p>Bare ground, due to natural inundation processes may often be present. Attribute and target based on the Irish Semi-natural Grassland Survey (O'Neill et al., 2010)</p>
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 (<i>Impatiens glandulifera</i>), monkeyflower (<i>Mimulus guttatus</i>), Japanese knotweed (<i>Fallopia japonica</i>) and giant hogweed (<i>Heracleum mantegazzianum</i>)	
[7220] Petrifying Springs			
Habitat area	Square metres	Area stable or increasing, subject to natural processes	Full distribution of this habitat in this site is currently unknown. It has been described in woodlands at Dysart,
Habitat distribution	Occurrence	No decline	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Hydrological regime: height of water table; water flow	Metres; metres per second	Maintain appropriate hydrological regimes	<p>between Thomastown and Inistioge.</p> <p>Current hydrological regimes are unknown. Petrifying springs rely on permanent irrigation, usually from upwelling groundwater sources or seepage sources.</p> <p>Water chemistry is currently unknown. Water supply to petrifying springs is characteristically oligotrophic and calcareous</p> <p>The bryophytes <i>Cratoneuron commutatum</i> and <i>Eucladium verticillatum</i> are diagnostic of this habitat.</p>
Water quality	Water chemistry measures	Maintain oligotrophic and calcareous conditions	
Vegetation composition: typical species	Occurrence	Maintain typical species	
[91A0] Old Oak Woodlands			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 85.08ha for sub-sites surveyed	<p>The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring ‘deep’ woodland conditions.</p> <p>Oak regenerates poorly. In suitable sites ash can regenerate in large numbers although few seedlings reach pole size.</p> <p>Mature and veteran trees are important habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and</p>
Habitat distribution	Occurrence	No decline.	
Woodland size	Hectares	Area stable or 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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
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	<p>propagule sources.</p> <p>Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem.</p> <p>The following are the most common invasive species in this woodland type: Beech (<i>Fagus sylvatica</i>), Rhododendron (<i>Rhododendron ponticum</i>), Cherry laurel (<i>Prunus laurocerasus</i>)</p>
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 oak (<i>Quercus petraea</i>) and birch (<i>Betula pubescens</i>)	
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	
[91E0] Alluvial Forests			
Habitat area	Hectares	Area stable or increasing, subject to natural processes, at least 181.54ha for sites surveyed	<p>The sizes of at least some of the existing woodlands need to be increased in order to reduce habitat fragmentation and benefit those species requiring ‘deep’ woodland conditions.</p> <p>Alder and oak regenerate poorly. Ash often regenerates in large numbers although few seedlings reach pole size.</p> <p>Dead wood is a valuable resource and an integral part of a healthy, functioning woodland ecosystem.</p> <p>Mature and veteran trees are important</p>
Habitat distribution	Occurrence	No decline.	
Woodland size	Hectares	Area stable or 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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Hydrological regime: Flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	habitats for bryophytes, lichens, saproxylic organisms and some bird species. Their retention is important to ensure continuity of habitats/niches and propagule sources. The following are the most common invasive species in this woodland type: Sycamore (<i>Acer pseudoplatanus</i>), Beech (<i>Fagus sylvatica</i>), Rhododendron (<i>Rhododendron ponticum</i>), Cherry laurel (<i>Prunus laurocerasus</i>), Dogwood (<i>Cornus sericea</i>), Himalayan honeysuckle (<i>Leycesteria formosa</i>) and Himalayan balsam (<i>Impatiens grandiflora</i>).
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 (<i>Fraxinus excelsior</i>) alder (<i>Alnus glutinosa</i>), willows (<i>Salix</i> spp) and locally, oak (<i>Quercus robur</i>)	
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control	
[1016] Desmoulin's Whorl Snail			
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 adults 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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Habitat quality: soil moisture levels	Percentage of samples with appropriate soil moisture levels	90% of samples in moisture class 3-4	
[1029] Freshwater Pearl Mussel			
The status of the FPM as a qualifying Annex II species for the River Barrow and River Nore SAC is currently under review			
[1092] White-clawed Crayfish			
Distribution	Occurrence	No reduction from baseline	<p>The crayfish is present almost throughout this SAC. The records extend as far downstream as Thomastown on the Nore and Graiguenamanagh on the Barrow.</p> <p>Alien crayfish species are identified as major direct threat to this species and as disease vector.</p> <p>Crayfish need high habitat heterogeneity. Larger crayfish must have stones to hide under, or an earthen bank in which to burrow. Hatchlings shelter in vegetation, gravel and among fine tree-roots. Smaller crayfish are typically found among weeds and debris in shallow water. Larger juveniles in particular may also be found among cobbles and detritus such as leaf litter. These conditions must be available on the whole length of occupied habitat</p>
Population structure: recruitment	% 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	
[1095] Sea Lamprey			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	<p>Artificial barriers can block or cause difficulties to lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.</p>
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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Extent and distribution of spawning habitat	m ² and occurrence	No decline in extent and distribution of spawning beds	Juveniles burrow in areas of fine sediment in still water.
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	Lampreys spawn in clean gravels.
[1096] Brook Lamprey			
Distribution	% of river accessible	Access to all water courses down to first order streams	Artificial barriers can block lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.
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	It is impossible to distinguish between brook and river lamprey juveniles in the field.
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	Juveniles burrow in areas of fine sediment in still water. Lampreys spawn in clean gravels.
[1099] River Lamprey			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem and major tributaries down to second order accessible from estuary	Artificial barriers can block lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.
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	It is impossible to distinguish between brook and river lamprey juveniles in the field.
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	More than 50% of sample sites positive	Juveniles burrow in areas of fine sediment

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES			
ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
	channels (and greater), downstream of spawning areas		in still water. Lampreys spawn in clean gravels.
[1103] Twaite Shad			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	<p>In some catchments, artificial barriers block twaite shads' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.</p> <p>Regular breeding has been confirmed in the River Barrow in recent years, but not in the Nore.</p>
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 plants) growth	
[1106] Atlantic Salmon			
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary	<p>Artificial barriers block salmons' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.</p> <p>Smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, predation and sea lice (<i>Lepeophtheirus salmonis</i>).</p> <p>Salmon spawn in clean gravels.</p> <p>Q values based on triennial water quality surveys carried out by the EPA.</p>
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	
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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES

ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	
[1355] Otter			
Distribution	% positive survey sites	No significant decline	<p>Otters need lying up areas throughout their territory where they are secure from disturbance.</p> <p>Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater and wrasse and rockling in coastal waters</p> <p>Otters will utilise freshwater habitats from estuary to headwaters within 80m of the shoreline.</p>
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. Area mapped and calculated as 857.7ha	
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 616.6km	
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 2.6ha	
Couching sites and holts	Number	No significant decline	
Fish biomass available	Kilograms	No significant decline	
[1421] Killarney Fern			
Distribution	Location	No decline. Three locations known, with three colonies of gametophyte and one sporophyte colony	<p>'Juvenile' sporophytes, which appear as small entire fronds, are known from this site. However, it is unknown whether they are due to apogamous growth or sexual reproduction.</p>
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	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES

ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
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	
Invasive species	Occurrence	Absent or under control	
[1990] Nore Freshwater Pearl Mussel			
Distribution	Kilometres	Maintain at 15.5km.	<p>The population stretches from Poorman's Bridge (S407859) to Lismaine Bridge (S442660), with most of the population found between Poorman's Bridge and the Avonmore Creamery above Ballyragget (S 440 722).</p> <p>The extant wild population of Nore freshwater pearl mussel is estimated as 300 adult individuals.</p> <p>Mussels of no more than 65mm are considered 'young mussels' and may be found buried in the substratum and/or beneath adult mussels. Mussels of no more than 30mm are 'juvenile mussels' and are always buried in the substratum.</p> <p>This species is known not to have reproduced successfully in the River Nore since 1970.</p> <p>Juvenile mussels require full oxygenation while buried in gravel.</p>
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) and any additional stretches necessary for salmonid spawning	
Water quality: Macroinvertebrates and phytobenthos (diatoms)	Ecological quality ratio (EQR)	Restore water quality- macroinvertebrates: EQR greater than 0.90; phytobenthos: EQR greater than 0.93	
Substratum quality: Filamentous algae (macroalgae), macrophytes (rooted higher plants)	Percentage	Restore substratum quality- filamentous algae: absent or trace (<5%)	

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TABLE 5.1.3 RIVER BARROW AND RIVER NORE SAC CONSERVATION OBJECTIVES

ATTRIBUTE	MEASURE	TARGET	SELECTED NOTES
Substratum quality: sediment	Occurrence	Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment.	<p>Salmonid fish are host to the larval form of freshwater pearl mussels and thus, they are essential to the completion of the life cycle.</p> <p>As native brown trout appear to be favoured by the Nore freshwater pearl mussel, it is particularly important that these are not outcompeted by stocked fish.</p>
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	

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River Barrow and River Nore SAC Conservation Status

According to the Habitat's Directive, favourable conservation status of a habitat is achieved when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined below.

According to the Habitat's Directive, favourable conservation status of a species is achieved when:

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

Table 5.1.4: The conservation statuses for the qualifying interests of the River Barrow and River Nore SAC site are outlined below.

CODE	QUALIFYING INTEREST	NATIONAL CONSERVATION STATUS*
1130	Estuaries	Inadequate
1140	Tidal Mudflats and Sandflats	Inadequate
1170	Reefs	Inadequate
1310	<i>Salicornia</i> Mud	Favourable
1330	Atlantic Salt Meadows	Inadequate
1410	Mediterranean Salt Meadows	Inadequate
3260	Floating River Vegetation	Inadequate
4030	Dry Heath	Bad
6430	Hydrophilous Tall Herb Communities	Bad
7220	Petrifying Springs	Inadequate
91A0	Old Oak Woodlands	Bad
91E0	Alluvial Forests	Bad
1016	Desmoulin's Whorl Snail	Inadequate
1029	Freshwater Pearl Mussel	Bad
1092	White-clawed Crayfish	Bad
1095	Sea Lamprey	Bad
1096	Brook Lamprey	Favourable
1099	River Lamprey	Unknown
1103	Twaite Shad	Bad
1106	Atlantic Salmon	Inadequate
1355	Otter	Favourable
1421	Killarney Fern	Favourable
1990	Nore Freshwater Pearl Mussel	Bad

*Sourced from the Status of EU Protected Habitats and Species in Ireland (NPWS, 2019b and 2019c).

6.0 ASSESSMENT OF LIKELY IMPACTS

6.1 DISTURBANCE TO PROTECTED HABITATS AND SPECIES

The development site does not directly impinge on any part of a European site, and as such would not be expected to have any in-situ effects upon a protected site through loss or destruction of habitat, fragmentation of habitat, disturbance of habitat or direct reduction in species density. The proposed development is partly within the boundary of the River Barrow and River Nore SAC (Site Code: 002162) along the west. However, the section of the SAC to the west incorporates the R448 Regional Road adjacent to the proposed development. See Appendix A for summary of the Qualifying Interests and summary of potential impact from the development site.

It is not considered that the development site would contain the habitats or species for which the River Barrow and River Nore SAC have been designated as the development site is predominantly comprised of buildings and artificial surfaces habitat. No areas of woodland exist within the development site; therefore, the site does not contain any habitat which would have potential links to Old Oak Woodlands [91A0] or Alluvial Forests [91E0]. The closest Old Oak Woodlands is approximately 24km south-east (25.5km hydrologically downstream) near Graiguenamanagh and the closest Alluvial Forests is approximately 6.51km north-west and 1.3km hydrologically upstream.

No areas of heath or marsh / swamp habitats occur on the development site; therefore the site does not contain any habitat which would have potential links to Dry Heath [4030] or Hydrophilous Tall Herb Communities [6430]. Dry Heath is currently unmapped however it is known to be along the River Barrow and tributaries in the Blackstairs Mountains. This habitat is not within or adjacent the site boundary and the development would not impact on this habitat. Hydrophilous Tall Herb Communities distribution is currently unknown. Considered to occur in association with some riverside woodlands, unmanaged river islands and in narrow bands along the floodplain of slow-flowing stretches of river. This habitat is not found within the development site and the development does not impact on this habitat.

The development site is located a considerable distance from the tidal stretches of the River Barrow (approximately 35km hydrologically upstream), thus qualifying interests associated with saltwater and tidal conditions would not be present. The Powerstown and River Barrow would likely contain aquatic freshwater species of conservation value. The development would not require any construction works within this watercourse or riparian zone. During the operational phase there would be no significant impact as stormwater will be attenuated and a new oil interceptor prior to entering the drainage network. During the site assessment, no Killarney Fern [1421] was present with the closest records approximately 35.5km (hydrologically) downstream (near Graiguenamanagh). In the absence of swamp, fen and marsh habitat at the site, and in the absence of historic records, it is not considered that the development site would be suitable to support populations of Desmoulin's Whorl Snail. The closest records for this species are approximately 22km (hydrologically) downstream near Borris.

While no evidence of otter (including holts, slides, spraints and tracks) was recorded during the ecological site assessment, given that the development site is located 15m south of the Powerstown watercourse which is hydrologically connected to the River Barrow 545m downstream of the proposed development, it is likely that otter are present within the general

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area. The development site is mainly comprised of modified habitats which would be of limited value to otter, should this species be present within the vicinity. The development is also bordered by a boundary steel mesh fence around the existing development to the south and to the east of the proposed new development site extension. Therefore, the development would not have a significant potential impact upon otter due to habitat loss or fragmentation, given the limited land-take required, modified habitats, and given the availability of more suitable otter habitat in the general area.

It is not envisaged that protected species would be adversely impacted upon by the development due to noise generated by the development as the surrounding area is located within a rural setting adjacent to the R448 regional road and within 158m south-east from the M9 motorway. The proposed development is also located in close proximity to a quarry. Fauna in the area would be accustomed to human generated noise from commercial, extractive and vehicular activities commonly audible within rural areas. While there would be increased noise emissions during the construction phase of the development, these would not be considered to pose a significant risk owing to the transient nature of works and the scale of the works. Construction works will be carried out during daylight hours, therefore works will not cause significant disturbance to nocturnal species foraging at the river. Fauna in the area would also be accustomed to noise from vehicular traffic during the operational phase of the development. Earthworks would be confined to the site with the main activities being the foundations, drainage network and any site levelling.

The potential disturbance on protected habitats and species due to dust during the construction phase would not be considered significant, given the transient nature of construction works and the scale of the development. It is not considered that the operational phase of the development has the potential to adversely impact upon designated sites due to air emissions given the nature of the development.

The proposed development would not require any works within a watercourse or drainage ditch or along the riparian habitat. The proposed development will retain the boundary treelines and hedgerows however, these will be trimmed. Some areas of recolonising vegetation and dry meadows and grassy verges will be removed for the installation of a concrete yard however, these habitats are on modified ground and would not be considered of significant ecological value given the small area of these habitats within a larger rural environment. It is therefore considered that the development would not result in any significant risk to the protected habitats and species of the River Barrow and River Nore SAC due to habitat fragmentation or loss, disturbance or reduction in species density.

6.2 INVASIVE SPECIES

Under Regulation 49(2) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to any plant which is included in Part 1 of the Third Schedule shall be guilty of an offence. Materials containing invasive species such as Japanese Knotweed are considered “controlled waste”, and, as such, there are legal restrictions on their handling and disposal. Under Regulation 49(7) of the European Communities (Birds and Natural Habitats) Regulations 2011, it is a legal requirement to obtain a license to move “vector materials” listed in the Third Schedule, Part 3.

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Table 6.1: National Biodiversity Data Centre records of Third Schedule invasive species within 10km square (Tetrad – S76) of the development.

THIRD SCHEDULE INVASIVE FLORA	
Rhododendron ponticum	Canadian Waterweed (<i>Elodea canadensis</i>)
Giant Hogweed (<i>Heracleum mantegazzianum</i>)	Three-cornered Garlic (<i>Allium triquetrum</i>)
Indian Balsam (<i>Impatiens glandulifera</i>)	Japanese Knotweed (<i>Fallopia japonica</i>)
Water Fern (<i>Azolla filiculoides</i>),	Nuttall's Waterweed (<i>Elodea nuttallii</i>)

The spread of invasive plant and animal species can negatively impact on the conservation objectives of certain Annex I habitats and species designated within SACs. No invasive species were noted within or adjacent the site boundary during the site assessment. The proposed development boundary is approximately 15m from the Powerstown watercourse and will not require any works within this watercourse or along the riparian zone. The risk of invasive species being introduced onto the site during the operational phase of the project is considered to be low, with no import of materials with the potential to contain invasive flora species. Any additional topsoil will be thoroughly checked and screened before being imported into the site. No planting programme proposed as part of this development except for grass finishing on the proposed new mounds. Existing boundary hedgerows and treelines will be retained but trimmed.

6.3 POTENTIAL IMPACTS ON WATER QUALITY

The proposed development is located within the Barrow Catchment, Sub Catchment Barrow_100. The nearest watercourse to the development site is the Powerstown which is at its closest approximately 15m north of the site red line boundary. This river flows in a westerly direction past the site for approximately 545m where it joins the River Barrow confluence. The development site would not be considered to impact upon the listed habitats and species of the SAC site during construction phase the due to deleterious effects on water quality, owing to the location of the development, no works within a watercourse/drainage ditch, the nature and the small scale of the development. There are no watercourses or drainage ditches within the proposed site boundary.

During the construction phase of projects, a deterioration in water quality can arise through the release of suspended solids during soil disturbance works, the release of uncured concrete and the release of hydrocarbons (fuels and oils). Construction would be confined to the development site footprint, with no works taking place outside of the site boundary within the riparian zone or aquatic habitat. The construction of the development would require limited deep excavation works. A partial wall is located over the Powerstown river culvert. This wall is adjoined by a wooden fence and steel mesh fence along the north-eastern boundary. The proposed development includes a new concrete yard to the north and south within the red line boundary. The area north is closest to the watercourse however, with a buffer distance of approximately 15m to the watercourse and the works to be undertaken on level ground, it is not expected that the proposed development would impact upon water quality in terms of run-off from concrete.

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In the event suspended solids become entrained in surface water run-off during the construction phase, there is considered to be no significant risk of impact on water quality as suspended solids would likely be retained on site as run-off percolates to the ground. The risk of water quality deterioration as a result of uncured concrete would be further reduced, given that precast concrete / blockwork would be used where possible. The development also includes a new earth mound with grass finish to the northern boundary. The grass finish will stabilise the mound reducing any risk of suspended solids being released into the nearby watercourse. Given the construction footprint is small in scale, with the total site area of 314.8m² and the limited construction plant and equipment required, the risk of the development site impacting significantly upon water quality would be greatly reduced. Therefore, run-off from the development site will not have a significant impact on the nearby watercourses such as the Powerstown watercourse.

During the operational phase, it is not anticipated that the drainage systems have the potential to impact upon the listed habitats and species of the SAC sites due to deleterious effects on water quality. Surface water from the proposed development, comprising of clean rainwater run-off, would be attenuated on site and will have a bypass oil interceptor prior to entering the Powerstown watercourse. The drainage design includes for stormwater attenuation within oversized storm-drain pipework prior to leaving the site. There would be no impact to the hydrological regime or flood risk. The surface water drainage will be attenuated in line with the GDSDS policy. The potential impact of the development upon the River Barrow and River Nore SAC in the event of a flood event would not be considered significant as the development site is not located within a flood risk zone and there is no history of flooding within the development site. The proposed development is located at a much higher altitude than the watercourse which flows beneath the road network. As the development is not located within a flood risk zone, there is no potential for the risk of pollution due to stored materials. The proposed brine station tanks will be bunded and a crash barrier will be installed to reduce any potential impacts to water quality as a result of spillage. Therefore, the proposed development would not be anticipated to pose a significant risk upon the SAC sites as a result of floodwaters or surface water run-off during the operational phase.

Foul water will be directed to the an existing Waste Water Treatment Plant in the adjacent landfill owned by Carlow County Council.

It is therefore considered that, due to the nature and location of the development, approximately 15m from the Powerstown watercourse, the relatively small scale and extent of construction works, no excavation works within the riparian zone or along the riparian zone of the Powerstown, the development site does not pose a significant risk upon the River Barrow and River Nore SAC site due to a deleterious effect on water quality during either the construction or operational phases.

6.4 IN COMBINATION EFFECTS

The following plans and projects were reviewed and considered for in-combination effects with the development site:

- Carlow County Development Plan 2022-2028
- Proposed and permitted developments in the area available on Carlow County Council planning system.

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The proposed development is located approximately 3.4km north-west of Nurney (centre) which is described as a smaller serviced rural village according to the Carlow County Council Development Plan 2022-2028. The development site will be accessed via the R488 Regional road along the western boundary providing connectivity to Carlow town located approximately 8km north. The R488 joins with the M9 approximately 158m to the north-west of the development. The small town of Leighlinbridge is located approximately 6.8km south-west of the proposed development. The following plans and projects were reviewed and considered for in-combination effects with the development site.

Table 6.2: Recent planning applications close to the development site

Application No.	Development Type	Outcome	Approximate Distance
2152	Permission for the conversion of existing outbuilding to rear of dwelling for habitable use, including renovations and raised ridge height. Permission is also sought for the construction of a single storey annex link from dwelling to converted outbuildings, upgrade the on-site wastewater treatment system and all associated ancillary works.	Granted - Conditional	453m S
14353	Permission for the development at a site of c.4.74ha at Junction 6 on the M9 Motorway located at Clonristic, Milford, co. Carlow. The development will consist of an off-line motorway service area comprising the following: a new roundabout interchange providing access to the site on the R448 north of M9 Junction 6. Relocated farm access north of the proposed interchange. A 4-pump island car/van forecourt and a 2-pump island HCV forecourt, both with canopy over. The height of each canopy is c.6.84m and c.6.3m respectively. Underground fuel storage tanks (total area c.200 sq.m) and associated pipework. Private well, underground static/potable water tanks and associated pipework. 3 no. underground full retention separators (c.42 sq.m). An amenities building (total gross area of c.1400sq.m) comprising: a convenience shop (C.100sq.m net sales area), 5 no. eat-in/takeaway cafe/restaurants (c.185 sq.m in total) ancillary areas (c.275 sq.m) comprising store rooms, freezers, chillers, manager's office, cash room, comms room, staff toilets, staff Locker room, lobbies, sluice, food preparation areas; external storage (c.170 sq.m), public toilets (c.123 sq.m); seating/circulation area (c.486sq.m); tourist information area (c.4sq.m) internal play area (c.45 sq.m), fuel store (c.12 sq.m). Picnic area, external play area and external seating area (c.476sq.m in total). Parking for 113 cars (including 6 no. disabled parking spaces), 20 HGV's, 6 coaches, 6 motorcycles and 18 bicycles. Ancillary signage (both illuminated and non-illuminated) on the amenity building (north elevation), car/van and HCV forecourt canopies (total area of signage c.24.9 sq.m) 2 no. double sided totem	Granted - Conditional	507m N

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Application No.	Development Type	Outcome	Approximate Distance
	price point signs and 1 no. double sided welcome sign (c.172.5 sq.m total advertising area) indicating site services. On-site wastewater treatment system and sand polishing filter. Surface water soakaway (c.1050 sq.m). All ancillary site development, landscaping and boundary treatment works.		
1467	Permission to extract sand and gravel on 19.81 hectares of lands, of which 18.94 hectares is the extraction area at Powerstown, Co. Carlow. Permission is also being sought for the construction of screening berms, all associated works and ancillary activities and the restoration of the site to agricultural use. This application will be accompanied by an Environmental Impact Statement (EIS).	Granted - Conditional	588m S
15121	Retention for an extension and to erect a further extension along with a curing shed for an authorised pre-cast concrete manufacturing facility. Permission is also being sought to erect a concrete batching plant all located at its manufacturing facility	Granted - Conditional	688m SE
2067	Permission for the erection of a slatted cattle shed, unroofed silage pit, cattle handling area, concrete yards and ancillary work.	Granted - Conditional	740m SW
15252	Permission for construction of an agricultural shed for use as a straw bedded cattle shed, along with cattle crush, concrete apron, concrete tank for run off and all associated site works	Granted - Conditional	860m NE
1462	Permission for cattle shed, concrete apron dungstead, concrete yard and associated site works.	Granted - Conditional	1.1km W
1837	Planning permission is sought for the construction of a dormer style dwelling house, domestic garage, proprietary sewage treatment system and percolation area, and connection to services and associated site works.	Granted - Conditional	1.1km W
19254	Permission for the alteration of existing entrance gates, setback of existing hedgerow and ancillary works.	Granted - Conditional	1.2km SW

In-combination impacts would be controlled by national energy policies, grant schemes and motor fuel emission targets. Continued implementation of the Water Framework Directive would result in achieving, or maintaining, improvements to water quality in the Barrow Catchment. Developments such as this proposed development could act in combination with existing environmental pressures on the Barrow Catchment, including: agriculture, anthropogenic, domestic and urban waste water, urban run-off, industry (including extractive) and forestry. However, as noted in Section 6.3, it is not considered that the development would pose a significant risk upon any SAC site due to a deleterious effect on water quality, during either the construction or operational phase.

As discussed in Sections 6.1 – 6.3 above, it is considered that there would be no significant risk to any European site owing to the proposed development. As there are no anticipated

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significant risks from the development and proposed works and given the nature of the development and distances of other facilities in the area, it is considered that there would be no cumulative water, noise or air impacts which would pose a significant risk to designated sites or species.

7.0 SCREENING STATEMENT AND CONCLUSIONS

This report identified the presence of European sites (Natura 2000) within the potential zone of influence. The potential for impacts to European sites as a result of the development site such as potential water quality impacts, introduction of invasive species, habitat destruction and impacts from noise and dust were considered and the level of risk posed assessed.

During Stage 1 Screening for Appropriate Assessment, it was considered that there would be no potential for a significant impact upon the qualifying interests / special conservation interests of the River Barrow and River Nore SAC (002162) during both the construction and operational phase of the development site.

This report presents a Stage 1 Appropriate Assessment Screening for the development site, outlining the information required for the competent authority to screen for appropriate assessment and to determine whether or not the development site, either alone or in combination with other plans and projects, in view of best scientific knowledge, is likely to have a significant effect on any European or Natura 2000 site. It is considered that there would be no significant risk of negative impact, either alone or in combination with other plans or projects, to the integrity of the Natura 2000 network. Therefore, a Natura Impact Statement is not required.

Accordingly, having carried out the Stage 1 Appropriate Assessment Screening, the competent authority may determine that a Stage 2 Appropriate Assessment of the development site is not required as it can be excluded, on the basis of objective scientific information following screening under this Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended, that the development site, individually or in combination with other plans or projects, will not have a significant effect on any European site.

It can be objectively concluded that no significant effects arising from the development site are likely to occur in relation to the River Barrow and River Nore SAC (Site Code 002162) or indeed any other Natura 2000 site in the wider hinterland.

8.0 REFERENCES

- Aas, G., Riedmiller, A. (1994) *Trees of Britain & Europe*. Harper Collins Publishers
- Averis, B. (2013) *Plants and Habitats: An introduction to common plants and their habitats in Britain and Ireland*. United Kingdom: Swallowtail Print Ltd
- Bang, P., Dahlstrøm, P. and Walters, M. (2006) *Animal Tracks and Signs*. Oxford University Press

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Byrne, A., Moorkens, E.A., Anderson, R., Killeen, I.J. & Regan, E.C. (2009) *Ireland Red List No. 2 – Non-Marine Molluscs*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

Cabot, D. (2004) *Irish Birds*. Harper Collins Publishers, London

Cummins, S., Fisher, J., McKeever, R. G., McNaghten, L. and Crow, O. (2010) *Assessment of the distribution and abundance of Kingfisher Alcedo atthis and other riparian birds on six SAC river systems in Ireland*. BirdWatch Ireland.

Council Directive (EC) 2009/147/EC of 30 November 2009 on the conservation of wild birds.

Council Directive (EC) 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

DoEHLG (2010) *Freshwater Pearl Mussel Mountain Sub-Basin Management Plan*. Department of the Environment, Heritage and Local Government.

DoEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities*.

Environment DG, European Commission (2002) *Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*.

Environmental Protection Agency Licence public access information, Available at: <http://www.epa.ie/licensing/iedipcse/>

EPA (March 2021) “*Code of Practice – Domestic Waste Water Treatment Systems (Population Equivalents ≤10)*”.

European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009).

European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (S.I. 296 of 2009)

European Communities (Quality of Salmonid Waters) Regulations 1988 (S.I. No. 293 of 1988)

Fitzpatrick, U., Weeks, L., Wright, M. (2016) *Identification Guide to Irelands Grasses*. National Biodiversity Data Centre

Gilbert, G., Stanbury, A & Lewis, L. (2021) *Birds of Conservation Concern in Ireland 2021-2026*, Irish Birds, 9, pp. 523-544.

Gordon, P., Donovan, R., Matson, R., Corcoran, W., and Kelly, F.L. (2021) *Sampling Fish in Rivers 2020 – River Barrow Catchment*, Factsheet No. 2020/01. National Research Survey Programme. Inland Fisheries Ireland

APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW

- Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. Kilkenny: The Heritage Council.
- Harrap, S. (2013) *Wild Flowers, A Field Guide to the Flowers of Britain & Ireland*. Bloomsbury Publishing.
- Irish Water (2020) *Connections and Developer Services, Design and Construction Requirements for Self-Lay Developments*. Document IW-CDS-5030-03
- Irish Water (2020) *Wastewater Infrastructure Standard Details, Connections and Developer Services. Design and Construction Requirements for Self-Lay Developments*. Document IW-CDS-5030-01
- Irish Water (2020). *Annual Environmental Report 2020*. Carlow. Irish Water.
- Johnson, O. and More, D. (2006) *Collins Tree Guide: The Most Complete Field Guide to the Trees of Britain and Europe*. London: HarperCollins Publishers.
- National Parks and Wildlife Service, available at: <http://www.npws.ie/protected-sites>
- NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2016) Site Synopsis: River Barrow and River Nore SAC 002162. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2019a) The Status of Protected EU Habitats and Species in Ireland. Volume 1: Summary Overview Unpublished Report, National Parks and Wildlife Services, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2019b) The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitats Assessments. Unpublished report. National Parks and Wildlife Services, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2019c) The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished report. National Parks and Wildlife Services, Department of Culture, Heritage and the Gaeltacht.
- NPWS (2020) Natura Standard Data Form for River Barrow and River Nore SAC.
- O'Neill, F.H. & Barron, S.J. (2013) Results of monitoring survey of old sessile oak woods and alluvial forests. Irish Wildlife Manuals, No. 71. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- Parnell, J. and Curtis, T. (2012) *Webb's An Irish Flora*. Cork: Cork University Press.
- Philips, R. (1980) *Grasses, Ferns, Mosses & Lichens of Great Britain and Ireland*. London: Pan Books.
- Rose, F. (2006) *The Wildflower Key: How to identify wildflowers, trees and shrubs in Britain and Ireland*. China: Frederick Warne & Co.

APPROPRIATE ASSESSMENT SCREENING REPORT
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Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011) *Best Practice Guidance for habitat survey and mapping*. The Heritage Council, Kilkenny. Available at: www.heritagecouncil.ie/wildlife/publications/

Streeter, D. (2018) *Collins Wild Flower Guide*. Harper Collins Publishers, London

Sterry, P. (2004) *Complete Irish Wildlife*. Harper Collins Publishers, London

Sutherland, W.J. (Ed.). (2006) *Ecological Census Techniques*. United Kingdom: Cambridge University Press.

Wheater, C.P., Bell, J.R. and Cook, P.A. (2011) *Practical Field Ecology: A Project Guide*. John Wiley & Sons.

Wilson, J. and Carmody, M. (2013) *The Birds of Ireland*. Gill Books

APPENDIX A

ALL QUALIFYING INTERESTS

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
[1130] Estuaries	The development site is located outside the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located approximately 35.6km (hydrologically) downstream of the development site (NPWS, 2011). Given the considerable distance, it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests.	No	No
[1140] Tidal Mudflats and Sandflats	The development site is located outside the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located approximately 62km (hydrologically) downstream of the development site (NPWS, 2011). Given the considerable distance, it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests.	No	No
[1170] Reefs	The development site is located outside the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located greater than 62km (hydrologically) downstream of the development site (NPWS, 2011). Given the considerable distance, it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests.	No	No
[1330] Atlantic Salt Meadows (<i>Glaucopuccinellietalia maritima</i>)	The development site is located outside the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located approximately 66km (hydrologically) downstream of the development site (NPWS, 2011). Given the considerable distance, it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests.	No	No
[1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	The development site is located outside the current known distribution, current range and favourable reference range of these qualifying interests (NPWS, 2019b). The nearest examples of these qualifying interests are located greater than 69km (hydrologically)downstream of the development site (NPWS, 2011). Given the considerable distance, it is not anticipated that the development would have the potential to negatively impact upon these qualifying interests.	No	No

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
[3260] Floating River Vegetation	The development site is located within the current distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). While this habitat is noted in the SAC site synopsis as being well represented in the River Barrow and its tributaries. The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes
[4030] Dry Heath	The development site is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The SAC Conservation Objectives report notes that the spatial extent of this habitat is currently unmapped, but is indicated as occurring on steep, free-draining river valley sides. Dry heath is a terrestrial habitat, therefore a potential deterioration in water quality during construction works would not be anticipated to have a significant adverse impact upon this qualifying interest should it be present along the Powerstown or River Barrow. The proposed development is located within a dense urban environment and this habitat would not be expected to be present within the area.	No	No
[6430] Hydrophilous Tall Herb Communities	The development site is located outside the current known distribution but within the current range and favourable reference range of this qualifying interest (NPWS, 2019b). The SAC Conservation Objectives report notes that the distribution of this habitat within the SAC site is currently unknown, but is considered to occur at some riverside woodlands, river islands and in narrow bands along the floodplain of slow-flowing river stretches. This habitat was not observed within the proposed development boundary. Water quality is not listed as a conservation objective for this qualifying interest. It is therefore not anticipated that the development site would have the potential to adversely impact upon this qualifying interest.	No	No
[7220] Petrifying Springs*	The development site is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). The nearest example of this qualifying interest is located upstream on the River Nore (NPWS, 2011) approximately 31km southwest of the development site. Given the considerable hydrological distance and that it is on the River Nore, to which the proposed	No	No

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
	development is not directly hydrologically connected to, it is not anticipated that the development site would have direct or indirect negative impacts upon this qualifying interest.		
[91A0] Old Oak Woodlands	The development site is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). According to the SAC Conservation Objectives report, old oak woodlands are located approximately 24km south-east (25.5km hydrologically downstream near Graiguenamanagh. However, the report notes that further unsurveyed areas may be present within the SAC. Old oak woodlands are a terrestrial habitat, therefore a deterioration in water quality during construction works would not be anticipated to have a significant adverse impact upon this qualifying interest.	No	No
[91E0] Alluvial Forests*	The development site is located within the current distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019b). According to the SAC Conservation Objectives report, alluvial forests are located approximately 6.51m north-west and 1.3km hydrologically upstream of the development site. However, the report notes that further unsurveyed areas may be present within the SAC. A potential deterioration in water quality would not be anticipated to have a significant adverse impact upon this qualifying interest.	No	No
[1016] Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	The development site is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). According to the SAC Conservation Objectives report, the nearest record of Desmoulin's whorl snail is located approximately 22km (hydrologically) downstream of the development site near Borris. Water quality is not listed as a conservation objective for this qualifying interest, it is not anticipated that the development site would have the potential to adversely impact upon the Desmoulin's whorl snail.	No	No
[1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	The development site is located outside the current known distribution, current range and favourable reference range of the freshwater pearl mussel (NPWS, 2019c). The SAC Conservation Objectives report notes that the status of <i>Margaritifera margaritifera</i> as a qualifying interest for the site is currently under review, while <i>M.</i>	Yes	Yes

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
[1990] Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)	<i>m. durrovensis</i> is confined to a 15km (approximate) stretch of the River Nore, this is located above the tidal reach of the River Nore. The proposed development is located along the stretches of the River Barrow as opposed to the River Nore. The closes NBDC record for Freshwater Pearl Mussel is 23km west along the River Nore. The Conservation Objectives for this qualifying interest notes Salmonid fish are host to the larval form of freshwater pearl mussels. A deterioration in water quality could impact on Salmonid fish thereby impact on Freshwater Pearl Mussel.		
[1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	The development site is located within the current distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). The SAC Conservation Objectives report notes that crayfish are present almost throughout the SAC. According to the Conservation Objectives report, White-Clawed Crayfish have been recorded approximately 1.4km (hydrologically) downstream of development site. The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes
[1095] Sea Lamprey (<i>Petromyzon marinus</i>)	The development site is located outside the current known distribution, current range and favourable reference range of the Sea Lamprey (NPWS, 2019c). The SAC Conservation Objectives report notes that upstream migration may be inhibited by artificial barriers, and that artificial barriers are currently preventing juvenile lampreys from accessing the full extent of suitable habitat. Lamprey sp. were noted within the Fushoge Sub-Catchment approximately 9.2km (hydrologically) upstream and throughout the Barrow Catchment (Gordon et al, 2021). The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes
[1096] Brook Lamprey (<i>Lampetra planeri</i>)	The development site is located within the current known distribution, current range and favourable reference range of brook lamprey (NPWS, 2019c). River and brook lamprey are indistinguishable as larvae. Potentially located within the Powerstown watercourse approximately 15m north of development site. Lamprey sp. were noted further upstream on Fushoge Sub-Catchment approximately 9.2km (hydrologically) upstream and throughout the Barrow Catchment (Gordon et al, 2021). The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
[1099] River Lamprey (<i>Lampetra fluviatilis</i>)	The development site is located outside the current known distribution, current range and favourable reference range of river lamprey (NPWS, 2019c). River and brook lamprey are indistinguishable as larvae. Potentially located within the Powerstown watercourse approximately 15m north of development site. Lamprey sp. were noted further upstream on the Dinin Sub-Catchment approximately 9.2km (hydrologically) upstream and throughout the Barrow Catchment (Gordon et al, 2021). The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes
[1103] Twaite Shad (<i>Alosa fallax</i>)	The development site is located outside the current known distribution, current range and favourable reference range of the Twaite Shad (NPWS, 2019c). The nearest records for Twaite Shad are located approximately 31km south (48km hydrologically downstream) from the development site. Artificial barriers block twaite shads' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas.	No	No
[1106] Atlantic Salmon (<i>Salmo salar</i>)	The development site is located within the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). Potentially located within the Powerstown watercourse approximately 15m north of development site. Salmon were noted further upstream on the Fushoge Catchment approximately 9.2km (hydrologically) upstream and throughout the Barrow catchment (Gordon et al, 2021). The Conservation Objectives for this qualifying interest include water quality attributes.	Yes	Yes
[1355] Otter (<i>Lutra lutra</i>)	The development site is located within the current distribution, current range and favourable reference range of otter (NPWS, 2019c). Potentially located within the Palatine (Stream) approximately 4m west of development site. According to data from NBCD, otter have been recorded approximately 1km south of the development site. A significant impact on water quality could indirectly impact upon this qualifying interest by causing a reduction in prey populations and availability.	Yes	Yes
[6985] Killarney Fern (<i>Vandenboschis speciosa</i>)	The development site is located outside the current known distribution, current range and favourable reference range of this qualifying interest (NPWS, 2019c). According to the SAC Conservation Objectives report, the nearest record of Killarney fern to the development site is located approximately 35.5km (hydrologically) downstream (near Graiguenamanagh) of the development site. Water quality is not listed as a	No	No

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QUALIFYING INTEREST	LOCATION IN THE NATURA 2000 SITE RELATIVE TO APPLICATION SITE	POTENTIAL FOR IMPACTS FROM THE DEVELOPMENT	LISTED FOR FURTHER EXAMINATION IN APPENDIX B
	conservation objective for this qualifying interest. It is therefore not anticipated that the development site would have the potential to adversely impact upon this qualifying interest.		

APPENDIX B

QUALIFYING INTERESTS WITHIN THE PROJECT ZONE OF INTEREST

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CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
[3260] Floating River Vegetation	<ul style="list-style-type: none"> • Agricultural activities generating point source pollution to surface or ground waters. • Modification of hydrological flow. • Physical alteration of water bodies. • Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water. • Forestry activities generating pollution to surface or ground waters. • Pollution to surface or ground water due to urban runoffs. • Peat extraction. • Plants contaminated or abandoned industrial sites generating pollution to surface or ground water. • Abstraction from groundwater, surface water or mixed water. 	<p>A potential deterioration in Water Quality* could potentially impact on this habitat.</p> <p style="text-align: center;"><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Reversal/rehabilitation of hydro-morphological changes, including in-stream structures and catchment drainage impacts/restoration of hydrological regime. • Reducing pollution (with dissolved and/or particulate nutrients, humic substances, organic matter and fine sediment/turbidity) from agricultural, forestry, turf-cutting, and domestic and urban waste-water sources. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>
<p>[1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)</p> <p>[1990] Nore Freshwater Pearl Mussel (<i>Margaritifera durrovensis</i>)</p>	<ul style="list-style-type: none"> • Drainage for use as agricultural land. • Modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams). • Other modification of hydrological conditions for residential or recreational development. • Agricultural activities generating diffuse pollution to surface or ground waters. • Forestry activities generating pollution to surface or ground waters. • Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) 	<p>Freshwater Pearl Mussels are sensitive to sedimentation and nutrient enrichment. Furthermore, as the larval stages rely on salmonid fish hosts, any potential impact on salmonids can have an impact upon the Freshwater Pearl Mussel.</p> <p style="text-align: center;"><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Manage drainage and irrigation operations and infrastructures in agriculture. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site</p>

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CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
	<ul style="list-style-type: none"> generating pollution to surface or ground water. • Peat extraction. • Modification of flooding regimes, flood protection for residential or recreational development. • Hydropower (dams, weirs, run-off-the-river), including infrastructure. • Abstraction of ground and surface waters (including marine) for public water supply and recreational use. 	<ul style="list-style-type: none"> • Reduce diffuse pollution to surface or ground waters from agricultural activities. • Adapt mowing, grazing and other equivalent agricultural activities. • Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production. • Adapt/manage reforestation and forest regeneration. • Stop forest management and exploitation practices. • Adapt/change forest management and exploitation practices. • Manage drainage and irrigation operations and infrastructures. 	<p>that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>
<p>[1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>)</p>	<ul style="list-style-type: none"> • Plant and animal diseases, pathogens and pests. • Invasive alien species of Union concern 	<p>A potential deterioration in Water Quality* could potentially impact on this species.</p> <p><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Early detection and rapid eradication of invasive alien species of Union concern. • Controlling and eradicating plant and animal diseases, pathogens and pests. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or</p>

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CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
			drainage system that is hydrologically connected to the SAC.
[1095] Sea Lamprey (<i>Petromyzon marinus</i>)	<ul style="list-style-type: none"> • Hydropower (dams, weirs, run-off-the-river), including infrastructure. • Increases or changes in precipitation due to climate change. • Application of natural fertilisers on agricultural land. • Application of synthetic (mineral) fertilisers on agricultural land. • Drainage for use as agricultural land. • Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations. • Threats and pressures from outside the Member State. • Temperature changes (e.g. rise of temperature & extremes) due to climate change. • Droughts and decreases in precipitation due to climate change. 	<p>Sea lamprey may be adversely impacted upon by sedimentation and water pollution.</p> <p><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Reduce impact of hydropower operations and infrastructure. • Manage changes in hydrological and coastal systems and regimes for construction and development. • Any measure to reduce diffuse pollution to surface or ground waters from agricultural activities would benefit water quality in rivers. This would have a knock-on beneficial effect on sea lamprey during the freshwater spawning phase, when spawning grounds can experience substantial filamentous algal growth. 	No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.
[1096] Brook Lamprey (<i>Lampetra planeri</i>)	<ul style="list-style-type: none"> • Application of synthetic (mineral) fertilisers on agricultural land. • Drainage for use as agricultural land. • Clear-cutting, removal of all trees. • Hydropower (dams, weirs, run-off-the-river), including infrastructure. 	<p>Brook lamprey may be adversely impacted upon by sedimentation and water pollution.</p> <p><u>Key Conservation Measures</u></p>	No potential for a significant impact on water quality as there is no potential for significant

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CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW

CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
	<ul style="list-style-type: none"> • Pollution to surface or ground water due to urban runoffs. • Discharge of urban wastewater (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water. • Temperature changes (e.g. rise of temperature & extremes) due to climate change. • Droughts and decreases in precipitation due to climate change. 	<ul style="list-style-type: none"> • Diffuse and point source pollution may be having localised impacts on populations of <i>L. planeri</i>. There has been a 3% reduction in river water quality in the national territory since 2015 (EPA, 2018) and the main sources of nutrient inputs are agriculture (slurry and chemical fertilisers) and sewage (waste water treatment plants). 	<p>groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>
<p>[1099] River Lamprey (<i>Lampetra fluviatilis</i>)</p>	<ul style="list-style-type: none"> • Hydropower (dams, weirs, run-off-the-river), including infrastructure. • Increases or changes in precipitation due to climate change. • Application of natural fertilisers on agricultural land. • Application of synthetic (mineral) fertilisers on agricultural land. • Drainage for use as agricultural land. • Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging). • Temperature changes (e.g. rise of temperature & extremes) due to climate change. • Droughts and decreases in precipitation due to climate change. 	<p>River lamprey may be adversely impacted upon by sedimentation and water pollution.</p> <p><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Reduce impact of hydropower operations and infrastructure. • Manage changes in hydrological and coastal systems and regimes for construction and development. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>

APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW

CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
<p>[1106] Atlantic Salmon (<i>Salmo salar</i>)</p>	<ul style="list-style-type: none"> • Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations. • Freshwater fish and shellfish harvesting (recreational). • Bycatch and incidental killing (due to fishing and hunting activities). • Other invasive alien species (other than species of Union concern). • Temperature changes (e.g. rise of temperature & extremes) due to climate change. • Droughts and decreases in precipitation due to climate change. 	<p>Salmon, particularly juveniles and spawning beds, are sensitive to sedimentation and water pollution. A potential deterioration in Water Quality* could impact on this species.</p> <p><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • Manage the use of natural fertilisers and chemicals in agricultural (plant and animal) production. • Reduce/eliminate point pollution to surface or ground waters from agricultural activities. • Reduce diffuse pollution to surface or ground waters from agricultural activities. • Adapt/change forest management and exploitation practices. • Reduce diffuse pollution to surface or ground waters from forestry activities. • Management of professional /commercial fishing (including shellfish and seaweed harvesting). • Management of hunting, recreational fishing and recreational or commercial harvesting or collection of plants. • Control/eradication of illegal killing, fishing and harvesting. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>

APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW

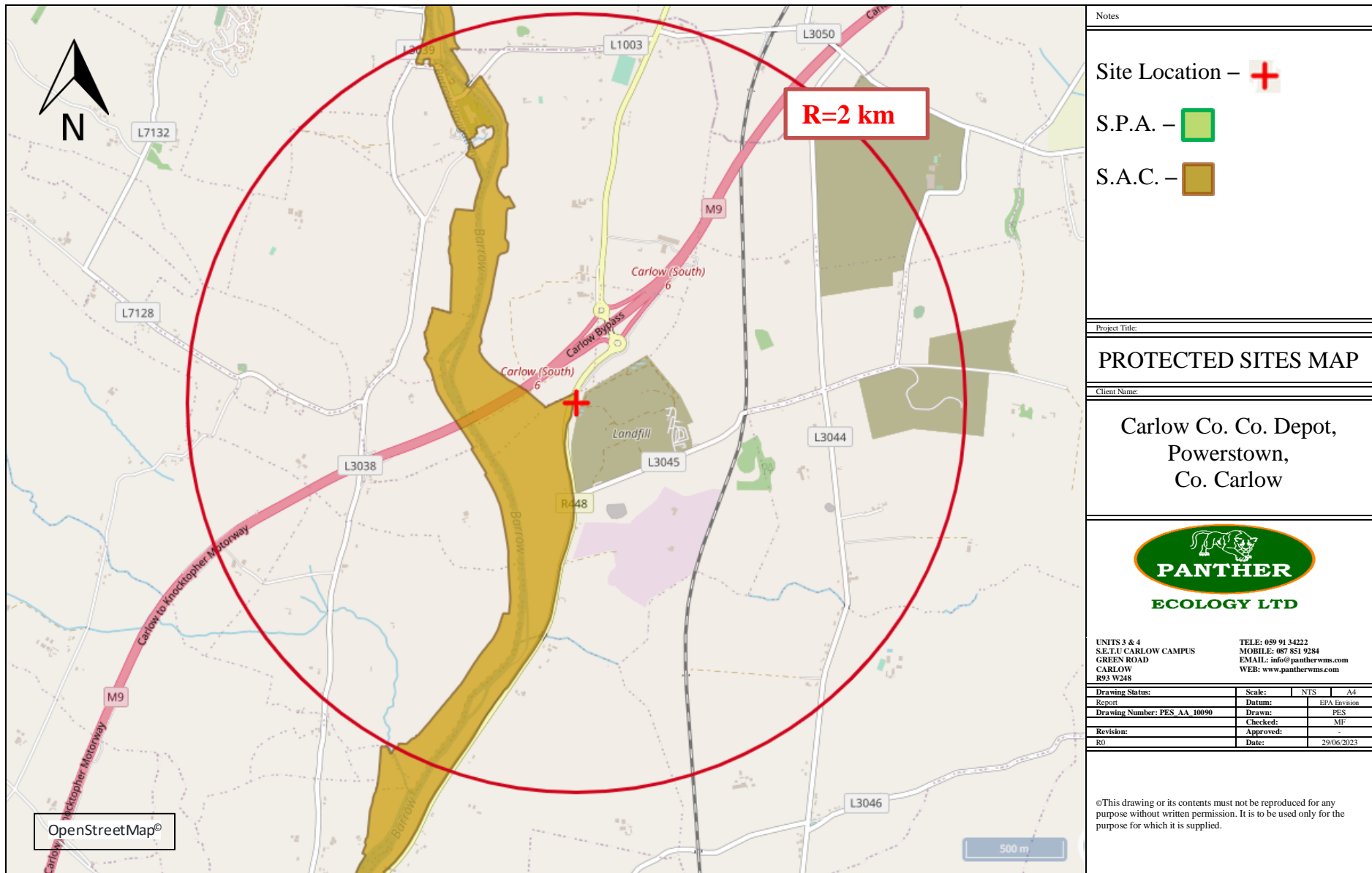
CONSERVATION OBJECTIVES (NPWS 2011)	THREATS AND PRESSURES (NPWS 2019)	KEY ENVIRONMENTAL CONDITIONS	POTENTIAL IMPACTS FROM THE DEVELOPMENT
		<ul style="list-style-type: none"> • Manage water abstraction for public supply and for industrial and commercial use. • Support conservation measures in countries outside the EU. 	
[1355] Otter (<i>Lutra lutra</i>)	None listed	<p>A significant impact on water quality could indirectly impact upon this qualifying interest by causing a reduction in prey populations and availability.</p> <p style="text-align: center;"><u>Key Conservation Measures</u></p> <ul style="list-style-type: none"> • The network of mammal underpasses on new roads are examples of positive measures that have been taken to reduce otter roadkill. • Diffuse and point-source pollution of freshwaters and coastal waters is likely to impact otters indirectly through changes to prey abundance. 	<p>No potential for a significant impact on water quality as there is no potential for significant groundwater contamination or significant runoff (sediments or hydrocarbons) from the development site that would enter any watercourse or drainage system that is hydrologically connected to the SAC.</p>

* See Table 5.1 for Water Quality Targets set in Conservation Objectives

APPENDIX C

PROTECTED SITES AND SITE LOCATION

**APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW**



Notes

Site Location –

S.P.A. –

S.A.C. –

Project Title:
PROTECTED SITES MAP

Client Name:
**Carlow Co. Co. Depot,
Powerstown,
Co. Carlow**



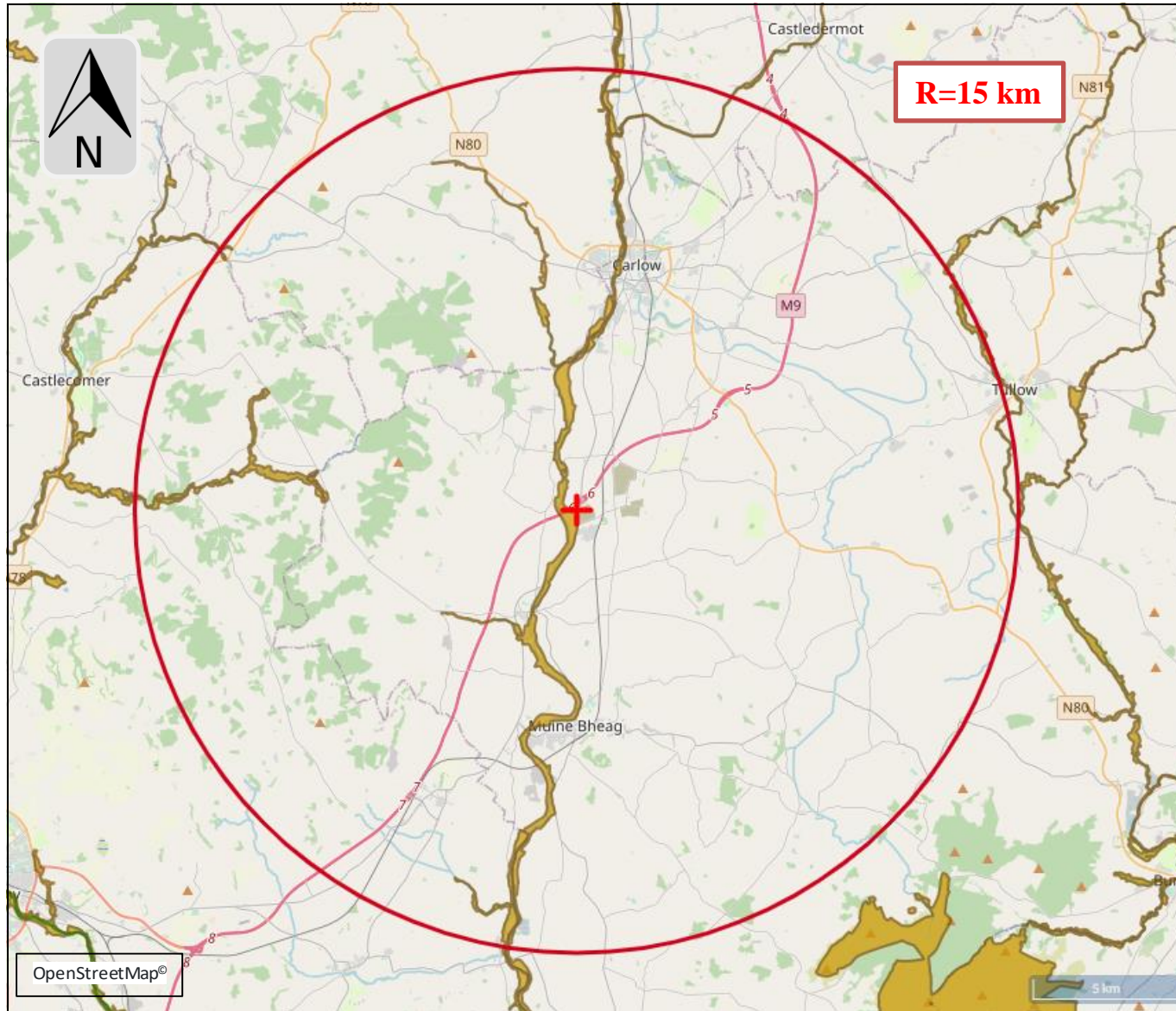
UNITS 3 & 4
S.E.T.U CARLOW CAMPUS
GREEN ROAD
CARLOW
R93 W248


TELE: 059 91 34222
MOBILE: 087 851 9284
EMAIL: info@pantherwms.com
WEB: www.pantherwms.com

Drawing Status:	Scale:	NTS	A4
Report:	Datum:	EPA Envisio	
Drawing Number: PES_AA_10090	Drawn:	PES	
Revision:	Checked:	MF	
R0	Approved:	-	
	Date:	29/06/2023	

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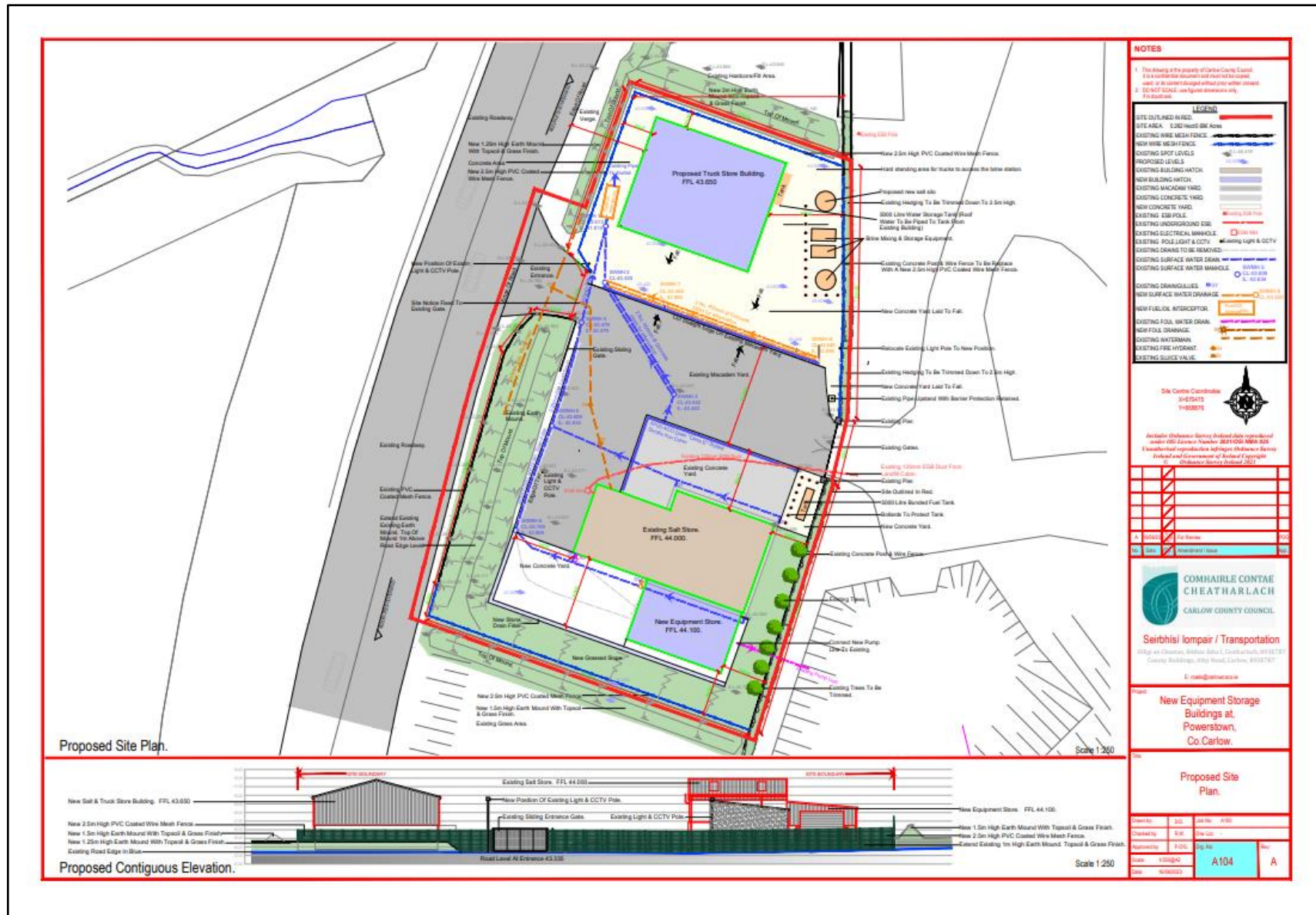
**APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW**



Notes			
Site Location – +			
S.P.A. – ■			
S.A.C. – ■			
Project Title:			
PROTECTED SITES MAP			
Client Name:			
Carlow Co. Co. Depot, Powerstown, Co. Carlow			
			
UNITS 3 & 4 S.E.T.U. CARLOW CAMPUS GREEN ROAD CARLOW R93 W248		TELE: 059 91 34222 MOBILE: 087 851 9284 EMAIL: info@pantherwms.com WEB: www.pantherwms.com	
Drawing Status:	Scale:	NTS	A4
Report	Datum:	EPA Emission	
Drawing Number: PES_AA_10090	Drawn:	PES	
	Checked:	MF	
Revision:	Approved:		
RD	Date:	29/06/2023	
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APPROPRIATE ASSESSMENT SCREENING REPORT

CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW



NOTES

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- DO NOT SCALE. See figure dimensions only.
- For details.

LEGEND

- SITE OUTLINED IN RED.
- SITE AREA: 6,260 m² (261,816 sq ft)
- EXISTING WIRE MESH FENCE
- NEW WIRE MESH FENCE
- EXISTING SPOT LEVELS
- PROPOSED LEVELS
- EXISTING BUILDING HATCH
- NEW BUILDING HATCH
- EXISTING MACADAM YARD
- EXISTING CONCRETE YARD
- NEW CONCRETE YARD
- EXISTING 6.8M POLE
- EXISTING UNDERGROUND DB
- EXISTING ELECTRICAL MANHOLE
- EXISTING POLE LIGHT & CCTV
- EXISTING DRAINS TO BE REMOVED
- EXISTING SURFACE WATER DRAIN
- EXISTING SURFACE WATER MANHOLE
- EXISTING DRAINING ALLEYS
- NEW SURFACE WATER DRAINAGE
- NEW FUEL/OIL INTERCEPTOR
- EXISTING FUEL WATER DRAIN
- EXISTING FUEL DRAINAGE
- EXISTING WATERMAIN
- EXISTING FIRE HYDRANT
- EXISTING GULLY VALVE

Site Centre Coordinates
 X=1074315
 Y=688715

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No.	Description	Rev.
A	000001	For Review
B	000002	Amendments Issues

COMHAIRLE CONTAE CHEATHARLACH
 CARLOW COUNTY COUNCIL

Seirbhís Iompar / Transportation
 100, an Chomairle, Bóthar An t-Úr, Carlow, CO. CARLOW, R93 BT73
 County Buildings, 30-32, New Road, Carlow, R93 BT73
 E: com@comcarlow.ie

New Equipment Storage Buildings at Powerstown, Co. Carlow.

Proposed Site Plan.

Sheet No.	Scale	Sheet No.	Scale
001	1:100	A101	1:100
002	1:100	A102	1:100
003	1:100	A103	1:100
004	1:100	A104	1:100
005	1:100	A105	1:100

APPENDIX D

PHOTO LOG

**APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW**



Plate 1: Existing site entrance



Plate 2: Buildings and artificial surfaces (BL3)



Plate 3: Dry meadows and grassy verges (GS2)



Plate 4: Scrub (WS1)

Notes:

**APPENDIX D
PHOTO LOG**



UNITS 3 & 4
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GREEN ROAD
CARLOW

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file	location:	scale:	N/A	A4
drawing	status:	REPORT	datum:	N/A
			drawn:	PES
drawing no.	rev	checked:	MF	
AA_10090	A	approved:	-	
		date:	27/06/2023	

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APPROPRIATE ASSESSMENT SCREENING REPORT
CARLOW COUNTY COUNCIL DEPOT, POWERSTOWN, CO. CARLOW



Plate 5: Recolonising bare ground (ED3)



Plate 6: Hedgerow/treeline (WL1/WL2) habitat

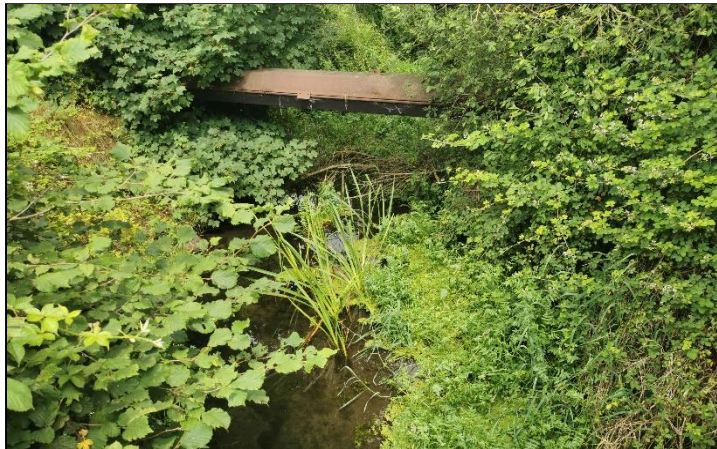


Plate 7: Depositing/lowland river (FW2)



Plate 8: Ornamental/non-native shrub (WS3)

Notes:

APPENDIX D
PHOTO LOG



UNITS 3 & 4
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		drawn:	PES
drawing no.	rev	checked:	MF
AA_10090	A	approved:	-
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