



# Appropriate Assessment of the Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area 2012-2018

Comprising the Carlow Town Development Plan, Graiguecullen Local Area Plan and Carlow Town Environs Local Area Plan

## DOCUMENT CONTROL SHEET

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## 1 INTRODUCTION

RPS were commissioned by Carlow Local Authorities and Laois County Council to undertake an “Appropriate Assessment” of the Joint Spatial Plan for the Greater Carlow – Graiguecullen Urban Area 2012-2018, as prepared by Carlow Local Authorities and Laois Local County Council Forward Planning Sections. This report details the assessment of:

- The Carlow Town Development Plan 2012-2018, including areas common to the Joint Spatial Plan for the Greater Carlow – Graiguecullen Urban Area 2012-2018.
- Carlow Town Environs Local Area Plan 2012-2018.
- Graiguecullen Local Area Plan 2012-2018.

This document outlines the Appropriate Assessment process, which by its nature is an iterative process undertaken at each stage of the Plan making process, commencing with an assessment on the draft versions of the various plans, feeding the development of the plans objectives and policies and through to the amendments stage and final versions of the plans. This has led to the production of this process document and as such it may include references to a particular Plan as being ‘Draft’.

### 1.1 APPROPRIATE ASSESSMENT OF NATURA 2000 SITES

Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna, known as “The Habitats Directive”, states that any plan or project likely to have significant effects on a Natura 2000 site must undergo the process of Appropriate Assessment.

An Appropriate Assessment (AA) is an assessment of the potential effects of a proposed plan, on its own or in combination with other plans or projects, on one or more Natura 2000 sites (Special Protection Areas (SPA) for birds, and Special Areas of Conservation (SAC) for habitats and species). The findings of the AA must be taken into account by the competent authorities (in this case Carlow and Laois County Councils) in reaching its decision to authorise the Joint Spatial Plan. Proposed plans or projects can only be approved if it has been ascertained that they will not adversely affect the integrity of the Natura 2000 site(s) concerned or, in the case of a negative assessment where there are no alternative solutions, the scheme can only be approved for reasons of overriding public interest. A final statement on whether or not the Joint Spatial Plan, on its own or in combination with other plans or projects, will affect the integrity of Natura 2000 sites is also required, prior to adoption of the plan.

The river Barrow, which flows through the Greater Carlow Graiguecullen Urban Area is part of a protected European site known as a Special Area of Conservation (SAC); other SACs are

located in the wider area. Article 6[3] of the Habitats Directive requires that Plans likely to have a significant effect on a European protected site be subject to an Appropriate Assessment (also known as a Natura Impact Assessment). This assessment process examines what potential effects the Plan may have on the conservation status of European sites. The AA process is carried out in parallel with the plan-making process.

## 1.2 OBJECTIVES OF APPROPRIATE ASSESSMENT

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures to be addressed in the AA process. Objectives of conducting an appropriate assessment of any plan includes:

- Avoid any negative impacts on Natura 2000 sites by identifying possible impacts early in plan making, and writing the plan in order to avoid such impacts.
- Apply mitigation measures during the AA process to the point where no adverse impacts on the site(s) remain.
- Under a worst-case scenario, a plan may have to undergo an assessment of alternative solutions. Under this stage of the assessment, compensatory measures are required for any remaining adverse effects but they are permitted only if (a) there are no alternative solutions and (b) the plan is required for imperative reasons of overriding public interest.

## 1.3 RELATIONSHIP TO STRATEGIC ENVIRONMENTAL ASSESSMENT

The AA process specifically aims to ensure that the plan will not have an adverse effect on the integrity of a Natura 2000 Sites (SAC & SPA), whereas the objectives of the Strategic Environmental Assessment (SEA) are broader as they aim to ensure land-use plans contribute to sustainable development by integrating social, environmental and economic considerations into the plan preparation. A comparison between the AA and SEA process is set out in Table 1.1.

**Table 1.1 Comparisons of AA and SEA**

	<b>APPROPRIATE ASSESSMENT</b>	<b>STRATEGIC ENVIRONMENTAL ASSESSMENT</b>
<b>Aim of process</b>	<i>Maintain the integrity o the Natura 2000 network and its features: SPA for birds, cSAC for habitats and species</i>	<i>Provide for a high level of protection of the environment</i>
<b>Emphasis</b>	<i>Prevent activities that could harm Natura 2000 sites. The assessment is "Protection led" .</i>	<i>Provide information on environmental impacts, consultation, documenting decisions. Assessment is "Baseline led" .</i>
<b>Detail</b>	<i>Detailed focus on a specific sites</i>	<i>Focus on the environment „ rebalancing in favour of the environment“</i>

#### **1.4 JOINT SPATIAL PLAN FOR GREATER CARLOW CRAIGUECULLEN URBAN AREA**

A Joint Spatial Plan is a unitary strategy document containing objectives, policies, development standards, zonings and illustrative maps. It is used to steer development, manage change and may also be used as a rationale for funding applications for infrastructural projects or community projects. The Joint Spatial Plan for Greater Carlow Graiguecullen is concerned with charting the future built, environmental, social and economic development within the Greater Carlow Graiguecullen Urban Area. It provides a detailed framework for the management and regulation of spatial development and use of land. Its goal is to retain the unique and special character of the Greater Urban Area, while also fostering positive change and good development. It is concerned with steering development so that it contributes positively to social, economic and environmental well-being, prioritizing changes that are needed and identifying opportunities to enhance the Greater Carlow Graiguecullen Urban Area and the available quality of life. The Joint Spatial Plan is made up of the Carlow Town Development Plan; The Graiguecullen Local Area Plan, and; the Carlow Town Environs Local Area Plan.

The Joint Spatial Plan was put before Carlow Town Council, Laois County Council and Carlow County Council for adoption. The Joint Spatial Plan constitutes a Development Plan for Carlow Town and Local Area Plans for Graiguecullen, and Carlow Town Environs. The relevant land areas associated with these three land-use plans are outlined in Fig. 1.2. The development of the Joint Spatial plan-making and the local area plan-making process were run in parallel along with the related environmental reports (SEA, AA) in order to satisfy the related legislative requirements under the Planning and Development Act 2000-2010. No changes to the administrative boundaries were proposed; however in the interests of strategic planning, efficiency and customer service, the Joint Spatial Plan will be prepared in a collaborative manner.

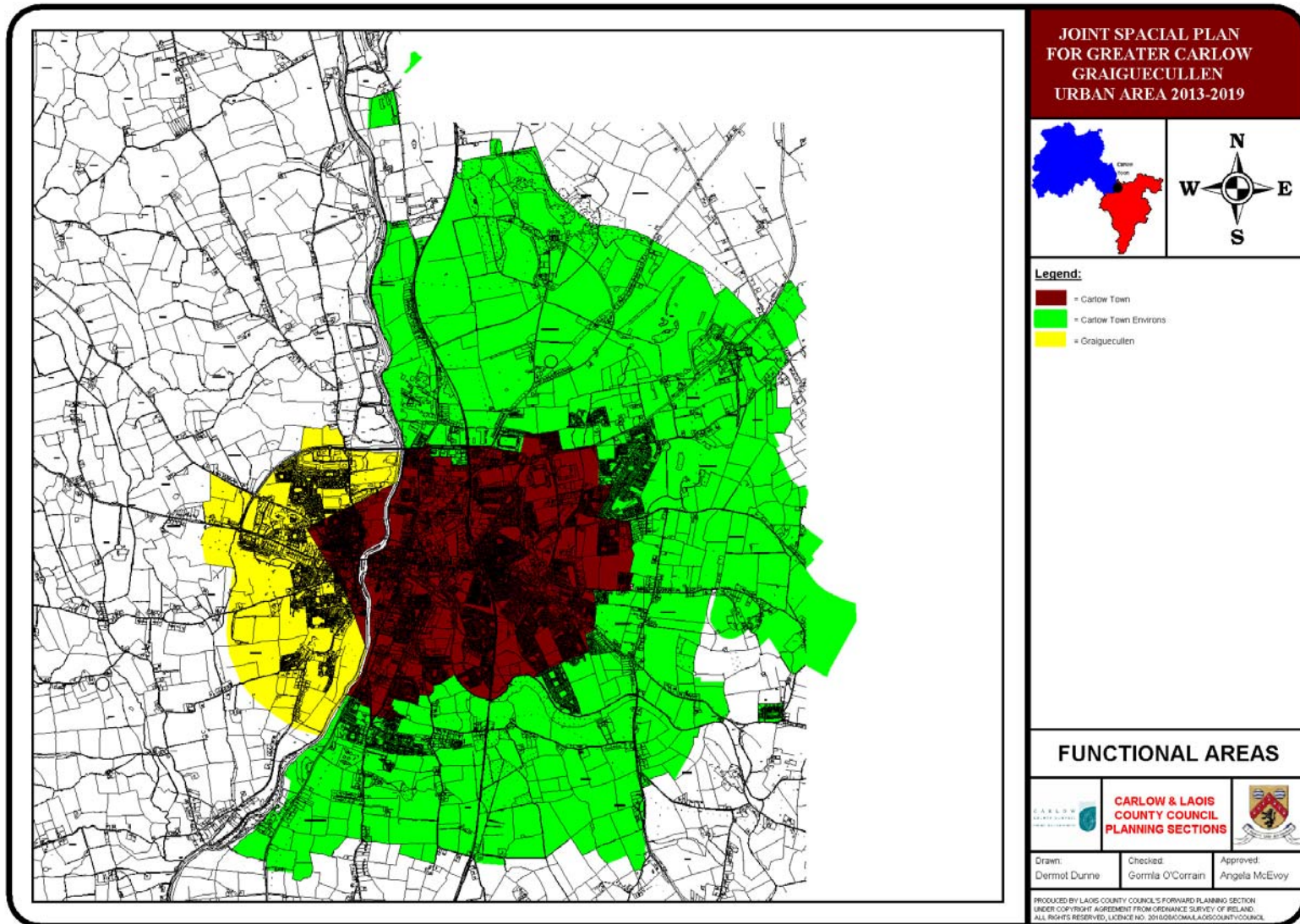


Fig. 1.2 Map of Land Area covered by current Carlow Town Development Plan 2009-2015, Graiguecullen Local Area Plan 2007-2013 and Carlow Town Environs 2008-2014



## 2 REQUIREMENTS OF HABITATS DIRECTIVE ASSESSMENT

### 2.1 LEGISLATIVE REQUIREMENTS

The proposal is not directly connected with, or necessary to, the conservation management of any Natura 2000 Sites and therefore, an Appropriate Assessment of the Joint Spatial Plan is required to be undertaken to ensure compliance with the Habitats Directive. The Habitats Directive provides legal protection for habitats and species of European importance. The main aim of the Habitats Directive is “to contribute towards ensuring biodiversity through the conservation of natural habitats of wild fauna and flora in the European territory of the Member States to which the treaty applies” (92/43/EEC). Actions taken in order to fulfil the Directive must be designed to “maintain or restore, at a favourable conservation status, natural habitats and species of wild fauna and flora of Community interest” (92/43/EEC).

The Directive provides for the creation of protected sites, SACs, for a number of habitat types and certain species of flora and fauna. The Directive also seeks to establish Natura 2000, a network of protected areas throughout Europe. SACs, together with SPAs designated under the Birds Directive (79/409/EEC), form the Natura 2000 network. The Directive was incorporated into Irish law by the European Communities (Natural Habitats) Regulations (S.I. No. 94 of 1997) under Regulation 31 (Annex 1.2).

An assessment is required under the Habitats Directive for any plan or project likely to have significant effect on a Natura 2000 site. Article 6, paragraphs 3 and 4 of the Habitats Directive state as follows:

*6(3) 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.*

*6(4) If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure*

*that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

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

This means that, where the implementation of a proposed plan is likely to have a significant effect on a Natura 2000 site, the Competent Authority must ensure that an appropriate assessment is carried out in view of that site's conservation objectives. The proposed plan can only be approved if it has been ascertained that it will not adversely affect the integrity of the Natura 2000 sites concerned or, in the case of a negative assessment and where there are no alternative solutions, the scheme can only be approved for reasons of overriding public interest.

## **2.2 APPROPRIATE ASSESSMENT (AA) GUIDANCE**

This appropriate assessment of the Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area has been carried out using the following guidance:

- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on *Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities* March 2010.
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*, Department of the Environment, Heritage and Local Government 2009; <http://www.npws.ie/en/media/NPWS/Publications/CodesofPractice/AA%20Guidance.pdf>
- *Managing Natura 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC*, European Commission 2000; [http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision\\_of\\_art6\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf)
- *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*; [http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura\\_2000\\_assess\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf)
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission.

[http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance\\_art6\\_4\\_en.pdf](http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf)

- Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging. [http://ec.europa.eu/environment/nature/natura2000/management/docs/guidance\\_doc](http://ec.europa.eu/environment/nature/natura2000/management/docs/guidance_doc)

### **2.3 APPROPRIATE ASSESSMENT CONSULTATION**

Consultation letters were sent to the National Parks & Wildlife Service (NPWS) and Inland Fisheries Ireland as part of the AA process. In addition, a meeting was held with the relevant staff members involved in the drafting of the Freshwater Pearl Mussel Sub-Basin Management Plans with NPWS relating to the Nore and Dereen catchments.

Finally consultation with the team involved in the with the drafting of the Joint Spatial Plan was ongoing at every stage of plan development, in particular during the development of objectives and policies contained in the plan as the outcome of the Appropriate Assessment guided development of the objectives and policies.

### 3 METHODOLOGY

Based on the guidelines outlined in Section 2.2, the assessment process is a four-staged approach as described below. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

#### **Stage 1            *Screening for Appropriate Assessment***

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of the Habitats Directive:

- i) whether a plan or project is directly connected to or necessary for the management of the site, and
- ii) whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site.

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.

#### **Stage 2            *Appropriate Assessment***

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 4, or the plan or project should be abandoned.

#### **Stage 3            *Alternative Solutions***

This stage examines any alternative solutions or options that could enable the plan or project to proceed without adverse effects on the integrity of a Natura 2000 site. The process must return to Stage 2 as alternatives will require appropriate assessment in order to proceed. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least damaging option has been selected, it is necessary to progress to Stage 4.

#### **Stage 4            *Imperative Reasons of Overriding Public Interest (IROPI)/Derogation***

Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a Natura 2000 site to proceed in cases where it has been established that no less damaging alternative solution exists. Compensatory measures must be proposed and assessed. The Commission must be informed of the compensatory measures. Compensatory measures must be practical, implementable, likely to succeed, proportionate and enforceable, and they must be approved by the Minister.

## **4 APPROPRIATE ASSESSMENT SCREENING APPRAISAL OF THE JOINT SPATIAL PLAN**

### **4.1 STAGE 1 – SCREENING**

Screening is a review of all Natura 2000 sites within a study area that could potentially be subjected to impacts associated with the plan. The screening stage involves the following:

- Identification of Site Location & Assessment Area
- Description of plan or project, and local site or plan area characteristics.
- Identification of relevant Natura 2000 sites and compilation of information on their qualifying interests.
- Assessment of likely effects – direct, indirect and cumulative.
- Screening conclusions including recommendations whether or not to undertake Stage II of Appropriate Assessment.

#### **4.1.1 Site Location & Assessment Area included in AA**

Carlow town is located 80km from Dublin with nine daily train services and numerous bus services to and from the capital. It is also within easy reach of other mid-sized towns in the Midlands and South East, 40 minutes from Portlaoise, 30 minutes from Kilkenny, 45 minutes from Enniscorthy. Wexford Town and Waterford City are approximately one hour's drive from the town, with Rosslare Port and Waterford Airport located beyond. The Greater Carlow Graiguecullen Urban Area is an important County Town in the South East Region and is the principal centre of economic activity in County Carlow, as outlined in Fig. 1.2. It is an inland town sited on low-lying land, straddling the large River Barrow and a smaller watercourse, the River Burrin and located to the east of the Castlecomer Plateau. The Greater Carlow Graiguecullen Urban Area extends into Laois and is also located close to the Kildare and Kilkenny county bounds; the functional hinterland of the Greater Urban Area extends into these adjoining counties.

In addition to the Greater Carlow Graiguecullen area, a 15km buffer surrounding the urban area was also included in the Appropriate Assessment, as a precautionary approach, in line with best practice and guidance issued by the NPWS. The total assessment area is outlined in Fig. 4.1.

#### **4.1.2 Brief Description of the Joint Spatial Plan**

The Joint Spatial Plan is a wide-ranging policy statement dealing with issues such as population and settlement patterns, economic and employment trends, retail, commercial and industrial development; education, healthcare and community facilities; environmental management and heritage protection, infrastructure including transportation, energy and communications; waste water treatment and water supply. Planning has a critical role in

pulling together the various strands of economic development, social inclusion and environmental protection which are essential to sustainable development and the creation of sustainable communities.

The Core Strategy of the Draft Joint Spatial Plan sets out the Councils' vision and strategy for the proper planning and sustainable development of the Greater Carlow Graiguecullen Urban Area. It contains the cross-cutting core objectives that underpin the Joint Spatial Plan, as well as core aims which headline each thematic chapter. The collaborative involvement of three planning authorities in the preparation of this Draft Plan is significant. The Draft Joint Spatial Plan comprising the Carlow Town Development Plan, Graiguecullen and Carlow Town Environs Local Area Plans and has been prepared jointly by Carlow Town Council, Laois County Council and Carlow County Council. The joint approach emphasizes the unitary functioning of the Greater Urban Area instead of the traditional focus on administrative areas. It lends itself to the preparation of a single coordinated development strategy which plays to the strengths of the composite areas and takes account of their environmental sensitivities. In addition, a joint approach lends itself to more integrated, effective and measurable evaluation of the environmental effects of implementing planning policy in the Greater Carlow Graiguecullen Urban Area.

The Joint Spatial Plan is more firmly grounded in national and regional policies than preceding planning policy documents due to changes in Planning and Development (Amendment) Act 2010. The preparation of a Core Strategy set out in Part 2 of the Plan is a new legislative requirement and the following principles make up the core development strategy:

- Consolidate urban area and provide for retail hierarchy including town centre, district centres and neighbourhood centres in the interest of ensuring the vitality and vibrancy of the town centre.
- Deliver development that supports sustainable modes of transport.
- Advance key opportunity sites by preparing development briefs or urban design framework plans.
- Consolidate enterprise and employment development, directing to serviced lands and brown field sites in the interests of efficient use of resources and sustainable transport.
- Consolidate residential development by adopting sequential approach and in light of reduced housing land requirement under 2010 Act and in order to provide for sustainable transport.
- Allocate remaining land to strategic reserve rather than rezoning so that development land may be re-visited as part of the review process relating to the Joint Spatial Plan.

Part 4.1 of the Joint Spatial Plan details objectives and policies relevant for Carlow town, Part 4.2 outlines the objectives and policies relevant for Graiguecullen (Co. Laois) and Part 4.2 outlines the objectives and policies relevant for Carlow town environs.

In order to actualise this vision for the Greater Carlow-Graiguecullen Area, the following cross-cutting core objectives and thematic core aims are outlined in the report:

- Policies from the Southern Development Area (SDA) of the Midlands Regional Settlement Hierarchy relevant to the Joint Spatial Plan (SDA P2- P9);
- Cross-cutting Core Objectives of the Joint Spatial Plan (CO1 to CO15);
- Thematic Core Aims of the Joint Spatial Plan (CA1 to CA11);
- Economic Development and Inward Investment Objectives (ECNO01 to ECNO09);
- Industry and Enterprise Policies of the Joint Spatial Plan (ECN P01 to ECN P10);
- Retail Policies (ECN P11 to ECN P14);
- Commercial Services Policies (ECN P15 to ECN P16 (A));
- Tourism Policies (ECN P17 to ECN P24);
- Public Sector Employment Policy (ECN P25);
- Home-based Economic Activities Policy (ECN P26);
- Live Work Unit Policy (ECN P27);
- Transport Objectives (TRANS O01 to TRANS O07);
- Strategic Transport Policies (TRANS P01 to TRANS P45);
- Physical Infrastructure Objectives (PI O01 to PI O04);
- Physical Infrastructure Policies (PI P01 to PI P31);
- Environmental Management Objectives (ENV O01 to ENV O09);
- Environmental Management Policies (ENV P01 to ENV P53);
- Education and Skills Objectives (E&S O01 to E&S O06);
- Education and Skills Policies (E&S P01 to E&S P06);
- Recreational Amenity and Open Space Objectives (REC O01 to REC O07);
- Recreational Amenity and Open Space Policies (REC P01 to REC P31);
- Sustainable Communities and Social Inclusion Objectives (SOC O01 to SOC O05);
- Sustainable Communities and Social Inclusion Policies (SOC P01 to SOC P33);
- Housing Policies (HOUS P01 to HOUS P25);
- Natural and Built heritage Objectives (HER O01 to HER O14);
- Natural and Built heritage Objectives (HER P01 to HER P43);
- Urban Design and Built Form Objectives (DBF O01 to DBF O09);
- Urban Design and Built Form Policies (DBF P01 to DBF P29);

In relation to the Sub Area Spatial Strategy for i) Carlow Town; ii) Carlow Town Environs, and; iii) Graiguecullen (County Laois),

- Sub Area Spatial Strategy (Carlow Town) Objectives (CTO1 to CTO6) ;
- Sub Area Spatial Strategy (Carlow Town) Policies (CTP1 to CT33);
- Sub Area Spatial Strategy (Graiguecullen, County Laois) Objectives (GL 01 to GL 04);
- Sub Area Spatial Strategy (Graiguecullen, County Laois) Policies (GL P1 to GL P14);
- Sub Area Spatial Strategy (Carlow Town Environs) Objectives (CTE 01 to CTE 05);
- Sub Area Spatial Strategy (Carlow Town Environs) Policies (CTE P01 to CTE P12);

Each of the Policies, Core Objectives, Section Policy and Objectives, Sub Area Spatial Strategy Objectives and Policies were individually assessed as well as the in-combination effects of such Policies and Objectives, to identify any potential impacts to Natura 2000 sites.

#### **4.1.3 Identification of Relevant Natura 2000 Sites**

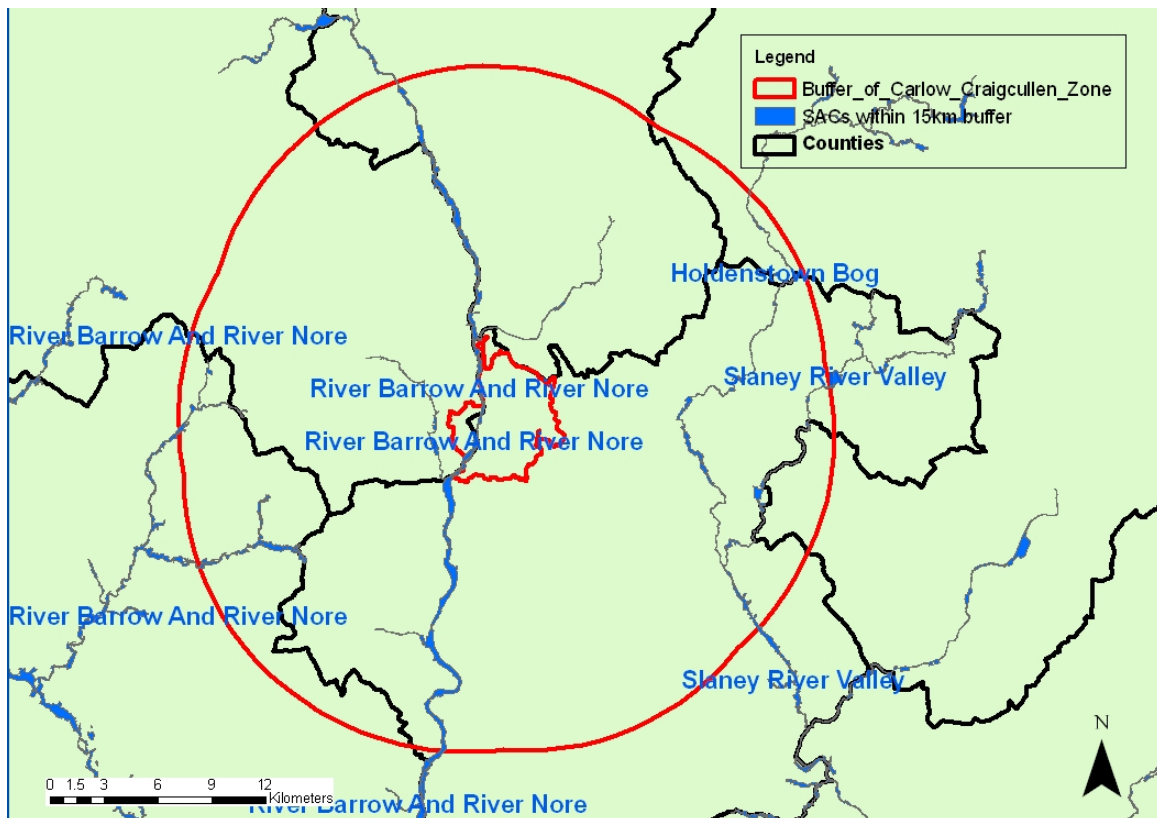
The next step of the Appropriate Assessment Screening Process is to identify the Natura 2000 sites potentially affected by the Joint Spatial Plan. The Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as 'qualifying interests' and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A 'qualifying interest' is one of the factors (such as the species or habitat that is present) for which the site merits designation.

Three Natura 2000 sites are located within a precautionary distance of 15 kilometres of the land area covered by the joint spatial plan, including:

- Site Code 000781 Slaney River valley SAC
- Site Code 001757 Holdenstown Bog SAC
- Site Code 002162 River Barrow And River Nore SAC

The location of the Natura 2000 sites relative to the assessment area is illustrated in Fig. 4.1 and details in relation to the qualifying features of the SAC and SPA are described in Table 4.1. The information contained in this table is based on the findings in Ireland's Article 17 Report to the European Commission '*The Status of EU Protected Habitats and Species in Ireland*' (NPWS, 2008). The background documents associated with this report provides the first assessment of the status of the habitats and species that Ireland is required to protect under the Habitats Directive.





**Fig. 4.1** Natura 2000 sites within the assessment area (15km buffer) of the Greater Carlow Graiguecullen Urban Area

A summary of the Site Interest; Conservation Status and Potential Threats are outlined in Table 4.1 for each of the three relevant Natura 2000 sites. A more detailed NPWS site synopsis for each of the three sites is outlined in **Appendix A**, along with the detailed conservation objectives for each of the 3 sites. The conservation objectives for the sites were taken from the July 2011 drafts available on the NPWS website (<http://www.npws.ie>).

In addition to undertaking screening with 25km buffer of the plan area as outlined in best practice guidance, other important SACs in the region were also identified for their relevance to the plan area. For example, the SACs associated with the Freshwater Pearl Mussel catchments of the Nore and Dereen were included in screening. However, as there is no hydrological connection nor any possible pathway between the Freshwater Pearl Mussel catchments and the plan area, both these SACs were initially screened. Following cross-reference of the relevant sub-basin management plans and also following consultation with appropriate scientific staff involved in the drafting of the relevant sub-basin management plans with NPWS, the SACs associated with the Dereen and Nore sub-basin management plans were not deemed relevant to this Appropriate Assessment and therefore are not included further in the assessment.

**Table. 4.1 Description of Natura 2000 Sites Occurring Within the 15km Buffer Zone**

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
Site Code 781-Slaney River Valley SAC	The Greater Carlow Graiguecullen Urban Area is located 9 km from the SAC.	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>	Surface and groundwater dependent. Highly sensitive to hydrological changes. Sensitive to changes in management.	Bad	The area of this habitat has declined throughout Ireland. The main threats include sub-optimal grazing regimes, drainage, alien invasive species together with the fragmentation of its habitat for agriculture and/or felling for timber.
		Estuaries	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Sensitive to changes in salinity and tidal regime as well as coastal development	Poor	The main threats to this habitat relate to impacts arising from aquaculture, fishing, coastal development and water pollution
		Mudflats and sandflats not covered by seawater at low tide.	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Sensitive to changes in salinity and tidal regime as well as coastal development	Poor	The main serious threats to this habitat arise from aquaculture, fishing, bait dredging, and removal of fauna. Reclamation of land, coastal protection works and invasive species, particularly cord-grass. In addition, there is some concern over the potential impact that hard coastal defence structures may have, in combination with sea-level rise, for the long term extent of this habitat.
		Watercourses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation	Surface and groundwater dependent. Highly sensitive to hydrological changes. Highly sensitive to pollution.	Bad	The main threats include: eutrophication, overgrazing, excessive fertilisation, afforestation, and the introduction of invasive alien species.

<sup>1</sup> <http://www.npws.ie/en/PublicationsLiterature/ConservationStatusReport/>

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
		Old sessile oak woods with Ilex and Blechnum in British Isles	Sensitive to changes in management.	Bad	The main threats to this habitat include the invasion of alien species and sub-optimal overgrazing.
		Freshwater Pearl Mussel	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.	Bad	The principal threat to this species is poor substrate quality due to increased growth of algal and macrophyte vegetation as a results of severe nutrient enrichment coupled with increased levels of siltation.
		Sea Lamprey	Surface water dependent. Highly sensitive to hydrological change	Poor	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		Brook Lamprey	Surface water dependent. Highly sensitive to hydrological change	Good	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		River Lamprey	Surface water dependent. Highly sensitive to hydrological change	Good	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
		Twaite shad	Surface water dependent. Highly sensitive to hydrological change	Bad	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		Atlantic Salmon	Surface water dependent. Highly sensitive to hydrological change	Bad	Numerous threats impact upon this species the most important of which are reduced marine survival (probably as a result of climate change), poor river water quality (resulting from factors such as inadequate sewage treatment, agricultural enrichment, acidification, erosion and siltation), forestry-related pressures and over-fishing.
		Otter	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitive to pollution	Poor	A diverse range of threats and impacts currently affect otters in Ireland. Use of pesticides, fertilization, removal of hedges and copses, removal of scrub, felling of native or mixed woodland, professional fishing (including lobster pots and fyke nets), hunting, trapping, poisoning, poaching, sand and gravel extraction, mechanical removal of peat, urbanised areas, human habitation, continuous urbanization, industrial or commercial areas, discharges, disposal of household waste, disposal of industrial waste, disposal of inert materials, other discharges, routes, autoroutes, bridge, viaduct, water pollution, other forms or mixed forms of pollution, infilling of ditches, dykes, ponds, pools, marshes or pits, drainage, management of aquatic and bank vegetation for drainage purposes, removal of sediments, canalization or modifying structures of inland water course

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
Site Code 1757- Holdensotown Bog SAC	The Greater Carlow Graiguecullen Urban Area is located 14.5 km from the SAC.	Transition mires and quaking bogs	Surface water dependent. Highly sensitive to hydrological change. Sensitive to pollution.	Bad	The main threat to this habitat include drainage, infilling, reclamation and pollution
Site Code 2162- River Barrow and River Nore SAC	The Greater Carlow Graiguecullen Urban Area is located directly in part of the SAC.	Desmoulin's whorl snail	Surface water dependent. Highly sensitive to hydrological change.	Poor	The main threats to this species include drainage, infilling and reclamation.
		Freshwater Pearl Mussel	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.	Bad	The principal threat to this species is poor substrate quality due to increased growth of algal and macrophyte vegetation as a result of severe nutrient enrichment coupled with increased levels of siltation.
		White clawed crayfish	Surface water dependent. Highly sensitive to hydrological change. Sensitive to pollution.	Poor	One of the main threats to this species is the introduction of diseases transmitted by introduced American crayfish other threats include eutrophication, channel maintenance, barriers to migration such as weirs, gross pollution and specific pollutants.

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
		Sea Lamprey	Surface water dependent. Highly sensitive to hydrological change	Poor	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		Brook Lamprey	Surface water dependent. Highly sensitive to hydrological change	Good	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		River Lamprey	Surface water dependent. Highly sensitive to hydrological change	Good	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		Twaite Shad	Surface water dependent. Highly sensitive to hydrological change	Bad	The main threats to this species include channel maintenance works, barriers to migration such as weirs, gross pollution and specific pollutants.
		Estuaries	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Sensitive to changes in salinity and tidal regime as well as coastal development	Poor	The main threats to this habitat relate to impacts arising from aquaculture, fishing, coastal development and water pollution

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
		Mudflats and sandflats not covered by seawater at low tide	Marine water dependent. Highly sensitive to hydrological change	Poor	The most serious threats arise from aquaculture, fishing, bait digging, removal of fauna, reclamation of land, coastal protection works and invasive species, particularly cord-grass ( <i>Spartina</i> spp.).
		Salicornia and other annuals colonizing mud and sand	Marine water dependent. Highly sensitive to hydrological change	Poor	The main threats of this habitat include infilling, reclamation and embankment, the use of intertidal areas for agricultural purposes and alien species.
		Atlantic salt meadows ( <i>Glauco Puccinellietalia maritimae</i> )	Marine water dependent. Highly sensitive to hydrological change	Poor	The main threats of this habitat include over-grazing by sheep or cattle, erosion, infilling, reclamation and alien species.
		Otter	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitive to pollution	Poor	A diverse range of threats and impacts currently affect otters in Ireland. Use of pesticides, fertilization, removal of hedges and copses, removal of scrub, felling of native or mixed woodland, professional fishing (including lobster pots and fyke nets), hunting, trapping, poisoning, poaching, sand and gravel extraction, mechanical removal of peat, urbanised areas, human habitation, continuous urbanization, industrial or commercial areas, discharges, disposal of household waste, disposal of industrial waste, disposal of inert materials, other discharges, routes, autoroutes, bridge, viaduct, water pollution, other forms or mixed forms of pollution, infilling of ditches, dykes, ponds, pools, marshes or pits, drainage, management of aquatic and

Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
					bank vegetation for drainage purposes, removal of sediments, canalization or modifying structures of inland water course
		Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )	Marine water dependent. Highly sensitive to hydrological change	Poor	The main threats of this habitat include overgrazing by sheep or cattle, infilling and reclamation.
		Killarney fern	Surface and groundwater dependent. Highly sensitive to hydrological changes. Sensitive to changes in management.	Good	The main threats to this species include pollution, deforestation, and drainage.
		Nore freshwater pearl mussel <i>Margaritifera durrovensis</i>	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.	Bad	The principal threat to this species is poor substrate quality due to increased growth of algal and macrophyte vegetation as a result of severe nutrient enrichment coupled with increased levels of siltation.
		Watercourses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation	Surface and groundwater dependent. Highly sensitive to hydrological changes. Highly sensitive to pollution.	Bad	The main threats include: eutrophication, overgrazing, excessive fertilisation, afforestation, and the introduction of invasive alien species.



Natura 2000 Site	Location	Qualifying Interests	Site Sensitivity	Conservation Status <sup>1</sup>	Threats*
		European dry heaths	Sensitive to changes in management.	Poor	The main threats to the habitat include Afforestation, over-burning, over-grazing, under-grazing and bracken invasion
		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Surface water dependent. Highly sensitive to hydrological change.	Poor	The main threats to this habitat include the spread of alien species, arterial drainage and agricultural improvement at the river edge.
		Petrifying springs with tufa formation (Cratoneurion)	Groundwater dependent. Highly sensitive to hydrological change.	Bad	The main threats to this habitat include land reclamation, turf cutting, and Drainage.
		Old sessile oak woods with Ilex and Blechnum in British Isles	Sensitive to changes in management.	Bad	The main threats to this habitat include the invasion of alien species and sub-optimal overgrazing.
		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>	Surface & groundwater dependent. Highly sensitive to hydrological changes. Sensitive to changes in management.	Bad	The area of this habitat has declined throughout Ireland. The main threats include sub-optimal grazing regimes, drainage, alien invasive species together with the fragmentation of its habitat for agriculture and/or felling for timber.

The urban area associated with Joint Spatial Plan is directly within the River Barrow and River Nore SAC (Site Code 2162), where one of the main threats are changes to water quality in terms of water pollution. The Urban Area is also upstream of the Nore freshwater pearl mussel *Margaritifera durrovensis*. Therefore the River Barrow and River Nore SAC (Site Code 2162) Natura 2000 site was considered relevant for inclusion in the Appropriate Assessment.

However, a review of the qualifying features of Holdenstown Bog SAC (Site Code 1757) and Slaney River Valley SAC (Site Code 781) indicated that there is no likely pathway between pressures within the Greater Carlow Graiguecullen Urban Area and the sensitive habitat and species receptors within Holdenstown Bog and the Slaney River Valley, as outlined below. Holdenstown Bog is located almost 15km up gradient of the urban area and there is no hydraulic or other connectivity between the bog and the Greater Carlow Graiguecullen Urban Area. No objectives or policies detailed in the Draft Joint Spatial Plan for the urban area relate in any way to Holdenstown Bog nor to any activity in or connected to the bog. Therefore, as none of the objectives or policies has potential to impact on the qualifying features of the site, the Holdenstown Bog SAC (Site Code 1757) was screened out and not included further in this Appropriate Assessment.

The upper reaches of the Slaney River Valley is within the 15km buffer and although it is well outside the Greater Carlow Graiguecullen urban area, there is a water abstraction at Rathvilly that forms part of the drinking water supply to the Greater Carlow Graiguecullen urban area. An abstraction licence for this particular abstraction has been in place since 1981. However, as detailed in the Draft Joint Spatial Plan for 2012-2018, no change to the existing licence conditions or additional abstraction from the River Slaney forms part of the Joint Spatial Plan. In fact, the Draft Spatial Plan outlines that any possible future increases in drinking water demand will be met by the recently developed groundwater resources at Springhill and Oakpark. Presently, the groundwater resources provide significant spare capacity for drinking water in Carlow town as one of the borehole has yet to be commissioned. As there is no change or proposals for additional abstraction of water from the River Slaney at Rathvilly associated with the Draft Plan, the focus of this Appropriate Assessment will be on the possibility of future pressures associated with the relevant groundwater resources at Oak Park and Springhill that may arise due to any increased development. For these reasons the Slaney River Valley SAC (Site Code 781) Natura 2000 site was also screened out and will not be included further in this Appropriate Assessment. However, should any amendment to the Draft Plan include changes to the existing abstraction licence, such amendments should be subject to Appropriate Assessment.

Therefore, the River Barrow and River Nore SAC (Site Code 2162) was the main focus of the assessment going forward, with details outlined in the Screening Matrix in Appendix B.

#### **4.1.4 Assessment of Likely Impacts**

The specific conservation objectives of the site (River Barrow and River Nore SAC) are available from NPWS as detailed in Appendix A. The most likely potential direct impacts of the proposed objectives and policies of the Joint Spatial Plan are alterations in water quality e.g. deterioration in water quality or water pollution and encroachment of the SAC by development. These impacts are listed as threats to the sensitive and protected species living in the River Barrow such as the Otter, Lamprey, and Crayfish as well as to the Nore freshwater pearl mussel *Margaritifera durrovensis* downstream of the urban area.

Individual elements of the draft Joint Spatial Plan have been identified that may result in impacts on Natura 2000 sites. The elements are outlined below:

- Settlement strategies, including population growth in and around the urban area;
- Increase in tourism activities due to tourist promotion of the greater urban area;
- Increase in recreational demand and facilities associated with the increased population;
- Infrastructural improvements associated with maintenance and improvement of national transport corridors serving Carlow town, in particular the N80;
- Water supply services investment programme
- Wastewater services investment programme
- Industrial and enterprise development associated with Industry and Enterprises Policies
- Flood Risk and Management Strategy for the SERBD.
- Zoning objectives

The features of interest and Conservation Objectives of the River Barrow and River Nore SAC (Site Code 2162) are described in Appendix A. The information requirements and assessment criteria of screening specified in the European guidance on Appropriate Assessment (European Commission Environment Division's *Assessment of plans and projects significantly affecting Natura 2000 sites*, 2001) have served as the basis for the following screening appraisal. Measures which will be implemented to reduce or mitigate impacts of the proposed development on the Natura 2000 sites are provided where applicable.

Indirect impacts on Natura 2000 sites are possible where there are hydrological connections between the Natura 2000 sites and the Draft Joint Spatial Plan area. The draft plan may result in alterations to the hydrological regime or physical environment of sites from abstraction, drainage, flood protection and discharges to watercourses or groundwater resources.

There is potential for contamination of freshwater sites (the River Barrow and River Nore cSAC) through diffuse and point source runoff from development during the construction or operational phases of developments and roads located close to or adjacent to the site. This is particularly relevant to the strategy of turning the town towards the river and the construction of new roads. The water quality in the protected area is not in itself a qualifying interest of the

listed SAC. However, the potential improvements to the water chemistry could have indirect impacts on the qualifying interests of the sites.

Policies that either encourage or support the improvement or construction of various roadways e.g. N80, Northern Relief Road, Inner Relief Road, Western Relief Road, New Multi-modal bridge, Southern Relief Road, Eire Go Road and Eastern Relief Road have the potential for impacts associated with impacts on water quality (such as deterioration to water status, targets or objectives as set in the South-Eastern RBD Management Plan), and alterations to the structure and function of the Natura 2000 site (River Barrow & River Nore SAC) associated with construction works, management of surface water run-off, bridge structure and construction and route of the roadways etc. Sources of contamination from residential, commercial and infrastructural developments, and through other diffuse sources within the wider catchment. Contamination may arise from in all waters through poor working practices, leakages or accidental spillage of materials if efficient pollution control measures are not fully implemented and maintained. Drainage works associated with flood relief schemes also have potential to alter the physical environment and hydrological regime on which the sites integrity depends. This impact on water quality is potentially through contamination with sediments, hydrocarbons, faecal coli forms and other contaminants, alteration in the physical environment and to the hydrological regime. Consequently, there is potential for disturbance of species in Natura 2000 sites arising from the individual elements of the draft Joint Spatial Plan.

The land area associated with the draft Joint Spatial Plan includes a Natura 2000 site within the boundary and an additional Natura 2000 site downstream linked via a hydrological pathway (River Barrow). There is potential for a direct loss, deterioration or fragmentation of habitats arising from land-take requirements. Impacts arise directly through inappropriate siting of development within a Natura 2000 site or immediately adjacent to its boundary, which cause deterioration in the factors that support the favorable conditions of the site. Consequently, there is potential for a significant adverse effect on the integrity of these sites and their conservation objectives.

#### **4.1.5 Assessment of Significance**

A precautionary approach was taken in that, with cases of uncertainty; it was assumed the effects could be significant. Examples of significance indicators of impact from Commission Guidance (EC, 2002) as listed below were used in the assessment:

- Loss of habitat area
- Fragmentation (duration or permanence, level in relation to original extent)
- Disturbance (duration or permanence, distance from site)
- Species population density (timescale for replacement)
- Water resource (relative change)
- Water Quality (relative change in key indicators chemical and other elements)

Each of these indicators was assessed for the SAC identified during the previous stages where there is potential for impact. A summary of this assessment is outlined in Table 4.2. As a guide, any measure that had the potential to affect the conservation objectives of a Natura 2000 site, including its structure and function, was considered significant.

**Table 4.2 Potential Impacts on River Barrow & River Nore SAC from the various proposed Objectives and Policies contained within the Draft Joint Spatial Plan**

Potential Impact	SAC 002162 River Barrow & River Nore
<b>Loss of habitat area &amp; Fragmentation</b>	Potential for direct habitat loss if there is complete removal of a habitat type or fragmentation resulting in the incremental loss of small patches of habitat from within a larger site. Potential for fragmentation also resulting from impediments to the natural movements of species. This is relevant where important corridors for movement or migration are likely to be disrupted such as along the river corridor. Habitat degradation results in the diminishment of habitat quality and a loss of important habitat functions. It can arise from the introduction of invasive species, toxic contamination or physical alteration.
<b>Disturbance</b>	Potential for disturbance to the species supported within the River Barrow and River Nore SAC due to an increase in activity levels from recreation and amenity or from developments within or adjacent to river (designated area). It is particularly important that known sensitive areas, such as nesting sites and foraging areas, are protected.
<b>Species population density</b>	Potential for disturbance due to impacts of other potential impacts. E.g. impacts to physical habitat, in particular to riparian habitat will be detrimental to species density.
<b>Water resource</b>	No direct impact on qualifying features of River Barrow or River Slaney as boreholes have been developed to supplement existing supply so that any future increased requirements for drinking water are met in a sustainable manner, but need to ensure there is no significant impact to groundwater base flow contribution to surface water interaction in the area, associated with increased abstractions from boreholes.
<b>Water quality</b>	Potential for contamination to surface water or groundwater resources This is relevant where the plan could impact on: the hydrological connection to the Natura 2000 site; on water quality via point source or diffuse pollution; or on sub-surface pathways that are not clearly understood. This should be considered on case-by-case bases for each development and will require site-specific hydrological information.

#### 4.1.6 Cumulative Impacts

For Appropriate Assessment, it is required to identify all those elements of other plans/programmes, which have the potential for having significant affects on the Natural 2000 Sites either alone or in combination with each other. In addition an assessment of the impacts from the combination of Objectives and Policies is required. Therefore, an assessment of the 'in combination' effects was also carried out. The scope of the assessment was set at a County level. In reviewing other plans/programmes, the following *assessment questions* were asked:

- Will these other Plans/Programmes lead to the *probability* or the *risk* of having a significant effect on a designated site?
- Are these other plans/programmes likely to undermine the site's conservation objectives?
- Will these other plans/programmes lead to the probability or the risk of having a significant effect on a designated site either;
  - a) in combination with other plans/programmes as outlined, or
  - b) in combination with the Objectives and Policies of the Joint Spatial Plan

The overall in-combination effect is a key part of the screening process as it ensures plans or policies are captured that would not trigger a likely significant effect on their own. In order to identify potential In Combination Effects, the following plans have been considered:

- Laois County Development Plan
- Carlow County Development Plan
- South Eastern River Basin Management Plan 2010
- SERBD Catchment Flood Risk and Management Plan
- Freshwater Pearl Mussel Nore River Basin Management Plan

There is potential for "in-combination" effects with the adjacent County Development Plans and Catchment Flood Risk and Management Plan.

#### **4.1.7 Screening Statement**

There is potential for significant impact to water quality and quantity arising from the individual elements of the draft Joint Spatial Plan and the cumulative impacts of other plans and projects. Implicit in the Habitats Directive is the application of the precautionary principle, which is used:

- (i) where there is potential for negative effects and,
- (ii) where due to inconclusive or insufficient data it is not impossible to determine with sufficient certainty the risk in question (EC, 2000b).

It has been concluded that the draft Joint Spatial Plan, alone or in combination with other plans and projects, is likely to have significant adverse impacts upon the River Barrow and River Nore SAC (Natura 2000 site) Consequently, the assessment process must now proceed to Stage 2 – Appropriate Assessment, where the potential impacts are discussed in a more comprehensive manner and detailed mitigation measures are provided which aim to minimise and avoid risks to sensitive receptors.

## 5 STAGE II (APPROPRIATE ASSESSMENT STAGE)

This stage of the assessment process considers the impacts (whether they are direct, indirect, short term, long term, constructional, operational or cumulative in conjunction with other plans or projects) that the proposed Objectives and Policies contained in the Joint Spatial Plan will have on the integrity of Natura 2000 Site with respect to the conservation objectives of the site and to its structure and function. EC guidance (Managing Natura 2000 Sites) states that the integrity of a site involves its ecological functions and the decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives (EC 2000). This stage of the Appropriate Assessment consists of four main steps, namely;

- **Step One** – *Information required*, where the conservation objectives of the site are reviewed and the aspects of the proposed plan or project which affect these conservation objectives are identified.
- **Step Two** – *Impact Prediction*, where the likely impacts of a project or plan are examined. These include direct/indirect, short/long term, construction/operational/decommissioning, isolated, interactive and cumulative effects.
- **Step Three** – *Conservation Objectives*, where the effects of a project or plan are assessed as to whether they have any adverse effects on the integrity of the site as defined by its conservation objectives.
- **Step Four** – *Mitigation Measures*, where the level of mitigation (top of mitigation hierarchy) is assessed against the adverse effects that the project or plan is likely to cause.

### 5.1 APPROPRIATE ASSESSMENT STEP ONE – INFORMATION REQUIRED

A detailed description of the River Barrow & River Nore SAC is provided in Appendix A. Key qualifying features for each under consideration regarding potential impacts are also detailed in the Table 4.1 and Appendix A.

### 5.2 APPROPRIATE ASSESSMENT STEP TWO – IMPACT PREDICTION

Predicting the likely impacts of a plan or project on a Natura 2000 site can be difficult, as the elements that make up the ecological structure and function of a site are dynamic and not easily measured. The potential impacts and effects (short/long term, construction/operational) of the proposed measures are determined.



### 5.3 APPROPRIATE ASSESSMENT STEP THREE – CONSERVATION OBJECTIVES

#### 5.3.1 *Predicted Impacts on the Qualifying Interests of Natura 2000 Sites*

Site-specific conservation objectives for The River Barrow and River Nore SAC (site code 002162) are available from the NPWS and the objectives aim to define favourable conservation condition for particular habitats or species at the site. For the River Barrow and River Nore SAC, favourable conservation status of a habitat is achieved when:

- its natural range, and area 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.

The 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.

The Draft Joint Spatial Plan sets out development objectives, policies and zoning policy for the period 2012 – 2018, which effects all areas of policy including settlement strategy, infrastructure and environmental management. The proposed development is centered on the Greater Urban Area of Carlow Town, located on a Natura 2000 site and they have the potential to directly or indirectly impact on their conservation objectives.

There is potential for indirect impacts on the River Barrow and River Nore cSAC as a result of discharges to the River. There is potential for increased recreational, amenity and tourist use of the Natura 2000 site.

The expansion or increase of infrastructural requirements for the town poses a threat to the River Barrow and Nore cSAC, largely through potential exceedence in wastewater treatment capacity and an associated reduction in water quality. Upgrades to the wastewater treatment plant will be critical to maintaining water quality standards and preventing contamination events. The potential for deterioration in water quality is compounded as there are cumulative impacts on the site from a number of sources, including agricultural run-off, forestry, and sedimentation from peatland areas and from other sources from outside the county. The main channel supports lamprey species, Atlantic salmon and white-clawed crayfish that are negatively impacted by a reduction in water quality and/or increased sedimentation. The channel downstream is particularly sensitive due to the presence of Freshwater pearl mussel.

The requirement for flood defenses may contribute to potential threats to the River Barrow and Nore cSAC site. Engineered solutions to flooding problems may result in a loss of flood plain, alteration to the hydrological regime, or the habitat of protected species. Maintenance works such as dredging can remove valuable habitat for species such as lamprey, as their young live in sediment along the rivers edge. Damage to spawning areas through dredging and maintenance will also affect the integrity of the site by reducing potential for spawning in Atlantic salmon and lamprey. The removal of silt can also negatively impact on alluvial woodlands.

#### **5.4 APPROPRIATE ASSESSMENT STEP FOUR – MITIGATION MEASURES**

For the purposes of this report the term “mitigation measures” are considered to be *“those measures which aim to minimise, or even cancel, the negative impacts on a site that are likely to arise as a result of the implementation of a plan or project. These measures are an integral part of the specifications of a plan or project”*. (Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC, January 2007).

The following sets out in summary the mitigation measures and how they might be implemented.

- (i) The Joint Spatial Plan identifies a number of individual objectives and policies (transport improvements, infrastructural developments, housing etc.) for development during the lifetime of the plan. The plan should emphasise that these are dependent upon clear demonstration that there will be no impacts on the integrity of a Natura 2000 site in accordance with Article 6 of the Habitats Directive. The plan should state that an Appropriate Assessment has been carried out at the planning stage of the various developments and reference should be made to its mitigation for Natura 2000 sites.
  
- (ii) The plan identifies a number of specific transport objectives, such as the N80 (Carlow to Portlaoise) improvements, and development of Southern Relief Road which will require Appropriate Assessment. This should be carried out at the earliest stages in development, beginning at the route selection stage and also at subsequent stages of development to determine if significant adverse impacts are likely. Assessments will become more detailed and specific at each level of the assessment as details of the location, extent, construction and operational impacts of the project emerge. Ensure that any plan or project associated with transportation (roads, rail or other forms), which has the potential to significantly affect a Natura 2000 site, is assessed in accordance with Article 6 of the Habitats Directive in order to avoid adverse impacts on the integrity of that site. Transport infrastructure with existing planning cannot retrospectively be

influenced by AA so all new planning proposals should include AA as part of the process.

- (iii) Where the construction or extension of a water supply scheme has potential to impact on a Natura 2000 site it will require Appropriate Assessment, using hydrogeological data, to clearly demonstrate that there will be no adverse impact on the groundwater supply or groundwater base flow to surface waters, in particular to the River Barrow and River Nore or to any other aspects of the Natura 2000 site.
- (iv) Ensure that all development takes place in tandem with the provision of adequate services such as water supply or wastewater treatment. In addition, any works carried out to upgrade or extend the wastewater treatment plant will also be subject to the Appropriate Assessment process. Where one-off housing is sought, planning should ensure that there will be no direct impact on any site by avoiding encroachment and ensure no indirect impact on any site by protecting groundwater quantity or quality.
- (v) Ensure that any plan or project associated with the provision of new housing, which has the potential to significantly affect a Natura 2000 site, is assessed in accordance with Article 6 of the Habitats Directive in order to avoid adverse impacts on the integrity of that site. All future developments involving encroachment of the SAC or its riparian vegetation should be avoided.
- (vi) Ensure that CFRMP and management measures have the potential to impact negatively on Natura 2000 sites are subject to an Appropriate Assessment.
- (vii) Ensure protection of Natura 2000 site by avoiding development on floodplains and ensure that flood risk assessment policies, plans or projects are compliant with Article 6 of the Habitats Directive and avoid or mitigate negative impacts on Natura 2000 sites.
- (viii) Ensure no encroachment on the Natura 2000 site (River Barrow and River Nore SAC) associated with development, and also that the proposed including provision of pedestrian and cycle paths close to river banks, it is important that a suitable riparian habitat should remain along each watercourse and that lands are not be managed intensively right up to the rivers edge. This allows shading of the water course, provision of leaf litter in to the aquatic ecosystem as well as maintenance of wildlife corridors. In addition, the root structure of mature plants and trees provide an important function in bank stability and assisting in natural flood functions. In addition, any proposal to include lighting along such walkway and cycle paths should be assessed to determine possible impacts to bat species and the potential for disturbance to bat feeding along river corridors.

- (ix) In relation to impacts associated with construction of road and bridge infrastructure within the area relevant to the Joint Spatial Plan, all works should be subject to Project Level Appropriate Assessment as part of the planning process, when details of the design become available.
- (x) Ensure protection of the riparian corridor and implement buffer zone (e.g. 10-30m) where feasible or as determined following consultation with the Inland Fisheries Ireland. This is important especially related to the policy of the town turning to face the river.
- (xi) Protect and maintain migration routes for protected species e.g. salmon and lamprey species.
- (xii) Implement SUDS in adjacent areas of development on new developments to treat and eliminate potential contamination arising from diffuse sources such as construction or storm water runoff.  
Any proposed developments that have the potential to directly, indirectly or cumulatively impact on the integrity of the Natura 2000 site will require assessment in accordance with Article 6 of the Habitats Directive.

In terms of specific policies discussed within the Joint Spatial Plan for the Greater Carlow Graiguecullen Urban Area, the following list of policies require mitigation in terms of emphasise that these are dependent upon clear demonstration that there will be no impacts on the integrity of a Natura 2000 site in accordance with Article 6 of the Habitats Directive: CO3; CO10; ECN P13; Trans P03; Trans P06; Trans P07; Trans P23; Trans P28; Trans P40; PL P01; PL P08; PL P13; PL P15; PL P18; ENV P17; E&S P01; REC P20; SOC P33; HOUS P01; HOUS P02; DBF/P02; CTP1, CT25, GL 03, GL P9, GL P10, and CTE P2.

Consultation with the Plan making team and the Appropriate Assessment team resulted in recommendations outlined in the AA being incorporated in to the Joint Spatial Plan for the Carlow Graiguecullen Urban Area.

## **5.5 APPROPRIATE ASSESSMENT OF MITIGATION MEASURES**

These mitigation steps were subsequently assessed but no impacts were identified. As stated in NPWS Guidance Document (2009), the requirement of the AA is not to prove what the impacts and effects will be, but rather to establish beyond reasonable scientific doubt that adverse effects on site integrity will not result. The mitigation outlined in above was designed to achieve the aim of the Appropriate Assessment. Due to the identification of appropriate and sufficient mitigation there is no need to identify alternative solutions and the Appropriate Assessment is complete as it does not need to proceed to Steps 4 or 5.

## 6 APPROPRIATE ASSESSMENT CONCLUSION

The likely impacts that will arise from the objectives and policies have been examined in the context of a number of factors that could potentially affect the integrity of the Natura 2000 network. On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the proposed works:

- (i) are not directly connected with or necessary to the management of a Natura 2000 site and
- (ii) will not have significant effects on the qualifying species of the SAC when mitigation measures are adhered to.

Following the implementation of mitigation described in this Appropriate Assessment it is expected that the implementation of the Objectives and Policies of the Joint Spatial Plan 2012-2018 will avoid significant negative impacts to key sensitive receptors (e.g. otter, crayfish, salmon, freshwater pearl mussel and salmon) and other qualifying features of the Natura 2000 sites. Guideline mitigation is detailed here which aims to remove risks in the urban area. This mitigation is incorporated into the Joint Spatial Plan for Greater Carlow Graiguecullen Urban Area.

There should therefore be no requirement for Stage 3 (*Assessment of Alternative Solutions*) and 4 (*Assessment Where Adverse Impacts Remain*), of the appropriate assessment process.

## **APPENDIX A**

### **NPWS SITE SYNOPSIS & CONSERVATION OBJECTIVES**

**SITE SYNOPSIS**  
**SITE NAME: SLANEY RIVER VALLEY**  
**SITE CODE: 000781**

This site comprises the freshwater stretches of the Slaney as far as the Wicklow Mountains; a number of tributaries the larger of which include the Bann, Boro, Glasha, Clody, Deny, Derreen, Douglas and Camgower Rivers; the estuary at Ferrycarrig and Wexford Harbour. The site flows through the counties of Wicklow, Wexford and Carlow. Towns along the site but not in it are Baltinglass, Hacketstown, Tinahely, Tullow, Bunclody, Camolin, Enniscorthy and Wexford. The river is up to 100 m wide in places and is tidal at the southern end from Edermine Bridge below Enniscorthy. In the upper and central regions almost as far as the confluence with the Deny River the geology consists of granite. Above Kilcarrig Bridge, the

Slaney has cut a gorge into the granite plain. The Deny and Bann Rivers are bounded by a narrow line of uplands which corresponds to schist outcrops. Where these tributaries cut through this belt of hard rocks they have carved deep gorges, more than two miles long at Tinahely and Shillelagh. South of Kildavin the Slaney flows through an area of Ordovician slates and grits.

The site is a candidate SAC selected for alluvial wet woodlands, a priority habitat on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats and old oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is further selected for the following species listed on Annex II of the same directive - Sea Lamprey, River

Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Twaite Shad, Atlantic Salmon and Otter. Floating river vegetation is found along much of the freshwater stretches within the site. Species present here include Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), Water-starwort (*Callitriche* spp.), Hemlock Water-dropwort, Fine-leaved Waterdropwort (*Oenanthe aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium ernersum*) and the moss *Fontinalis antipyretica*. Two rare aquatic plant species have been recorded in this site: Short-leaved Water-starwort (*Callitriche truncata*), a very rare, small aquatic herb found nowhere else in Ireland; and Opposite-leaved Pondweed (*Groenlandia densa*), a species that is legally protected under the Flora Protection Order, 1999.

Good examples of wet woodland are found associated with Macmine marshes, along banks of the Slaney and its tributaries and within reed swamps. Grey Willow (*Salix cinerea*) scrub and pockets of wet woodland dominated by Alder (*Alnus glutinosa*) have become established in places. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*). These woodlands have been described as two types: one is quite eutrophic, is dominated by Willow and is subject to a tidal influence. The other is flushed or spring-fed subject to waterlogging but not to flooding and is dominated by Alder and Ash. Old oak woodlands are best represented at Tomnafinnoge though patches are present throughout the site. At Tomnafinnoge the wood is dominated by mature, widely

spaced Sessile Oak (*Quercus petraea*), which were planted around 1700, with some further planting in 1810. There is now a varied age structure with overmature, mature and young trees; the open canopy permits light to reach the forest floor and encourages natural regeneration of Oak. As well as Oak, the wood includes the occasional Beech (*Fagus sylvatica*), Birch (*Betula* sp.), Rowan (*Sorbus aucuparia*)

and Scots Pine (*Pinus sylvestris*). The shrub layer is well-developed with Hazel (*Corylus avellana*) and Holly (*Ilex aquifolium*) occurring. The ground layer consists of Great Wood-rush (*Luzula sylvatica*) and Bilberry (*Vaccinium myrtillus*), with some Bracken (*Pteridium aquilinum*) and Brambles (*Rubus fruticosus* agg.). Herbaceous species in the ground layer include Primrose (*Primula vulgaris*), Wood-sorrel (*Oxalis acetosella*), Common Cow-wheat (*Melampyrum pratense*) and Bluebell (*Hyacinthoides non-scripta*). Many of the trees carry an epiphytic flora of mosses, Polypody Fern (*Polypodium vulgare*), and lichens such as *Usnea comma*, *Evernia prunastri*, *Ramalina* spp. and *Parnelia* spp.

Tomnafinnoge Wood is a remnant of the ancient Shillelagh Oak woods, and it appears that woodland has always been present on the site. In the past, the wood was managed as a Hazel coppice with Oak standards, a common form of woodland management in England but not widely practised in Ireland. The importance of the woodland lies in the size of the trees, their capacity to regenerate, their genetic continuity with ancient woodland and their historic interest. The nearest comparable stands are at Abbeyleix, Co. Laois and Portlaw, Co. Waterford. Below Enniscorthy there are several areas of woodland with a mixed canopy of Oak, Beech, Sycamore (*Acer pseudoplatanus*), Ash and generally a good diverse ground flora. Near the mouth of the river at Ferrycarrig is a steep south facing slope covered

with Oak woodland. Holly and Hazel are the main species in the shrub layer and a **species-rich ground flora typical of this type of Oak woodland has abundant ferns - *Dryopteris filix-mas*, *Polystichum setiferum*, *Phyllitis scolopendrium* - and mosses - *Thuidium tamariscinum*, *Mniurites hornum*, *Eurynchium praelongum*.**

North of Bunclody, the river valley still has a number of dry woodlands though these have mostly been managed by the estates with the introduction of Beech and occasional conifers. The steeper sides are covered in a thick scrub from which taller trees protrude. At the southern end of the site, the Red Data Book species Yellow Archangel (*Lamiastrum galeobdolon*) occurs. Three more Red Data Book species have also been recorded from the site: Basil Thyme (*Acinos awensis*), Blue Fleabane (*Erigeron acer*) and Small Cudweed (*Filago minima*). A nationally rare species Summer Snowflake (*Leucojum aestivum*) is also found within the site. Mixed woodlands occur at Carrickduff and Coolaphuca in Bunclody. Oak trees, which make up the greater part of the canopy, were originally planted and at the present time are not regenerating actively. In time, if permitted, the woodland will probably go to Beech. A fair number of Yew (*Taxus baccata*) trees have also reached a large size and these, together with

Holly give to the site the aspect of a south-western Oak wood.

The site is considered to contain a very good example of the extreme upper reaches of an estuary. Tidal reedbeds with wet woodland are present in places. The fringing reed communities support Sea Club-rush (*Scirpus maritimus*), Grey Club-rush (*S. tabernaemontani*) and abundant Common Reed (*Phragmites australis*). Other species occurring are Bulrush (*Typha latifolia*), Reed Canary-grass (*Phalaris arundinacea*) and Branched Bur-reed (*Sparganium erectum*). The reed-swamp is extensive around Macmine, where the river widens and there are islands with swamp and marsh vegetation. Further south of Macmine are expanses of intertidal mudflats and sandflats and shingly shore often fringed with a narrow band of salt marsh and brackish vegetation. Narrow shingle beaches up to 10 m wide occur in places along the river banks and are exposed at low tide. Upslope the shingle is sometimes colonised by Saltmarsh Rush (*Juncus gerardi*), Townsend's Cord-grass (*Spartina townsendii*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Hemlock Water-dropwort (*Oenanthe crocata*) and Himalayan Balsam (*Impatiens glandulifera*).

Wexford Harbour is an extensive, shallow estuary which dries out considerably at low tide exposing large expanses of mudflats and sandflats. The harbour is largely sheltered by the Raven Point to the north and Rosslare Point in the south. Other habitats present within the site include species-rich marsh in which sedges such as *Carex disticha*, *Carex riparia* and *Carex vesicaria* are common. Among the other species found in this habitat are Yellow Iris (*Iris pseudacorus*), Water Mint (*Mentha aquatica*), Purple Loosestrife (*Lythrum salicaria*) and Soft Rush (*Juncus effusus*). Extensive marshes occur to the west of Castlebridge associated with the tidal areas of the River Sow. The site supports populations of several species listed on Annex I of the EU Habitats Directive including the three Lampreys - Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*) and Brook Lamprey (*Lampetra planeri*), Otter (*Lutra lutra*), Salmon (*Salmo salar*), small numbers of Freshwater Pearl Mussel (*Margaritifera margaritifera*) and in the tidal stretches, **Twaite Shad (*Alosa fallax fallax*).** A survey of the Derreen River in 1995 estimated the population of Freshwater Pearl Mussel at about 3,000 individuals. This is

a significant population, especially in the context of eastern Ireland. The Slaney is primarily a spring salmon fishery and is regarded as one of the top rivers in Ireland for early spring fishing. The upper Slaney and its tributary headwaters are very important for spawning.

The site supports important numbers of birds in winter. Little Egret are found annually along the river. This bird is only now beginning to gain a foothold in Ireland and the south-east appears to be its stronghold. Nationally important numbers of Black-tailed Godwit, Teal, Tufted Duck, Mute Swan, Little Grebe and Black-headed Gull are found along the estuarine stretch of the river. The mean of the



maximum counts over four winters (1994/98) along the stretch between Enniscorthy and Ferrycarrig is: Little Egret (6), Golden Plover (6), Wigeon (139), Teal (429), Mallard (265), Tufted Duck (171), Lapwing (603), Shelduck (16), Blacktailed Godwit (93), Curlew (81), Red-breasted Merganser (11), Black-headed Gull (3030), Goldeneye (45), Oystercatcher (19), Redshank (65), Lesser Black-backed Gull (727), Herring

Gull (179), Common Gull (67), Grey Heron (39), Mute Swan (259) and Little Grebe (17). Wexford Harbour provides extensive feeding grounds for wading birds and Little Terns, which are listed on Annex I of the E.U. Birds Directive have bred here in the past. The Reed Warbler, which is a scarce breeding species in Ireland, is regularly found in Macmine Marshes but it is not known whether or not it breeds in the site. The Dipper also occurs on the river. This is a declining species nationally.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton's Bat. Common Frog (*Rana temporaria*), another Red Data Book species, also occurs within the site. Agriculture is the main landuse. Arable crops are important. Improved grassland and silage account for much of the remainder. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Annex I animal species within it. Run-off is undoubtedly occurring, as some of the fields slope steeply directly to the river bank. In addition, cattle have access to the site in places. Fishing is a main tourist attraction along stretches of the Slaney and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both

commercial and leisure fishing takes place. There are some gravel pits along the river below Bunclody and many of these are active. There is a large landfill site adjacent to the river close to Hacketstown and at Killurin. Boating, bait-digging and fishing occur in parts of Wexford Harbour. Waste water outflows, runoff from intensive agricultural enterprises, a meat factory at Clohamon and a landfill site adjacent to the river and further industrial development upstream in Enniscorthy and in other towns could all have potential adverse impacts on the water quality unless they are carefully managed. The spread of exotic species is reducing the quality of the woodlands.

The site supports populations of several species listed on Annex I of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as important numbers of wintering wildfowl including some species listed on Annex I of the EU Birds Directive. The presence of wet and broad-leaved woodlands increases the overall habitat diversity and the **occurrence of a number of Red Data Book plant and animal species adds further importance to the Slaney River site.**

07.12.2005

**SITE SYNOPSIS**  
**SITENAME: HOLDENSTOWN BOG**  
**SITECODE: 001757**

Holdenstown bog is situated about 3 km south-east of Baltinglass, Co. Wicklow. It is a small raised bog surrounded by transition mire which has developed in a kettle hole. Holdenstown Bog is a candidate SAC selected for transition mire, a habitat listed on Annex I of the E.U. Habitats Directive. The whole bog is very wet and the surface has a hummock-hollow topography. The hummocks are dominated by Heather (*Calluna vulgaris*), while the hollows have a range of bog mosses (*Sphagnum* spp.). In addition, there is a good diversity of sedges (*Carex* spp.), including the scarce Bog Sedge (*Carex limosa*), the only locality for this species in county Wicklow. Other plants typical of the bog include Cranberry (*Vaccinium oxycoccos*) and Bogbean (*Menyanthes trifoliata*).

The margins of the bog support wet scrub vegetation in which Alder (*Alnus glutinosa*) and Willow (*Salix cinerea* subsp. *oleifolia*) are prevalent. The rest of the bog perimeter is rich in sedges (*Carex nigra*, *C. otrubae*, *C. hirta*), rushes (*Juncus articulatus*, *J. subnodulosus*), as well as a range of wetland herbaceous plants such as Water Mint (*Mentha aquatica*), Marsh-marigold (*Caltha palustris*) and Water Horsetail (*Equisetum fluviatile*).

Holdenstown Bog is of conservation importance as an intact example of transition mire, a habitat listed on Annex I of the E.U. Habitats Directive, and for a range of plant species typical of incipient raised bog development.

26.11.2002

**SITE SYNOPSIS**  
**SITE NAME: RIVER BARROW AND RIVER NORE**  
**SITE CODE: 002162**

This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford.

Major towns along the edge of the site include Mountmellick, Portarlinton, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster,

Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore.

The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, Desmoulin's Whorl Snail *Vertigo moulinsiana* and the Killarney Fern. Good examples of Alluvial Forest are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Crack Willow (*S. fragilis*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*). Three rare invertebrates have been recorded in this habitat at Murphy's of the River. These are: *Neoascia obliqua* (Diptera: Syrphidae), *Tetanocera freyi* (Diptera: Sciomyzidae) and *Dictya umbrarum* (Diptera: Sciomyzidae). A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the EU Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Cratoneuron commutatum* var. *commutatum* and *Eucladium verticillatum*, have been recorded.

The best examples of old Oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens.

It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss *Leucodon sciuroides*. It has a typical bird fauna including Jay, Long-eared Owl and Raven. A rare invertebrate, *Mitostoma chrysomelas*, occurs in Abbeyleix and only two other sites in the country. Two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The rare Myxomycete fungus, *Licea minima* has been recorded from woodland at Abbeyleix. Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by Oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with

some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*). All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*) Wood Rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*). On the steeply sloping banks of the River Nore about 5 km west of New Ross, in County Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of a relatively undisturbed, relict Oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown a small, mature Oak-dominant woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard Fern (*Blechnum spicant*), Cowwheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*). Borris Demesne contains a very good example of a semi-natural broad-leaved woodland in very good condition. There is quite a high degree of natural re-generation of Oak and Ash through the woodland. At the northern end of the estate Oak species predominate.

Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly Oak species. The woods have a well established understorey of Holly (*Ilex aquifolium*), and the herb layer is varied, with Brambles abundant. Whitebeam (*Sorbus devoniensis*) has also been recorded.

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places. Floating River Vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include Water Starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), Milfoil (*Myriophyllum* spp.), *Potamogeton x nitens*, Broad-leaved Pondweed (*P. natans*), Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and Crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996).

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

Dry Heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabriskey, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*), Tormentil (*Potentilla erecta*), Carnation Sedge (*Carex panicea*) and Bell Heather (*Erica cinerea*). Saltmeadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) (Flora Protection Order, 1987) are found. The very rare Divided Sedge (*Carex divisa*) is also found. Sea Rush (*Juncus maritimus*) is also present. Other plants recorded and associated with

salt meadows include Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*), Sea Arrowgrass (*Triglochin maritima*) and Sea Plantain (*Plantago maritima*). *Salicornia* and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include *Arenicola marina*, *Nephtys hombergii*, *Scoloplos armiger*, *Janice conchilega* and *Cerastoderma edule*. The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here.

At the edges is a tall fen dominated by sedges (*Carex* spp.), Meadowsweet, Willowherb (*Epilobium* spp.) and rushes (*Juncus* spp.). Wet woodland also occurs. This area supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail. The dunes which fringe the strand at Duncannon are dominated by Marram grass (*Ammophila arenaria*) towards the sea. Other species present include Wild Sage (*Salvia verbenaca*), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*) and Buck's-horn Plantain (*Plantago coronopus*). Other habitats which occur throughout the site include wet grassland, marsh, reed swamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds.

Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge (*Carexdivisa*), Clustered Clover (*Trifolium glomeratum*), Basil Thyme (*Acinos arvensis*), Hemp nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh Grass (*Puccinellia fasciculata*), Meadow Barley (*Hordeum secalinum*), Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Wild Sage (*Salvia verbenaca*), Nettle-leaved Bellflower (*Campanula trachelium*), Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunuspadus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Broomrape (*Orobanche hederæ*) and Greater Broomrape (*Orobanche rapum-genistæ*). Of these the first nine are protected under the Flora Protection Order 1999. Divided Sedge (*Carexdivisa*) was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and Summer Snowflake (*Leucojum aestivum*). Six rare lichens,

indicators of ancient woodland, are found including *Lobaria laetevirens* and *L.pulmonaria*. The rare moss *Leucodon sciuroides* also occurs. The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*), the marsh snail *Vertigo moulinsiana* and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel *M. m. durrovensis* and one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentoni*), Badger (*Melesmeles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*). The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater Mussel species, *Anodonta anatina* and *A. cygnea*.

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, Bartailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the

winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country.

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

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable.

Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Pearl Mussel which is limited to a 10 km stretch of the Nore, add further interest to this site.

**APPENDIX B**

**SCREENING MATRIX**

## **SCREENING APPRAISAL**

The features of interest and Conservation Objectives of the River Barrow and River Nore Natura 2000 site, along with an analysis of the potential effects the proposed development related to the Strategies and Policies outlined in the Town Plan and LAPs, may have on these sites, are described in this Screening Matrix. The information requirements and assessment criteria of screening specified in the European guidance on Appropriate Assessment (European Commission Environment Division's *Assessment of plans and projects significantly affecting Natura 2000 sites*, 2001) have served as the basis for the following screening appraisal. Measures which will be implemented to reduce or mitigate impacts of the proposed development on the Natura 2000 sites are provided where applicable in the Matrix below.

The draft town plan and LAPs are not directly connected with, or necessary to, the conservation management of the River Barrow and River Nore SAC.



**Table 3.2 SCREENING MATRIX – River Barrow And River Nore (SAC) Site Code 002162**

<p>Brief description of the project or plan</p>	<p>The Joint Spatial Plan is a wide-ranging policy statement dealing with issues such as population and settlement patterns, economic and employment trends, retail, commercial and industrial development; education, healthcare and community facilities; environmental management and heritage protection, infrastructure including transportation, energy and communications; waste water treatment and water supply.</p> <p>The Core Strategy of the Draft Joint Spatial Plan sets out the Councils' vision and strategy for the proper planning and sustainable development of the Greater Carlow Graiguecullen Urban Area. It contains the cross-cutting core objectives that underpin the Joint Spatial Plan, as well as core aims which headline each thematic chapter.</p>
<p>Brief description of the <i>Natura 2000</i> Site</p>	<p>This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, <i>Salicornia</i> mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, <i>Vertigo moulinsiana</i> and the plant Killarney Fern. The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i> and <i>M. m. durrovensis</i>), Freshwater Crayfish (<i>Austroptamobius pallipes</i>), Salmon (<i>Salmo salar</i>), Twaite Shad (<i>Alosa fallax fallax</i>), three Lamprey species - Sea (<i>Petromyzon marinus</i>), Brook (<i>Lampetra planeri</i>) and River (<i>Lampetra fluviatilis</i>), the marsh snail <i>Vertigo moulinsiana</i> and Otter (<i>Lutra lutra</i>).</p>
<p>Describe the individual elements of the project likely to give rise to impacts on the <i>Natura 2000</i> Site</p>	<p>Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Apart from impacts on water quality, the result of human activity such as land development is an extremely fragmented landscape in terms of the habitats present. The impact of this disturbance and fragmentation is not clear. While disturbance is always a bad thing for biodiversity, in wetland systems the key is hydrology, and infilling and paved surfaces will alter and inhibit flows of water in unpredictable ways that can lead to flooding and pollution</p> <p>Built land: This habitat type consists of man-made or artificial surfaces such as roads, railways and existing buildings and is generally not associated with biodiversity. Floral species are generally absent with the exception of occasional ruderals. Disturbed ground: Human disturbance of habitats can occur through movement of soil and the removal of vegetation. While never preferable to original semi-natural habitat, disturbed ground has the potential to be rich in biodiversity. 'Do-nothing' scenario: In the absence of the town plan and LAPs much fragmentation of habitats will occur since urban development and road projects are already underway.</p> <p>The project comprises the following relevant policies and strategies that may give rise to impacts on water quality or disturbance of habitat: CO3; CO10; ECN P13; Trans P03; Trans P06; Trans P07; Trans P23; Trans P28; Trans P40; PL P01; PL P08; PL P13; PL P15; PL P18; ENV P17; E&amp;S P01; REC P20; SOC P33; HOUS P01; HOUS P02;</p>

**Table 3.2 SCREENING MATRIX – River Barrow And River Nore (SAC) Site Code 002162**

	DBF/P02; CTP1, CT25, GL 03, GL P9, GL P10, and CTE P2.
<p>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or project) on the Natura 2000 Site by virtue of:</p> <ul style="list-style-type: none"> <li>- Size and scale</li> <li>- Land-take</li> <li>- Distance from the Natura 2000 Site or key features of the Site</li> <li>- Resource requirements (water abstraction etc.)</li> <li>- Emissions (disposal to land, water or air)</li> <li>- Excavation requirements</li> <li>- Transportation requirements</li> <li>- Duration of construction, operation, etc.</li> </ul>	<p>The management of the SAC is under the remit of NPWS. Nevertheless, non-designated areas can also impact on these sites, particularly the riparian margins of tributaries of the River Barrow. Potential direct impacts include direct encroachment of development along the river bank. Potential indirect impacts may occur through the loss of adjacent habitats, disruption of hydrological flow, decrease in population of key species (otter, crayfish, lamprey, freshwater pearl mussel etc.). Specifically, there are five potential impacts from the Strategies and Policies in the Town Plan and both LAPs.</p> <ol style="list-style-type: none"> <li>1 Loss of recolonising bare ground and scrub leading to potential further loss of connectivity between semi-natural habitats and permanent disruption of hydrological flow within the natural flood plain of the River.</li> <li>2 Loss of habitats, including scrub, grassland, recolonising bare ground, oak woodland, riparian vegetation.</li> <li>4 Loss of biodiversity and pollution of water courses through the construction of buildings.</li> <li>5 Threat from development pressure within the River Barrow flood plain.</li> </ol> <p>Land take is limited and in general new developments proposed are away from the river, in particular in the LAPs. There is no surface water abstraction proposed. The potential for population increase will result in a higher population equivalent loading of wastewater with the plan areas, however, a proposed increase in wastewater treatment capacity of the wastewater treatment facility will negate this pressure and result in a higher quality or improved discharge of wastewater into the River Barrow.</p> <p>The requirement for excavation is associated with the proposed improvement of the N80, completion of the Northern Relief Road including the provision of a new vehicular bridge over the River Barrow. In addition, completion of the Inner Relief Road to the south of the River Burrin and the linking of the Inner Relief Road with the N80 to the east and the Southern Relief Road to the west will result in excavation requirements. The duration of these works will be medium-term (up to one year) but with excavation activities being short-term (weeks).</p> <p>It is proposed that the policies and strategies associated with these proposals are dependent upon clear demonstration that there will be no impact on the integrity of the Natura 2000 site in accordance with Article 6 of the Habitats Directive or significant adverse effects on other environmental receptors.</p>

**Table 3.2 SCREENING MATRIX – River Barrow And River Nore (SAC) Site Code 002162**

<p>Describe any likely changes to the Site arising as a result of:</p> <ul style="list-style-type: none"> <li>- Reduction of habitat area</li> <li>- Disturbance to key species</li> <li>- Habitat or species fragmentation</li> <li>- Reduction in species density</li> <li>- Changes in key indicators of conservation value (water quality etc)</li> <li>- Climate change</li> </ul>	<p>The Strategies and Policies outlined will not lead to a reduction in key habitat areas, disturbance to key species, habitat or species fragmentation, reduction in species density or changes to key indicators of conservation value if mitigation measures are observed.</p> <p>It is proposed that the policies and strategies associated with these proposals are dependent upon clear demonstration that there will be no impact on the integrity of the Natura 2000 site in accordance with Article 6 of the Habitats Directive or significant adverse effects on other environmental receptors.</p> <p>No new alterations or outfalls to the River Barrow are planned.</p>
<p>Describe any likely impacts on the Natura 2000 Site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>- Interference with the key relationships that define the structure of the Site</li> <li>- Interference with the key relationships that define the function of the Site</li> </ul>	<ol style="list-style-type: none"> <li>1. The structure and function of the river habitat and flood plains associated with the SAC will not be affected by installation of the radar mast.</li> <li>2. Disturbance could theoretically occur as a result of run-off from sites during construction works. However, any such negative impacts should be mitigated for at the on-set of the works.</li> </ol> <p>It is proposed that the policies and strategies associated with these proposals are dependent upon clear demonstration that there will be no impact on the integrity of the Natura 2000 site in accordance with Article 6 of the Habitats Directive or significant adverse effects on other environmental receptors.</p>
<p>Provide indicators of significance as a result of the identification of effects set out above in terms of:</p> <ul style="list-style-type: none"> <li>- Loss</li> <li>- Fragmentation</li> <li>- Disruption</li> <li>- Disturbance</li> <li>- Change to key elements of the Site (e.g. water quality etc.)</li> </ul>	<p>Possible changes to water quality in the absence of mitigation measures.</p> <p>It is proposed that the policies and strategies associated with these proposals are dependent upon clear demonstration that there will be no impact on the integrity of the Natura 2000 site in accordance with Article 6 of the Habitats Directive or significant adverse effects on other environmental receptors.</p>
<p>Describe from the above those elements of the project or plan, or combination of elements, where the impacts are likely to be significant or where the scale or magnitude of impacts is not known</p>	<p>The assessment indicates that <i>very little potential exists</i> for an impact on the integrity of the site to arise as a result of most of the Strategies and Policies of the Joint Spatial Plan if they are implemented. However, the following Strategies and Policies have been identified as having potential to impacts on the Integrity of the River Barrow and River Nore SAC, in the absence of mitigation being implemented:          CO3; CO10; ECN P13; Trans P03; Trans P06; Trans P07; Trans P23; Trans P28; Trans P40; PL P01; PL P08; PL P13; PL P15; PL P18; ENV P17; E&amp;S P01; REC P20; SOC P33; HOUS P01; HOUS P02; DBF/P02; CTP1, CT25, GL 03, GL P9, GL P10, and CTE P2.</p> <p>Impact prediction: There will be no direct loss of habitat within the SAC or impacts to qualifying features as a result of the town plan and LAPs, should mitigation measures be implemented.</p>

**APPENDIX C**

**APPROPRIATE ASSESSMENT SCREENING OF  
DRAFT JOINT SPATIAL PLAN 'PROPOSED AMENDMENTS'**

**AND**

**MODIFICATIONS TO DRAFT JOINT SPATIAL PLAN  
'PROPOSED AMENDMENTS'**

## **CONCLUSION OF APPROPRIATE ASSESSMENT SCREENING OF THE PROPOSED AMENDMENTS AND MODIFICATIONS OF PROPOSED AMENDMENTS**

The likely impacts that will arise from the proposed amendments (such as amendments to objectives, policies, zoning, and maps) as well as the subsequent modifications to some of the amendments have all been examined in the context of a number of factors that could potentially affect the integrity of the Natura 2000 network. On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the proposed amendments:

- (i) are not directly connected with or necessary to the management of a Natura 2000 site and
- (ii) will not have significant effects on the qualifying species of the SAC when previously identified mitigation measures in the initial Natura Impact Statement are adhered to.

Following the implementation of mitigation described in the original Appropriate Assessment and the implementation of specific Objectives and Policies outlined in the Joint Spatial Plan for Greater Carlow Graiguecullen Urban Area, it is expected that the implementation of the Objectives and Policies of the Draft Joint Spatial Plan 2012-2018 along with the proposed amendments will avoid significant negative impacts to key sensitive receptors (e.g. otter, crayfish, salmon, freshwater pearl mussel and salmon) and other qualifying features of the Natura 2000 sites. There is therefore no requirement for Stage 3 (*Assessment of Alternative Solutions*) and 4 (*Assessment Where Adverse Impacts Remain*), of the appropriate assessment process, related to the proposed amendments.