

**SCREENING
FOR
APPROPRIATE ASSESSMENT
REPORT**

**FOR
PROPOSED AMENDMENTS
TO THE
DRAFT CARLOW-GRAIGUECULLEN
JOINT URBAN LOCAL AREA PLAN
2024-2030**

for: Carlow and Laois County Councils



by: CAAS Ltd.



MAY 2024

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Section 1 Introduction

1.1 Background

This Screening for Appropriate Assessment (AA) Report has been prepared to assess whether or not Stage Two AA, including the preparation of a Natura Impact Report is required for the Proposed Amendments to the Carlow-Graiguecullen Joint Urban Draft Local Area Plan 2024-2030 (hereafter referred to as the "Draft Plan"), in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the "Habitats Directive") and the Planning and Development Act 2000, as amended.

This report is part of the overall and ongoing AA process that is being undertaken alongside the preparation of the Draft Plan (an AA Natura Impact Report has already been placed on public display alongside the Draft Plan). It will be considered, alongside other documentation prepared as part of this process, at adoption of the Plan.

The following documents have informed the preparation of this report and should be considered alongside it:

- Proposed Amendments to the Carlow-Graiguecullen Joint Urban Draft Local Area Plan 2024-2030;
- AA Natura Impact Report for the Carlow-Graiguecullen Joint Urban Draft Local Area Plan 2024-2030; and
- Carlow-Graiguecullen Joint Urban Draft Local Area Plan 2024-2030.

An AA Conclusion Statement will be prepared following adoption that will include the final AA determination expected to be made at adoption.

1.2 Legislative Context

The Habitats Directive provides legal protection for habitats and species of European importance. The overall aim of the Habitats Directive is to maintain or restore the "favourable conservation status" of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Council Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European sites (also known as Natura 2000 sites).

AA is required by the Habitats Directive, as transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Planning and Development Act 2000 (as amended). AA is an assessment of the potential for adverse or negative effects of a plan or project, in combination with other plans or projects, on the conservation objectives of a European site. These sites consist of SACs and SPAs and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

1.3 Approach

The Draft Plan was informed by a Stage 2 AA and a Natura Impact Report has been prepared to accompany it on public display. Mitigation was integrated into the Draft Plan that allows the Natura Impact Report to conclude that that the Draft Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in combination with other plans or projects¹. The Draft Plan and AA Natura Impact Report were placed on public display and submissions were invited.

¹ Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be: a) no alternative solution available, b) imperative reasons of overriding public interest for the plan to proceed; and c) Adequate compensatory measures in place.

Submissions received resulted in amendments being proposed to the Plan. These amendments are the subject of this Screening for AA report.

The Screening for AA is based on best scientific knowledge and has utilised ecological and hydrological expertise. In addition, a detailed online review of published scientific literature and grey literature² was conducted. This included a detailed review of the National Parks and Wildlife (NPWS) website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives.

The ecological desktop study completed for the AA of Draft Plan and the Screening for AA for Proposed Amendments comprised the following elements:

- Identification of European sites within 15km of the Plan boundary with identification of potential pathways links for specific sites (if relevant) greater than 15km from the Plan boundary;
- Review of the NPWS site synopsis and conservation objectives for European sites with identification of potential pathways from the Plan area; and
- Examination of available information on protected species.

There are four main stages in the AA process as follow:

Stage One: Screening

The process that identifies the likely impacts upon a European site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant.

Stage Two: Appropriate Assessment

The consideration of the impact on the integrity of the European site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is proposed to ensure no significant adverse impacts on European sites, then the process may end at this stage. However, if the likelihood of significant impacts remains, then the process must proceed to Stage Three.

Stage Three: Assessment of Alternative Solutions

The process that examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. This approach aims to avoid any impacts on European sites by identifying possible impacts early in the plan-making process and avoiding such impacts. Second, the approach involves the application of mitigation measures, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If potential impacts on European sites remain, the approach requires the consideration of alternative solutions. If no alternative solutions are identified and the plan/project is required for imperative reasons of overriding public interest, then compensation measures are required for any remaining adverse effect(s).

The assessment of potential effects on European sites is conducted following a standard source-pathway-receptor³ model, where, in order for an effect to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the model is sufficient to conclude that a potential effect is not of any relevance or significance.

In the interest of this report, receptors are the ecological features that are known to be utilised by the qualifying interests or special conservation interests of a European site. A source is any identifiable element of the Plan provision that is known to interact with ecological processes. The pathways are any

² Various documents where publishing, in journals for example, is not the primary activity of the producing body. Examples include: conference presentations; regulatory data; unpublished trial data; government publications; and dissertations/theses.

³ Source(s) – e.g. pollutant run-off from proposed works; Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats; and Receptor(s) – qualifying aquatic habitats and species of European sites.

connections or links between the source and the receptor. This report provides information on whether direct, indirect and cumulative adverse effects could arise from the Plan and the Proposed Amendments.

The AA exercise has been prepared taking into account legislation including the aforementioned legislation and guidance including the following:

- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2009;
- "Commission Notice: Managing Natura 2000 sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", European Commission 2018;
- "Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC", European Commission Environment DG, 2002;
- "Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC", European Commission, 2000; and
- Practice Note PN01: Appropriate Assessment Screening for Development Management, Office of the Planning Regulator, 2021.

This evaluation has been made in view of the conservation objectives of the habitats or species, for which the relevant European sites have been designated.

Section 2 Description of the Draft Plan, to which the Proposed Amendments relate

A mandatory Local Area Plan is required for Carlow Town having regard to Section 19 of the Planning and Development Act 2000 (as amended). In accordance with Section 18(2) of the Act, Carlow County Council and Laois County Council are collaborating in the preparation of the Draft Plan.

The Draft Plan addresses spatial planning in the Carlow-Graiguecullen area and identifies the various social, economic, and environmental issues of relevance. Policies, objectives, and related provisions are outlined to guide future development in accordance with the proper planning and sustainable development of the area.

The Draft Plan comprises a written statement and combined land use zoning map encompassing Carlow Town, Carlow Town Environs, and Graiguecullen. The land use zonings for Carlow Town (i.e., former Carlow Town Council area), were adopted in May 2022 as part of the preparation of the Carlow County Development Plan 2022-2028 and have been reflected in the Draft Plan.

The written statement and supporting maps comprise the primary policy document for the Draft JULAP and is set out over 12 Chapters as follows:

- Chapter 1 - Plan Review and Context
- Chapter 2 - Carlow-Graiguecullen Strategic Planning and Vision
- Chapter 3 - Core Strategy and Housing
- Chapter 4 - Economic Development, Retail and Tourism
- Chapter 5 - Urban Design, Town Centre and Regeneration
- Chapter 6 - Sustainable Travel and Transportation
- Chapter 7 - Infrastructure and Environmental Services
- Chapter 8 - Sustainable Communities
- Chapter 9 - Built Heritage
- Chapter 10 - Natural Heritage and Amenity
- Chapter 11 - Climate Action
- Chapter 12 - Land Use Zoning Objectives and Implementation

The Draft Plan includes appendices and associated environmental reports i.e., the SEA Environmental Report, this Appropriate Assessment Natura Impact Report, and a Strategic Flood Risk Assessment. An Area Based Transport Assessment has also been prepared for the Urban Area. These documents complement and contribute to the evidence-led approach to the formulation of the written statement and supporting maps. In the event of any conflict or ambiguity between what is contained within the Written Statement and the supporting maps, the Written Statement shall take precedence. In the full interpretation of all policies and objectives for Carlow-Graiguecullen, it is essential that both the Carlow and Laois County Development Plans, as overarching policy documents, are read in tandem with the Draft Plan. Where conflicting policies and objectives arise between these County Development Plans and the Joint Urban Local Area Plan, the policies and objectives of the County Development Plans, as they apply to lands in the functional area of County Carlow or County Laois, shall take precedence.

The Proposed Amendments are outlined in detail in the accompanying Proposed Amendments document. The Amendments propose a number of text and map-based changes to the Draft Plan.

Section 3 Screening for Appropriate Assessment

3.1 Introduction to Screening

This stage of the process identifies any potential significant affects to European sites from a project or plan, either alone or in combination with other projects or plans.

An important element of the AA process is the identification of the “conservation objectives”, “Qualifying Interests” (QIs) and/ or “Special Conservation Interests” (SCIs) of European sites requiring assessment. QIs are the habitat features and species listed in Annexes I and II of the Habitats Directive for which each European site has been designated and afforded protection. SCIs are wetland habitats and bird species listed within Annexes I and II of the Birds Directive. It is also vital that the threats to the ecological/environmental conditions that are required to support QIs and SCIs are considered as part of the assessment.

The following NPWS Generic Conservation Objectives have been considered in the screening:

- For SACs, to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected; and
- For SPAs, to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

Where available, Site-Specific Conservation Objectives (SSCOs) designed to define favourable conservation status for a particular habitat⁴ or species⁵ at that site have been considered.

3.2 Identification of Relevant European Sites

The Department of the Environment (2009) Guidance on AA recommends a 15 km buffer zone to be considered. A review of all sites within this zone has allowed a determination to be made that in the absence of significant hydrological links the characteristics of the Proposed Amendments will not impose effects beyond the 15 km buffer.

Details of European sites that occur within 15 km of the Plan is listed in Table 3.1. European sites and EPA Rivers and Catchments are also mapped in Figure 3.2 below. Information on QIs, SCIs and site-specific vulnerabilities and sensitivities (see Appendix I) and background information (such as that within Ireland’s Article 17 Report to the European Commission, site synopses and Natura 2000 standard data forms) has been considered by the AA screening assessment. Conservation objectives that have been considered by the assessment are included in the following NPWS documents:

- NPWS (2011) Conservation Objectives for River Barrow and River Nore SAC [IE0002162] Version 1.
- NPWS (2011) Conservation Objectives for Slaney River Valley SAC [IE0000781] Version 1.
- NPWS (2019) Conservation Objectives for Holdenstown Bog SAC [IE0001757] Version 1.
- NPWS (2019) Conservation Objectives for Blackstairs Mountains SAC [IE0000770] Version 1.
- NPWS (2024) Conservation Objectives for Seas off Wexford SPA [IE0004237] Version 1.

The assessment considers available conservation objectives. Since conservation objectives focus on maintaining the favourable conservation condition of the QIs/SCIs of each site, the screening process concentrated on assessing the potential effects of the Proposed Amendments against the QIs/SCIs of each site. The conservation objectives for each site were consulted throughout the assessment process.

⁴ Favourable conservation status of a habitat is achieved when: its natural range, and area it covers within that range, are stable or increasing; the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable.

⁵ 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; 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.

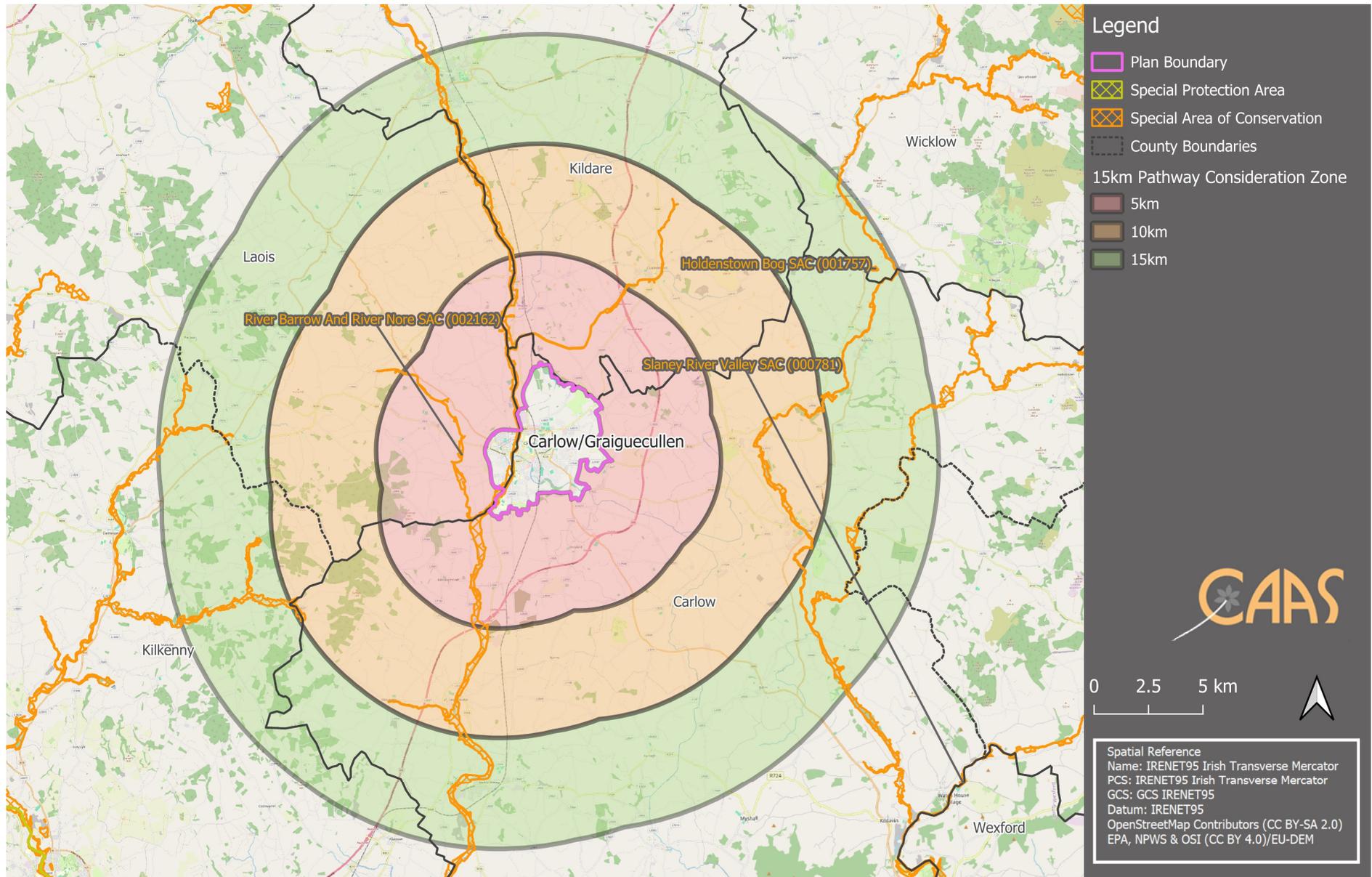


Figure 3.1 European sites and Pathway Consideration Zones up to 15 km from the Draft Plan area

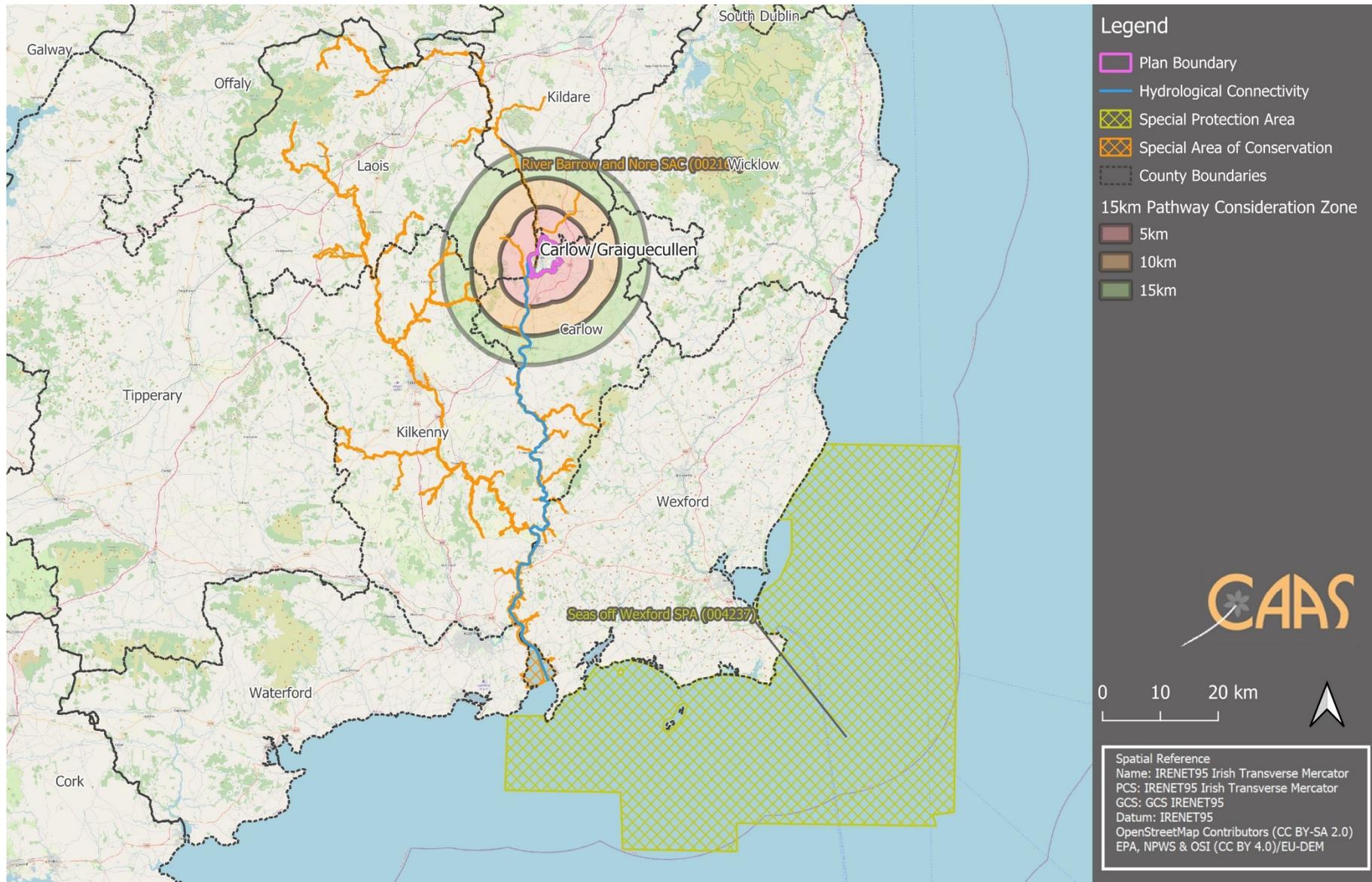


Figure 3.2 European sites⁶ occurring within the same groundwater bodies⁷ as the Plan area

⁶ Special Areas of Conservation and/or Special Protection Areas with groundwater sensitive Qualifying Interests

⁷ Source: EPA datasets – accessed at: <https://gis.epa.ie/EPAMaps/>

3.3 Assessment Criteria and Screening

3.3.1 Is the Plan Necessary to the Management of European Sites?

The overarching objective of the Plan, to which the Proposed Amendments relate, is not the nature conservation management of the sites, but to coordinate and plan the future development of the area to which the Plan relates. Therefore, the Plan, to which the Proposed Amendments relate, is not considered to be directly connected with or necessary to the management of European sites.

3.3.2 Elements of the Plan with Potential to Give Rise to Effects

The Plan, to which the Proposed Amendments relate, provides a framework for the sustainable development of the Carlow-Graiguecullen area. Draft Plan elements that could potentially affect the integrity of European sites include:

- The Plan's provisions, including those relating to housing, economic development, retail and tourism, urban design, town centre and regeneration, sustainable travel and transportation, infrastructure and environmental services, sustainable communities, built heritage, natural heritage, green infrastructure and landscape, climate action and land use zoning and implementation, which introduce sources for potential effects through construction phase such as habitat loss, light pollution, disturbance effects and hydrological interactions through surface hydrological connectivity and/or shared groundwater sources;
- Loading pressures from the operational phase of developments – these sources could result in habitat loss/fragmentation, light pollution, disturbance effects and interactions with water quality (surface and/or groundwater); and
- Increases in visitor numbers to ecologically sensitive areas during the operational phase of developments which have potential to introduce sources for significant effects, such as recreational and tourism developments.

The existing Draft Plan has already been informed by a Stage 2 AA and a Natura Impact Report has been prepared. Mitigation was integrated into the Draft Plan that allowed the Natura Impact Report to conclude that that the Draft Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in combination with other plans or projects⁸.

3.3.3 Screening of Sites

Table 3.1 and Table 3.2 examine whether there is potential for significant effects on European Sites considering information provided above.

⁸ Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be:
a) no alternative solution available,
b) imperative reasons of overriding public interest for the plan to proceed; and
c) Adequate compensatory measures in place.

Table 3.1 Screening of European sites within 15 km of the Plan boundary

Ref	AA Screening Consideration
1	This amendment would further contribute towards provisions related to this sector/topic that are already contained within the Draft Plan. Considering the measures that have been already integrated into the Draft Plan and the existing Development Plans that contribute towards the protection of European sites, all potential risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed. Consequently, Stage 2 AA is not required. Refer also to Appendix II.
2	The update to terminology/language/wording/mapping would not result in effects on any European site. Consequently, Stage 2 AA is not required.
3	This amendment relates to Plan text that sets the context for, summarises and/or provides clarification to Plan provisions. It does not interact with existing Plan provisions to an extent that it would result in effects on any European site. Consequently, Stage 2 AA is not required.
4	This amendment adds more detail but would not have the potential to result in result in effects on any European site. Consequently, Stage 2 AA is not required.
5	This amendment provides consistency with other parts of the Plan and/or with the wider planning and policy framework. It would not interact with Plan provisions to the extent that it would result in effects on any European site. Consequently, Stage 2 AA is not required.
6	Removal of this provision/text would remove the potential for any environmental effects; however, removal of the provision/text would not be likely to result in effects on any European site. Consequently, Stage 2 AA is not required.

Proposed Amendment No.	AA Screening Consideration Reference
1	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
2	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
3	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
4	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
5	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
6	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
7	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
8	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
9	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
10	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
11	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
12	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
13	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
14	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
15	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
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25	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
26	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
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33	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
34	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
35	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
36	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
37	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
38	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
39	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required

Screening for AA Report for Proposed Amendments

Proposed Amendment No.	AA Screening Consideration Reference
40	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
41	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
42	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
43	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
44	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
45	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
46	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
47	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
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50	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
51	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
52	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
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54	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
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58	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
59	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
60	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
61	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
62	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
63	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required
64	Selection of Considerations from Ref. 1 to 6 – Stage 2 AA not required

Table 3.2 Screening of European sites within 15 km of the Plan boundary

Site Code	Site Name	Distance (km)	Qualifying Feature	Analysis of Potential for Likely Significant Effects	Likelihood of Significant Effects	Likelihood of In-Combination Effects
002162	River Barrow and River Nore SAC	Within	Atlantic salmon (<i>Salmo salar</i>) [1106], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330], Estuaries [1130], European dry heaths [4030], Brook lamprey (<i>Lampetra planeri</i>) [1096], Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) [1016], Killarney fern (<i>Trichomanes speciosum</i>) [1421], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Nore Pearl Mussel (<i>Margaritifera durrovensis</i>) [1990], Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0], Otter (<i>Lutra lutra</i>) [1355], Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220], Reefs [1170], River lamprey (<i>Lampetra fluviatilis</i>) [1099], <i>Salicornia</i> and other annuals colonising mud and sand [1310], Sea lamprey (<i>Petromyzon marinus</i>) [1095], Twaite shad (<i>Alosa fallax</i>) [1103], Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260], White-clawed crayfish (<i>Austropotamobius pallipes</i>) [1092], Mudflats and sandflats not covered by seawater at low tide [1140]	<p>The Draft Plan, to which the Proposed Amendments relate, provides a framework for land use development and activities with potential for construction and operation source effects throughout the Plan area. This SAC is sensitive to direct land use management activities, hydrological interactions and groundwater interactions.</p> <p>Considering the QIs of this SAC, the nature of the Draft Plan, and given that the SAC is partially within the Draft Plan area, sources for potential significant effect have been identified for direct land use management activities and for hydrological interactions, via both groundwater and surface hydrological interactions, within the Draft Plan. Considering groundwater interactions: groundwater is reliant on and interacts with a myriad of hydrogeological and landscape characteristics⁹; and has been shown to be heavily influenced by the direct management of soil, rivers and streams¹⁰. It has also been shown that the effects from groundwater contaminants are diluted through volume of water¹¹. However, given that this SAC exists partially within the Draft Plan area, a pathway for likely significant effects via groundwater has been identified as: the SAC and Plan area are within the same groundwater body¹²; and sources for potential effects regarding groundwater interactions have been identified in the Draft Plan.</p> <p>There is likelihood of potential significant effect via the pathways and sources identified above arising from the Draft Plan that have already been addressed by the integration of mitigation into the Draft Plan. Therefore, no further consideration is required.</p>	No - see also Table 3.1	No - see also Table 3.1
000781	Slaney River Valley SAC	6.5	Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260], Brook lamprey (<i>Lampetra planeri</i>) [1096], Estuaries [1130], Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029], Harbour seal (<i>Phoca vitulina</i>) [1365], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Mudflats and sandflats not covered by seawater at low tide [1140], Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0], Otter (<i>Lutra lutra</i>) [1355], River lamprey (<i>Lampetra fluviatilis</i>) [1099], Sea lamprey (<i>Petromyzon marinus</i>) [1095], Twaite shad (<i>Alosa fallax</i>) [1103], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Atlantic salmon (<i>Salmo salar</i>) [1106], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	<p>The Draft Plan, to which the Proposed Amendments relate, provides a framework for land use development and activities with potential for construction and operation source effects throughout the Plan area. This SAC is sensitive to direct land use management activities, hydrological interactions, groundwater interactions. This site exists 6.5 km outside of the Draft Plan area. There is no direct surface hydrological connection between the Draft Plan area and this site and there is no shared groundwater body between the Plan area and this European site.</p> <p>Considering the QIs of this SAC and given the nature of the Draft Plan and the distances involved, there are no potential pathways for direct land use management effects, as the site is outside of the Plan area. In addition, there are no direct surface hydrological or groundwater pathways between the site and the Plan area, therefore, there are no pathways for potential significant effect for hydrological interactions to the SAC.</p> <p>Thus, there are no sources with pathways for likely significant effects identified and no further assessment is required.</p>	No - see also Table 3.1	No - see also Table 3.1
001757	Holdenstown Bog SAC	13.9	Transition mires and quaking bogs [7140]	<p>The Draft Plan, to which the Proposed Amendments relate, provides a framework for land use development and activities with potential for construction and operation source effects throughout the Plan area. This SAC is sensitive to direct land use management activities, hydrological interactions and groundwater interactions. This site exists 13.89 km outside of the Draft Plan area. There is no direct surface hydrological connection between the Draft Plan area and this site and there is no shared groundwater body between the Plan area and this European site.</p> <p>Considering the QI of this SAC and given the nature of the Draft Plan and the distances involved, there are no potential pathways for direct land use management effects, as the site is outside of the Plan area. In addition, there are no direct surface hydrological or groundwater pathways between the</p>	No - see also Table 3.1	No - see also Table 3.1

⁹ Wehncke, E.V. & Mariano, N.A., 2021. Groundwater and Its Role in Maintaining the Ecological Functions of Ecosystems—A Review. *Intensified Land and Water Use: A Holistic Perspective of Local to Regional Integration*, pp.55-86.

¹⁰ Silva, A.C.F. et al. 2012. Estuarine biodiversity as an indicator of groundwater discharge. *Estuarine, Coastal and Shelf Science*, 97, pp.38-43.

¹¹ Lasagna, M. et al. 2013. Effect of the dilution process on the attenuation of contaminants in aquifers. *Environmental earth sciences*, 70(6), pp.2767-2784.

¹² EPA groundwater datasets. Available at: <https://gis.epa.ie/EPAMaps/>

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Site Code	Site Name	Distance (km)	Qualifying Feature	Analysis of Potential for Likely Significant Effects	Likelihood of Significant Effects	Likelihood of In-Combination Effects
				<p>site and the Plan area, therefore, there are no pathways for potential significant effect for hydrological interactions to the SAC.</p> <p>Thus, there are no sources with pathways for likely significant effects identified and no further assessment is required.</p>		
000770	Blackstairs Mountains SAC	19.4	European dry heaths [4030], Northern Atlantic wet heaths with Erica tetralix [4010]	<p>The Draft Plan, to which the Proposed Amendments relate, provides a framework for land use development and activities with potential for construction and operation source effects throughout the Plan area. This SAC is sensitive to direct land use management activities, hydrological interactions and groundwater interactions. This site exists 19.40 km outside of the Draft Plan area. There is no direct surface hydrological connection between the Draft Plan area and this site. However, this European site has groundwater sensitive Qualifying Interests and does share the same groundwater body as the Draft Plan area.</p> <p>Considering groundwater interactions: groundwater is reliant on and interacts with a myriad of hydrogeological and landscape characteristics¹³, and has been shown to be heavily influenced by the direct management of soil, rivers and streams¹⁴. It has also been shown that the effects from groundwater contaminants are diluted through volume of water¹⁵. Considering the nature of the draft Plan, and distance between the Draft Plan area and this SAC, there is considerable dilution effect, and therefore no pathway for potential significant effects to the QIs has been identified. Considering the QIs of this SAC and given the nature of the Draft Plan and the distances involved, there are no pathways for direct land use management effects, as the site is outside of the Plan area. In addition, there are no direct surface hydrological pathways between the site and the Plan area, therefore, there are no pathways for potential significant effect for hydrological interactions to the SAC.</p> <p>Thus, there are no sources with pathways for likely significant effects identified and no further assessment is required.</p>	No - see also Table 3.1	No - see also Table 3.1
004237	Seas off Wexford SPA	55.27	Fulmar (<i>Fulmarus glacialis</i>) [A009], Manx Shearwater (<i>Puffinus puffinus</i>) [A013], Roseate Tern (<i>Sterna dougallii</i>) [A192], Kittiwake (<i>Rissa tridactyla</i>) [A188], Little Tern (<i>Sterna albifrons</i>) [A195], Shag (<i>Phalacrocorax aristotelis</i>) [A018], Herring Gull (<i>Larus argentatus</i>) [A184], Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183], Puffin (<i>Fratercula arctica</i>) [A204], Common Tern (<i>Sterna hirundo</i>) [A193], Gannet (<i>Morus bassanus</i>) [A016], Guillemot (<i>Uria aalge</i>) [A199], Common Scoter (<i>Melanitta nigra</i>) [A065], Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179], Red-throated Diver (<i>Gavia stellata</i>) [A001], Sandwich Tern (<i>Sterna sandvicensis</i>) [A191], Cormorant (<i>Phalacrocorax carbo</i>) [A017], Razorbill (<i>Alca torda</i>) [A200], Mediterranean Gull (<i>Larus melanocephalus</i>) [A176], Arctic Tern (<i>Sterna paradisaea</i>) [A194]	<p>The Draft Plan, to which the Proposed Amendments relate, provides a framework for land use development and activities with potential for construction and operation source effects throughout the Plan area. This SPA is sensitive to direct land use management activities, hydrological interactions and disturbance effects. This site exists 55.27 km outside of the Draft Plan area. There is a direct surface hydrological connection between the Draft Plan area and this site.</p> <p>SCI species are sensitive to disturbance effects; in general distances beyond 2 km are seen to be sufficient to preclude such effects. These distances can vary due to factors such as species and/or time of year. Given the distance between the Draft Plan area and the SPA there are no pathways for disturbance effects identified. SCI species are highly vagile and therefore may utilise ex-situ ecological resources which may have interactions with the Draft Plan; however, at this scale landscape characteristics and the availability of alternate resources ensure the local scale interactions with ex-situ resources are not likely to have significant effects on the SPA. Considering the SCIs of this SPA, and given the nature of the Draft Plan and the distance involved between the Plan area and the SPA, and the severe dilution effect via the direct surface hydrological connection, there are no sources of effect for direct land use management, hydrological interactions or disturbance effects to the SPA.</p> <p>Thus, there are no sources with pathways for likely significant effects foreseen and no further assessment is required.</p>	No - see also Table 3.1	No - see also Table 3.1

¹³ Wehncke, E.V. & Mariano, N.A., 2021. Groundwater and Its Role in Maintaining the Ecological Functions of Ecosystems—A Review. *Intensified Land and Water Use: A Holistic Perspective of Local to Regional Integration*, pp.55-86.

¹⁴ Silva, A.C.F. et al. 2012. Estuarine biodiversity as an indicator of groundwater discharge. *Estuarine, Coastal and Shelf Science*, 97, pp.38-43.

¹⁵ Lasagna, M. et al. 2013. Effect of the dilution process on the attenuation of contaminants in aquifers. *Environmental earth sciences*, 70(6), pp.2767-2784.

3.4 Other Plans and Programmes

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or programmes that might, in combination with the plan or project, have the potential to adversely affect European sites. There are no provisions in the Proposed Amendments that introduce any potential sources for effects in addition to those already identified as being mitigated by the Stage 2 AA carried out for the Draft Plan. Therefore, there are no in combination effects identified.

Section 4 AA Screening Conclusion

This Screening for AA Report demonstrates that the implementation of the Proposed Amendments will not result in any likely significant effect on any European site.

Following the source-pathway-receptor model, the relevant attributes of European sites were assessed. No source for a likely significant effect to any European site would arise from the Proposed Amendments that have not already been considered by the existing AA process for the Draft Plan.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed through measures that have already been integrated into the Draft Plan and through existing, already in force, policies and objectives within the Carlow and Laois County Development Plans with which the Proposed Amendments and all lower tier plans/projects must comply. In addition, any future projects, plans etc. that may arise will themselves be subject to AA/Screening for AA when further details of design and location are known.

It is concluded that the Proposed Amendments will not give rise to any likely significant effects on any European sites, alone or in combination with any other plans, programmes and projects.

This report is part of the overall and ongoing AA process that is being undertaken alongside the preparation of the Draft Plan (an AA Natura Impact Report has already been placed on public display alongside the Draft Plan). It will be considered, alongside other documentation prepared as part of this process, at adoption of the Plan.

Appendix I Background information on European sites Assessed

European sites with functional connectivity (ecological pathways) to the proposed development area including their Qualifying Interests, known threats and pressures

Site Code	Site Name	Qualifying Feature	Pressure Codes	Known Threats and Pressures
000770	Blackstairs Mountains SAC	Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010], European dry heaths [4030]	G01.02, G01.03.02, E03, J01.01, A04.02, K01.01, K02.01, A04.01.02, B02	Walking, horse-riding and non-motorised vehicles, off-road motorized driving, discharges, burning down, non-intensive grazing, erosion, species composition change (succession), intensive sheep grazing, forest and plantation management & use
000781	Slaney River Valley SAC	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0], Brook lamprey (<i>Lampetra planeri</i>) [1096], Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029], Estuaries [1130], Sea lamprey (<i>Petromyzon marinus</i>) [1095], Mudflats and sandflats not covered by seawater at low tide [1140], Harbour seal (<i>Phoca vitulina</i>) [1365], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Twaité shad (<i>Alosa fallax</i>) [1103], Otter (<i>Lutra lutra</i>) [1355], Atlantic salmon (<i>Salmo salar</i>) [1106], Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330], River lamprey (<i>Lampetra fluviatilis</i>) [1099]	A01, B02, E03, H01.01, E05, H01.08, C01.01, F03.02.04, A08, A09, A10.01, J02.05.02, J02, D03.01.03, H01, F01.03, I01, H01.05, J02.06.01, D01.05, F02.03.01, J02.12.02, D01.01, K01.01, J02.06, J02.11	Cultivation, forest and plantation management & use, discharges, pollution to surface waters by industrial plants, storage of materials, diffuse pollution to surface waters due to household sewage and waste waters, sand and gravel extraction, predator control, fertilisation, irrigation, removal of hedges and copses or scrub, modifying structures of inland water courses, human induced changes in hydraulic conditions, fishing harbours, pollution to surface waters (limnic & terrestrial, marine & brackish), bottom culture, invasive non-native species, diffuse pollution to surface waters due to agricultural and forestry activities, surface water abstractions for agriculture, bridge, viaduct, bait digging or collection, dykes and flooding defence in inland water systems, paths, tracks, cycling tracks, erosion, water abstractions from surface waters, siltation rate changes, dumping, depositing of dredged deposits
001757	Holdenstown Bog SAC	Transition mires and quaking bogs [7140]	A01, B01, A04, D02.01.01, X, J02.01.03, J02	Cultivation, forest planting on open ground, grazing, suspended electricity and phone lines, no threats or pressures, infilling of ditches, dykes, ponds, pools, marshes or pits, human induced changes in hydraulic conditions
002162	River Barrow and River Nore SAC	Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) [1016], Sea lamprey (<i>Petromyzon marinus</i>) [1095], Brook lamprey (<i>Lampetra planeri</i>) [1096], Killarney fern (<i>Trichomanes speciosum</i>) [1421], White-clawed crayfish (<i>Austropotamobius pallipes</i>) [1092], Mudflats and sandflats not covered by seawater at low tide [1140], Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029], Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260], Twaité shad (<i>Alosa fallax</i>) [1103], <i>Salicornia</i> and other annuals colonising mud and sand [1310], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0], Otter (<i>Lutra lutra</i>) [1355], Reefs [1170], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Estuaries [1130], European dry heaths [4030], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330], Nore Pearl Mussel (<i>Margaritifera durrovensis</i>) [1990], River lamprey (<i>Lampetra fluviatilis</i>) [1099], Atlantic salmon (<i>Salmo salar</i>) [1106], Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0], Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220], Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	C01.01.01, A04.01.01, B02, F02.03, F02, C01.03, J02.02.01, E02, B02.01.01, D03.01, B05, B07, I01, J02.06, F02.01.02, J02, A02.01, J02.12.02, A10.01, J02.05.02, H01, F01.01, K01.01, J03.02.01, M01	Sand and gravel quarries, intensive cattle grazing, forest and plantation management & use, leisure fishing, fishing and harvesting aquatic resources, peat extraction, dredging or removal of limnic sediments, industrial or commercial areas, forest replanting (native trees), port areas, use of fertilizers (forestry), forestry activities not referred to above, invasive non-native species, water abstractions from surface waters, netting, human induced changes in hydraulic conditions, agricultural intensification, dykes and flooding defence in inland water systems, removal of hedges and copses or scrub, modifying structures of inland water courses, pollution to surface waters (limnic & terrestrial, marine & brackish), intensive fish farming, intensification, erosion, reduction in migration or migration barriers, changes in abiotic conditions
004237	Seas off Wexford SPA	Manx Shearwater (<i>Puffinus puffinus</i>) [A013], Red-throated Diver (<i>Gavia stellata</i>) [A001], Roseate Tern (<i>Sterna dougalli</i>) [A192], Fulmar (<i>Fulmarus glacialis</i>) [A009], Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179], Shag (<i>Phalacrocorax aristotelis</i>) [A018], Herring Gull (<i>Larus argentatus</i>) [A184], Kittiwake (<i>Rissa tridactyla</i>) [A188], Little Tern (<i>Sterna albibronis</i>) [A195], Common Tern (<i>Sterna hirundo</i>) [A193], Gannet (<i>Morus bassanus</i>) [A016], Guillemot (<i>Uria aalge</i>) [A199], Common Scoter (<i>Melanitta nigra</i>) [A065], Razorbill (<i>Alca torda</i>) [A200], Mediterranean Gull (<i>Larus melanocephalus</i>) [A176], Sandwich Tern (<i>Sterna sandvicensis</i>) [A191], Cormorant (<i>Phalacrocorax carbo</i>) [A017], Puffin (<i>Fratercula arctica</i>) [A204], Arctic Tern (<i>Sterna paradisaea</i>) [A194], Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]	N/A	N/A

Qualifying Interests of SACs that have undergone assessment including summaries of current threats and sensitivities

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
[1016]	Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	The main pressures are associated with natural succession resulting in species composition change and drying out of the habitat.	A07, A10, L01, L02	Abandonment of management/use of other agricultural and agroforestry systems (all except grassland), extensive grazing or under grazing by livestock, abiotic natural processes (e.g., erosion, silting up, drying out, submersion, salinization), natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices)	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.
[1029]	Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>)	The pressures facing this species come from a wide variety of sources (e.g. pollution from urban wastewater, development activities, farming and forestry), often quite removed from the species' habitat. Flow changes, caused by land drainage are also a significant pressure facing the species.	A26, A31, B23, B27, C05, D02, F12, F28, F31, F33	Agricultural activities generating diffuse pollution to surface or ground waters, drainage for use as agricultural land, forestry activities generating pollution to surface or ground waters, modification of hydrological conditions, or physical alteration of water bodies and drainage for forestry (including dams), peat extraction, hydropower (dams, weirs, run-off-the-river), including infrastructure, discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water, modification of flooding regimes, flood protection for residential or recreational development, other modification of hydrological conditions for residential or recreational development, abstraction of ground and surface waters (including marine) for public water supply and recreational use	Surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.

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EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
[1092]	White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	The main pressures facing this species is related to the non-indigenous crayfish species (NICS) and Crayfish Plaque, a waterborne disease specific to freshwater crayfish.	I01, I05	Invasive alien species of union concern, plant and animal diseases, pathogens and pests	Invasive species, disease, surface water dependent. Highly sensitive to hydrological change. Very highly sensitive to pollution.
[1095]	Sea Lamprey (<i>Petromyzon marinus</i>)	Most of the pressures on Sea Lampreys are associated with hydropower infrastructure, reduction of prey populations due to overharvesting, drainage and the use of both natural and synthetic fertilisers. Changes in rainfall due to climate change is also considered a significant pressure on the species.	A19, A20, A31, D02, G01, N01, N02, N03, Xo	Application of natural fertilisers on agricultural land, application of synthetic (mineral) fertilisers on agricultural land, drainage for use as agricultural land, hydropower (dams, weirs, run-off-the-river), including infrastructure, marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, temperature changes (e.g., rise of temperature & extremes) due to climate change, increases or changes in precipitation due to climate change, threats and pressures from outside the member state	Marine water dependent. Low sensitivity to hydrological changes. Coastal development, trampling from recreational activity.
[1096]	Brook Lamprey (<i>Lampetra planeri</i>)	Most of the pressures on Brook Lampreys are associated with drainage for agriculture, the use of both natural and synthetic fertilisers, tree removal. Infrastructure related to hydropower along with pollution to ground and surface water and the discharge of waste water are also considered pressures.	A19, A20, A31, B09, D02, F11, F12, N01, N02	Application of natural fertilisers on agricultural land, application of synthetic (mineral) fertilisers on agricultural land, drainage for use as agricultural land, clear-cutting, removal of all trees, hydropower (dams, weirs, run-off-the-river), including infrastructure, pollution to surface or ground water due to urban runoffs, discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water, temperature changes (e.g., rise of temperature & extremes) due to climate change	Surface water dependent. Highly sensitive to hydrological change. Availability of suitable spawning ground is a considerable issue for the species.
[1099]	River Lamprey (<i>Lampetra fluviatilis</i>)	The main pressures on River Lampreys are associated with hydropower infrastructure and changes in rainfall due to climate change. The use of synthetic and natural fertilisers, drainage and also infrastructure related to shipping are also considered to be pressures on the species.	A19, A20, A31, D02, E03, N01, N02, N03	Application of natural fertilisers on agricultural land, application of synthetic (mineral) fertilisers on agricultural land, drainage for use as agricultural land, hydropower (dams, weirs, run-off-the-river), including infrastructure, shipping lanes, ferry lanes and anchorage infrastructure (e.g., canalisation, dredging), temperature changes (e.g., rise of temperature & extremes) due to climate change, increases or changes in precipitation due to climate change	Surface water dependent. Highly sensitive to hydrological change. Availability of suitable spawning ground is a considerable issue for the species.
[1103]	Twaite Shad (<i>Alosa fallax fallax</i>)	There are a number of pressures related to this species, mainly relating to pollution, alteration of flow patterns, and habitat disturbance/	A19, A20, D02, E03, G01, G06, G12, I02, N01, N03	Application of natural fertilisers on agricultural land, application of synthetic (mineral) fertilisers on agricultural land, hydropower (dams, weirs, run-off-the-river), including infrastructure, shipping lanes, ferry lanes and anchorage infrastructure (e.g., canalisation, dredging), marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, freshwater fish and shellfish harvesting (recreational), bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), temperature changes (e.g., rise of temperature & extremes) due to climate change, increases or changes in precipitation due to climate change	Changes in management. Changes in nutrient or base status. Moderately sensitive to hydrological change.
[1106]	Salmon (<i>Salmo salar</i>)	Known pressures include exploitation at sea in commercial fisheries, interceptor fisheries in coastal waters, aquaculture and predation. In addition, the negative influence of climate change on prey structure as well as alterations in habitat and water quality are also pressures on the species.	A25, A26, B23, D02, F12, F28, G11, G19, G20, I02, J01, K05, L06, N01	Agricultural activities generating point source pollution to surface or ground waters, agricultural activities generating diffuse pollution to surface or ground waters, forestry activities generating pollution to surface or ground waters, hydropower (dams, weirs, run-off-the-river), including infrastructure, discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water, modification of flooding regimes, flood protection for residential or recreational development, illegal harvesting, collecting and taking, other impacts from marine aquaculture, including infrastructure, abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture, other invasive alien species (other than species of union concern), mixed source pollution to surface and ground waters (limnic and terrestrial), physical alteration of water bodies, interspecific relations (competition, predation, parasitism, pathogens), temperature changes (e.g., rise of temperature & extremes) due to climate change	Disease, parasites and barriers to movement.
[1130]	Estuaries	Most of the pressures on estuaries come from various sources of pollution, including domestic wastewater, agriculture and marine aquaculture. Alien invasive species such as the naturalised Pacific oyster (<i>Magallana gigas</i>) are also recognised as a significant pressure	A28, F20, G16, I02, XU	Agricultural activities generating marine pollution, residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution, marine aquaculture generating marine pollution, other invasive alien species (other than species of union concern), unknown pressure	Inappropriate development, changes in turbidity
[1140]	Mudflats and sandflats not covered by seawater at low tide	Pressures on mudflats and sandflats are partly caused by pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (<i>Magallana gigas</i>).	A28, F20, G16	Agricultural activities generating marine pollution, residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution, marine aquaculture generating marine pollution	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Changes to salinity and tidal regime. Coastal development.
[1170]	Reefs	The main pressures on reefs come from fishing methods that damage the seafloor.	G01, G03	Marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, marine fish and shellfish harvesting (professional, recreational) activities causing physical loss and disturbance of seafloor habitats	Sensitive to disturbance and pollution.
[1310]	Salicornia and other annuals colonising mud and sand	Pressures on Salicornia mud are caused by alien species and overgrazing by livestock	A09, I02	Intensive grazing or overgrazing by livestock, other invasive alien species (other than species of union concern)	Marine water dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Infilling, reclamation, invasive species.
[1330]	Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)	The main pressures on Atlantic salt meadows are from agriculture, including ecologically unstable grazing regimes and land reclamation, and the invasive non-native species common cord-grass (<i>Spartina anglica</i>).	A09, A33, A36, F07, F08, I02	Intensive grazing or overgrazing by livestock, modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams), agriculture activities not referred to above, sports, tourism and leisure activities, modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal

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EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
				recreational infrastructure and areas (including sea defence or coast protection works and infrastructures), other invasive alien species (other than species of union concern)	regime. Overgrazing, erosion and accretion.
[1355]	Otter (<i>Lutra lutra</i>)	There are no pressures facing this species	Xxp, Xxt	No pressures, no threats	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitivity to pollution.
[1365]	Harbour Seal (<i>Phoca vitulina</i>)	Pressures on this species in Irish waters mainly involve commercial vessel-based activities such as local/regional prey removal by fisheries or by-catch in fisheries, or geophysical seismic exploration; other possible impacts may occur from coastal tourism and localised human disturbance at haul-out sites.	C09, G01	Geotechnical surveying, marine fishing and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species	Prey availability, reduction in available habitat and water quality.
[1410]	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	Most of the pressures on Mediterranean salt meadows are associated with agriculture, including overgrazing, under-grazing and land reclamation.	A09, A10, A33, A36	Intensive grazing or overgrazing by livestock, extensive grazing or under grazing by livestock, modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams), agriculture activities not referred to above	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Coastal development and reclamation.
[1421]	Killarney Fern (<i>Trichomanes speciosum</i>)	There are no pressures facing this species.	Xxp, Xxt	No pressures, no threats	Land use management and direct impacts.
[3260]	Water courses of plain to montane levels with vegetation (<i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i>)	The majority of pressures on this habitat are caused by damage through hydrological and morphological change, eutrophication and other water pollution.	A25, A26, B23, C05, F11, F12, F13, K01, K04, K05	Agricultural activities generating point source pollution to surface or ground waters, agricultural activities generating diffuse pollution to surface or ground waters, forestry activities generating pollution to surface or ground waters, peat extraction, pollution to surface or ground water due to urban runoffs, discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water, plants, contaminated or abandoned industrial sites generating pollution to surface or ground water, abstraction from groundwater, surface water or mixed water, modification of hydrological flow, physical alteration of water bodies	Surface water dependent Highly sensitive to hydrological change and direct physical interactions.
[4010]	Northern Atlantic wet heaths with <i>Erica tetralix</i>	Overgrazing, burning, wind farm development and erosion are the main pressures associated with this habitat, along with nitrogen deposition from agricultural activities that generate air pollution.	A09, A11, A27, B01, D01, L01, N01, N02	Intensive grazing or overgrazing by livestock, burning for agriculture, agricultural activities generating air pollution, conversion to forest from other land uses, or afforestation (excluding drainage), wind, wave and tidal power, including infrastructure, abiotic natural processes (e.g., erosion, silting up, drying out, submersion, salinization), temperature changes (e.g., rise of temperature & extremes) due to climate change	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
[4030]	European dry heaths	A number of significant pressures were recorded for this habitat in the current reporting period, particularly overgrazing by sheep and burning for agriculture with afforestation and wind farms also being recognised as pressures.	A09, A11, B01, D01, N01, N02	Intensive grazing or overgrazing by livestock, burning for agriculture, conversion to forest from other land uses, or afforestation (excluding drainage), wind, wave and tidal power, including infrastructure, temperature changes (e.g., rise of temperature & extremes) due to climate change	Moderately sensitive to hydrological change. Changes in management. Changes in nutrient status.
[6430]	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	Pressures on the habitat include invasive species; and agricultural intensification and drainage in the lowlands.	A09, A31, I01, I02	Intensive grazing or overgrazing by livestock, drainage for use as agricultural land, invasive alien species of union concern, other invasive alien species (other than species of union concern)	Changes in management such as grazing regime. Changes in nutrient or base status. Changes to vegetation composition. Introduction of alien species.
[7140]	Transition mires and quaking bogs	The main pressures facing transition mires in Ireland are afforestation, water pollution, drainage and hydrological changes with grazing/agricultural management also being a pressure.	A06, A09, B01, C05, J01, K01, K02, K04, L02	Abandonment of grassland management (e.g., cessation of grazing or of mowing), intensive grazing or overgrazing by livestock, conversion to forest from other land uses, or afforestation (excluding drainage), peat extraction, mixed source pollution to surface and ground waters (limnic and terrestrial), abstraction from groundwater, surface water or mixed water, drainage, modification of hydrological flow, natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices)	Surface water interactions. Groundwater isolated system with sensitivities related to the bog basin. Drainage and land use management are the key things.
[7220]	Petrifying springs with tufa formation (<i>Cratoneurion</i>)	Pressures related to this habitat are associated with drainage, pollution to ground and surface waters, recreational activities, infrastructure, overgrazing and abandonment of grassland management.	A06, A10, E01, F07, H08, J01, K02, K04, L02	Abandonment of grassland management (e.g., cessation of grazing or of mowing), extensive grazing or under grazing by livestock, roads, paths, railroads and related infrastructure (e.g., bridges, viaducts, tunnels), sports, tourism and leisure activities, other human intrusions and disturbance not mentioned above (dumping, accidental and deliberate disturbance of bat roosts (e.g., caving)), mixed source pollution to surface and ground waters (limnic and terrestrial), drainage, modification of hydrological flow, natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices)	Surface and groundwater dependant. Highly sensitive to hydrological changes. Highly sensitive to pollution.
[91A0]	Old sessile oak woods with Ilex and Blechnum in the British Isles	The significant pressure facing this habitat are associated with invasive non-native species such as <i>Rhododendron ponticum</i> , cherry laurel (<i>Prunus laurocerasus</i>) and beech (<i>Fagus sylvatica</i>) and overgrazing by deer.	A09, B09, I02, I04, M07	Intensive grazing or overgrazing by livestock, clear-cutting, removal of all trees, other invasive alien species (other than species of union concern), problematic native species, storm, cyclone	Changes in management. Changes in nutrient or base status. Introduction of alien species.
[91E0]	Alluvial forests with Alder and Ash (<i>Alnus glutinosa</i> , <i>Fraxinus excelsior</i> , <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	Many of the pressures facing this habitat include invasive species, particularly sycamore (<i>Acer pseudoplatanus</i>), beech (<i>Fagus sylvatica</i>), Indian balsam (<i>Impatiens glandulifera</i>) and currant species (<i>Ribes nigrum</i> and <i>R. rubrum</i>) as well as some native species such as brambles (<i>Rubus fruticosus</i> agg.) and common nettle, along with over felling.	B09, I02, I04, I05	Clear-cutting, removal of all trees, other invasive alien species (other than species of union concern), problematic native species, plant and animal diseases, pathogens and pests	Surface and groundwater dependent. Highly sensitive to hydrological changes. Changes in management.

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Special Conservation Interests and Vulnerabilities of SPAs that have undergone assessment

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A001	Red-throated Diver	<i>Gavia stellata</i>	I02, F07, C05, G06, L06, N03, A11, B01, I05, N05, G01, D01	Other invasive alien species (other than species of union concern), sports, tourism and leisure activities, peat extraction, freshwater fish and shellfish harvesting (recreational), interspecific relations (competition, predation, parasitism, pathogens), increases or changes in precipitation due to climate change, burning for agriculture, conversion to forest from other land uses, or afforestation (excluding drainage), plant and animal diseases, pathogens and pests, change of habitat location, size, and / or quality due to climate change, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, wind, wave and tidal power, including infrastructure
A009	Fulmar	<i>Fulmarus glacialis</i>	I02, N06, N07, F22, F23, G12, D01, G01	Other invasive alien species (other than species of union concern), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species
A013	Manx Shearwater	<i>Puffinus puffinus</i>	A09, F22, F23, G12, I02, N07, G01, N06	Intensive grazing or overgrazing by livestock, residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, desynchronisation of biological / ecological processes due to climate change
A016	Gannet	<i>Morus bassanus</i>	F22, F23, G12, D01, F07, J02, N06, N07	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, mixed source marine water pollution (marine and coastal), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A017	Cormorant	<i>Phalacrocorax carbo carbo</i>	G12, D01, F07, G10, J02, N06, N07, N01	Bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, illegal shooting/killing, mixed source marine water pollution (marine and coastal), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, temperature changes (e.g. rise of temperature & extremes) due to climate change
A018	Shag	<i>Phalacrocorax aristotelis</i>	F22, F23, G12, D01, F07, I02, J02, N06, N07	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, other invasive alien species (other than species of union concern), mixed source marine water pollution (marine and coastal), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A065	Common Scoter	<i>Melanitta nigra</i>	L06, A06, I02, I04, A26, F07, G12, G01, D01, E02	Interspecific relations (competition, predation, parasitism, pathogens), abandonment of grassland management (e.g. cessation of grazing or mowing), other invasive alien species (other than species of union concern), problematic native species, agricultural activities generating diffuse pollution to surface or ground waters, sports, tourism and leisure activities, bycatch and incidental killing (due to fishing and hunting activities), marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, wind, wave and tidal power, including infrastructure, shipping lanes and ferry lanes transport operations
A176	Mediterranean Gull	<i>Larus melanocephalus</i>	I02, I04	Other invasive alien species (other than species of union concern), problematic native species
A179	Black-headed Gull	<i>Larus ridibundus</i>	F22, F23, I02, I04, D01, M08	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), other invasive alien species (other than species of union concern), problematic native species, wind, wave and tidal power, including infrastructure, flooding (natural processes)
A183	Lesser Black-backed Gull	<i>Larus fuscus</i>	F22, F23, D01, I02	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), wind, wave and tidal power, including infrastructure, other invasive alien species (other than species of union concern)
A184	Herring Gull	<i>Larus argentatus argentus</i>	F22, F23, D01, I02	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), wind, wave and tidal power, including infrastructure, other invasive alien species (other than species of union concern)
A188	Kittiwake	<i>Rissa tridactyla</i>	F22, F23, G12, D01, G01, L06, N06, N07	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, interspecific relations (competition, predation, parasitism, pathogens), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A191	Sandwich Tern	<i>Thalasseus sandvicensis</i>	G12, I02, A09, D01, F07, I04, M08, N06, N07	Bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), intensive grazing or overgrazing by livestock, wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, problematic native species, flooding (natural processes), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A192	Roseate Tern	<i>Sterna dougalli</i>	G12, N07, I02, I04, L06, M08, N06, D01, F07, G01	Bycatch and incidental killing (due to fishing and hunting activities), decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, other invasive alien species (other than species of union concern), problematic native species, interspecific relations (competition, predation, parasitism, pathogens), flooding (natural processes), desynchronisation of biological / ecological processes due to climate change, wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species
A193	Common Tern	<i>Sterna hirundo</i>	A09, G12, I02, I04, J02, L06, M08, D01, F07, G01, N06, N07	Intensive grazing or overgrazing by livestock, bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), problematic native species, mixed source marine water pollution (marine and coastal), interspecific relations (competition, predation, parasitism, pathogens), flooding (natural processes), wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A194	Arctic Tern	<i>Sterna paradisaea</i>	A09, G12, I02, I04, L06, M08, N06, N07, D01, F07, G01	Intensive grazing or overgrazing by livestock, bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), problematic native species, interspecific relations (competition, predation, parasitism, pathogens), flooding (natural processes), desynchronisation of biological / ecological processes due to climate change,

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Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
				decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species
A195	Little Tern	<i>Sternula albifrons</i>	A09, G12, I02, I04, D01, N06, N07, F07, L06, N04	Intensive grazing or overgrazing by livestock, bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), problematic native species, wind, wave and tidal power, including infrastructure, desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, sports, tourism and leisure activities, interspecific relations (competition, predation, parasitism, pathogens), sea-level and wave exposure changes due to climate change
A199	Guillemot	<i>Uria aalge</i>	F22, F23, G12, D01, J02, N06, N07	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), wind, wave and tidal power, including infrastructure, mixed source marine water pollution (marine and coastal), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change
A200	Razorbill	<i>Alca torda</i>	F22, F23, G01, G12, J02, N06, N07, D01, F07	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, bycatch and incidental killing (due to fishing and hunting activities), mixed source marine water pollution (marine and coastal), desynchronisation of biological / ecological processes due to climate change, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities
A204	Puffin	<i>Fratercula arctica</i>	F22, F23, G12, I02, D01, F07, N07, G01, N06	Residential or recreational activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), industrial or commercial activities and structures generating marine macro- and micro- particulate pollution (e.g. plastic bags, styrofoam), bycatch and incidental killing (due to fishing and hunting activities), other invasive alien species (other than species of union concern), wind, wave and tidal power, including infrastructure, sports, tourism and leisure activities, decline or extinction of related species (e.g. food source / prey, predator / parasite, symbiote, etc.) due to climate change, marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations and disturbance of species, desynchronisation of biological / ecological processes due to climate change

Appendix II Mitigation Measures from the existing Draft Plan and existing Development Plans

This appendix outlines measures that have been incorporated into the Draft Plan and associated existing Carlow and Laois County Development Plans in order to mitigate against potential effects to European sites as already identified by the Stage 2 AA for the Draft Plan.

Measures that will protect European sites and their sustaining resources integrated into the Plan¹⁶

Sources and/or pathways for adverse effects ¹⁷	Respective Plan Development Objectives / Mitigation Measure(s)
Alignment with County Development Plans	<p>Chapter 12, Section 12.0 states the following: "Taking account of the foregoing, the policies and objectives of this JULAP are specific to Carlow-Graiguecullen. However, the overarching county level policies and objectives of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027 will also apply", "Where conflict arises between this JULAP and these County Development Plans, the provisions of the respective County Development Plan will take precedence."</p>
Natural Heritage and Biodiversity	<p>SO. 7: Manage the development of Carlow-Graiguecullen in a manner that protects, conserves, and enhances the natural and built heritage of the area.</p> <p>TD. P5: Protect and conserve the natural and built heritage of Carlow-Graiguecullen upon which the tourism industry is based, including landscapes, designated sites, habitats and species, water quality, archaeology and historic buildings and structures.</p> <p>TD. P17: Protect the environmental amenities of Carlow-Graiguecullen from insensitive or inappropriate development, particularly any development that threatens the tourism resources of the joint urban area.</p> <p>SR. P10: Protect and develop the connected networks of existing green spaces in the joint urban area to serve the grow NH. P1: Protect, manage, and enhance the natural heritage, biodiversity, landscape, and environment of Carlow-Graiguecullen in recognition of its importance as a non-renewable resource, a unique identifier, as a natural resource, an ecosystem services asset that can contribute towards sustainable urban drainage, flood management, and climate action.</p> <p>NH. P3: Ensure that Appropriate Assessment Screening, and if required Appropriate Assessment, is carried out in respect of plans and projects in Carlow-Graiguecullen. Where likely significant effects have been identified in respect of any plan or project not directly connected with or necessary to the management of European sites, in particular the River Barrow and River Nore SAC, either individually or in combination with other plans or projects, ensure Appropriate Assessment in accordance with Article 6(3) of the EU Habitats Directive. Carlow County Council and Laois County Council shall only agree to the plan or project after having ascertained that it will not adversely affect the integrity of any European site, in particular the River Barrow and River Nore SAC, unless the plan or project is subject to the provisions of Article 6(4) of the Habitats Directive.</p> <p>NH. P4: Contribute towards the protection, from significant adverse effects, of the ecological integrity, and the visual, recreational, environmental and amenity value of the Oak Park proposed Natural Heritage Area (pNHA) and associated habitats.</p> <p>NH. P5: Promote the carrying out of ecological/habitat assessments to inform the layout and design of development proposals and ensure they integrate the protection and enhancement of biodiversity and landscape features wherever possible in Carlow-Graiguecullen, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate.</p> <p>NH. P6: Promote increased understanding and awareness of the natural heritage and biodiversity located in the joint urban area of Carlow-Graiguecullen.</p> <p>NH. P7: Promote development for recreation and educational purposes that does not conflict with maintaining the favourable conservation status of the River Barrow and River Nore SAC and Oak Park pNHA, including the achievement of their conservation objectives.</p> <p>NH. P8: Promote, protect, and enhance sustainable and appropriate access to natural heritage in Carlow-Graiguecullen.</p> <p>NH. P9: Identify, protect, conserve, and enhance wherever possible, wildlife habitats and species of local importance in Carlow-Graiguecullen, not otherwise protected by legislation. Such habitats can include woodland, river, wetlands, and grassland areas along with field boundaries (hedgerows, stone walls and ditches). These features form part of a network of habitats and corridors, which allow wildlife to exist and flourish and contribute to compliance with Article 10 of the Habitats Directive</p> <p>H. P10: Protect and enhance the natural environment of Carlow-Graiguecullen and recognise the important role of the natural heritage in the area through its diversity, quality, and integrity, and in terms of enhancing the image of the joint urban area and contributing to quality of life and wellbeing, economic growth, tourism and recreation.</p> <p>GI. P10: Promote appropriate tree planting and pollinator friendly planting, in accordance with the recommendations of the All-Ireland Pollinator Plan 2021-2025 throughout Carlow-Graiguecullen and in open spaces within new developments, in order to enhance local biodiversity, visual amenity and surface water management.</p> <p>GI. P11: Ensure that green areas and open spaces associated with new residential developments and other relevant projects provide multifunctional benefits that enrich quality of life for local communities, ecologically rich areas that enhance biodiversity, and sustainable water management.</p> <p>GI. P14: Seek to protect trees and hedgerows in the joint urban area with a particular local amenity or conservation value and encourage the planting of native tree and hedgerow species.</p> <p>GI. O1: Support the implementation of the Carlow Town Biodiversity Strategy and Action Plan 2021-2025, and any subsequent updated version this document.</p> <p>GI. O2: Investigate the feasibility of providing a wetland amenity area on lands comprising the former Sugar Factory lagoons, in conjunction with relevant stakeholders and local community groups, taking account of the environmental sensitivities of the land and the need to ensure impacts to biodiversity and nature conservation interests are avoided.</p>
Peatlands, wetlands and surface water courses	<p>URD. P11: Support the development of underutilised lands along the River Barrow as a strategic natural asset for the town. Any future development of these lands or proposals for an additional bridge should be subject to further studies to inform the exact nature and intensity that could be accommodated without giving rise to adverse effects on sensitive Natura 2000 habitats and consider any in combination effects arising from proposals for a bridge.</p> <p>PW. P6: Contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, and groundwater, and associated habitats and species, in accordance with the standards and requirements set out in EU and national legislation and guidance.</p> <p>FR. O2: Seek to ensure that where flood risk management works take place that the natural and cultural heritage of the River Barrow and Burren River is protected and improved where possible.</p> <p>SR. O1: Deliver the River Barrow Water Activity Centre subject to the availability of financing and compliance with all planning and environmental criteria.</p> <p>NH. P2: Support the conservation and enhancement of the River Barrow and River Nore SAC, and to protect the SAC from any plans and projects that are likely to have a significant effect on the coherence or integrity of the designated site, in accordance with relevant EU environmental directives and applicable national legislation, policies, plans and guidelines.</p> <p>GI. P11: Ensure that green areas and open spaces associated with new residential developments and other relevant projects provide multifunctional benefits that enrich quality of life for local communities, ecologically rich areas that enhance biodiversity, and sustainable water management.</p> <p>GI. P12: Take account of Inland Fisheries guidance 'Planning for Watercourses in the Urban Environment, A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate/Flood Risk and Recreational Planning' (2020) when considering development proposals in the vicinity of rivers and streams in Carlow-Graiguecullen.</p> <p>LC. P6: Ensure the effective management of lands adjoining the River Barrow and Burren River and in a manner that maximises views and interactions with these important landscape features in the joint urban area, taking account of the environmental sensitivities of these lands and the need to ensure impacts to biodiversity and nature conservation interests are avoided.</p>
Water services, groundwater and water quality	<p>PW. P1: Support Uisce Éireann in the provision of a sufficient quantity and quality of water to serve the needs of the existing and future population of Carlow-Graiguecullen over the period of the Plan and in accordance with the Core Strategies of Carlow and Laois County Councils, and to promote the sustainable management of the water supply for the joint urban area.</p> <p>PW. P2: Ensure that new developments will be required to connect to the public water supply network in Carlow-Graiguecullen where public water mains are available, and subject to connection agreements with Uisce Éireann and compliance with normal planning and environmental criteria.</p> <p>WW. P1: Facilitate and support Uisce Éireann in the delivery of public wastewater services in Carlow-Graiguecullen to serve the needs of the existing and future population of the Plan area, subject to compliance with normal planning and environmental criteria and the standards and requirements set out in EU and national legislation and guidance.</p> <p>WW. P2: Encourage the decommissioning of existing on-site private wastewater treatment systems and the connection of properties to the public wastewater network in Carlow-Graiguecullen wherever feasible, to minimise risk of groundwater pollution and subject to connection agreements with Uisce Éireann and compliance with normal planning and environmental criteria and the standards and requirements set out in EU and national legislation and guidance. The provision of individual wastewater treatment systems within the Plan boundary will be strongly discouraged to minimise the risk of groundwater pollution.</p> <p>WW. O2: Implement, in conjunction with Uisce Éireann, the relevant recommendations set out in the EPA (2022) publication 'Urban Waste Water Treatment in 2021' and any subsequent update to this document.</p> <p>SG. P1: Maintain and enhance the existing surface water drainage systems in Carlow-Graiguecullen and to protect surface and ground water quality in accordance with the Water Framework Directive.</p>

¹⁶ These measures may be amended on foot of proposed amendments and/or further modifications, in advance of Plan adoption

¹⁷ The measures generally benefit multiple environmental components i.e., a measure providing for the protection of water could beneficially impact upon the protection of biodiversity, flora and fauna, for example. All of the measures included in this table would benefit the protection of European sites.

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Sources and/or pathways for adverse effects ¹⁷	Respective Plan Development Objectives / Mitigation Measure(s)
	<p>SG. P2: Require the use of Sustainable Urban Drainage Systems (SuDS) within development proposals and infrastructure projects, in accordance with the DHLGH Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document, 2022’ (and any subsequent amendments or revisions to the document), Carlow County Council’s SuDS Policy, and Laois County Council’s Storm Water Management Policy as appropriate, in order to reduce flood risk, improve water quality and enhance biodiversity and amenity in the joint urban area.</p> <p>SG. P3: Ensure that all development proposals maintain surface water discharge at greenfield run-off rate, including an allowance for climate change.</p> <p>SG. O1: Maintain, improve, and enhance the environmental and ecological quality of surface waters and groundwater in Carlow-Graigucullen in conjunction with the Environmental Protection Agency (EPA) and in accordance with the River Basin Management Plan for Ireland 2018-2021 and any subsequent amendments or revisions to the Plan.</p> <p>SG. O2: Require applicants, where necessary, to demonstrate that development proposals will not negatively impact on any surface water or groundwater body and be compliant with the requirements of the Water Framework Directive and measures to protect and improve our water bodies set down in the River Basin Management Plan for Ireland 2018 – 2021 and any subsequent amendments or revisions to the Plan.</p> <p>SW. P1: Ensure that all development proposals where viable incorporate Sustainable Urban Drainage Systems (SuDS) and other nature-based surface water drainage solutions.</p>
Tourism	<p>TD. P1: Support and facilitate the development of the tourism industry in Carlow-Graigucullen with an emphasis on utilising and harnessing the potential of the natural and built heritage of the joint urban area, subject to compliance with normal planning and environmental criteria.</p> <p>TD. P4: Work with key stakeholders, including Carlow Tourism, Fáilte Ireland, the OPW, the Arts Council, the Heritage Council, and key stakeholders, businesses, and local communities, to support the sustainable development and promotion of heritage tourism in Carlow-Graigucullen.</p> <p>TD. P11: Support the provision of ancillary infrastructure and services that enhance the user experience of the River Barrow and Burren River and which increase tourism activity associated with water-based activities, where appropriate and feasible to do so and subject to normal planning and environmental criteria.</p> <p>TD. P12: Facilitate, where appropriate, increased access to the River Barrow and Burren River, subject to compliance with normal planning and environmental criteria.</p> <p>TD. O1: Support, promote and maximise the role of Carlow Town as a designated Ireland’s Ancient East ‘Destination Town’, and to engage with Fáilte Ireland in developing and promoting future tourism initiatives in the town, including enhancement of public space, the development of a way finding project and welcome signage, transport links, accommodation, the night-time economy, and the sustainable development of our natural and built heritage, in order to capitalise on the potential benefit of the funding for the town.</p>
Built environment	<p>CC. P1: Support and promote the role of Croí Cónaithe (Towns) in delivering the refurbishment of vacant properties in Carlow-Graigucullen for residential use and as a means of encouraging town centre living in the joint urban area, and subject to compliance with proper planning and environmental considerations.</p> <p>UVD. P1: Encourage and facilitate the appropriate regeneration and reuse of underutilised, vacant, and derelict buildings and sites. Both Councils will continue to use their statutory powers, where appropriate, to consider such buildings and sites for inclusion in the Residential Zoned Land Tax or Register of Derelict Sites.</p> <p>URD. P7: Support increased building heights for river frontage lands in the joint urban area, including along the River Barrow, subject to compliance with best practice urban design, and proper planning and environmental considerations.</p> <p>URD. P11: Support the development of underutilised lands along the River Barrow as a strategic natural asset for the town. Any future development of these lands or proposals for an additional bridge should be subject to further studies to inform the exact nature and intensity that could be accommodated without giving rise to adverse effects on sensitive Natura 2000 habitats and consider any in combination effects arising from proposals for a bridge.</p> <p>W. O1: Support and facilitate the delivery of new and improved walking and cycling network in Carlow-Graigucullen, which delivers permeability enhancements and connections where appropriate as identified in the Area Based Transport Assessment (ABTA) and in Figures 6.4 and 6.5, in conjunction with the National Transport Authority, other statutory agencies, and relevant stakeholders. Final design details shall be subject to appropriate environmental assessment and undergo a separate public consultation process where applicable.</p>
Invasive species	<p>The management of invasive species’ occurrence and risk where required is provided for by adherence to the policies and objectives of the current Carlow County Development Plan 2022-2028 and the current Laois County Development Plan 2021-2027, via Section 12.0 of Chapter 12, as outlined below:</p> <p>“Taking account of the foregoing, the policies and objectives of this JULAP are specific to Carlow-Graigucullen. However, the overarching county level policies and objectives of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027 will also apply”, “Where conflict arises between this JULAP and these County Development Plans, the provisions of the respective County Development Plan will take precedence.”</p> <p>This statement therefore renders any development or project resulting from the implementation of this Draft Plan subject to compliance with invasive species policy objectives IS. P1, IS. P2, IS. P3, IS. O1, IS. O2 and IS. O3 of the current Carlow County Development Plan 2022-2028 and BNH 5 of the current Laois County Development Plan 2021-2027.</p>
Agriculture	<p>The management of sustainable and appropriate agricultural practices where required is provided for by adherence to the policies and objectives of the current Carlow County Development Plan 2022-2028 and the current Laois County Development Plan 2021-2027, via Section 12.0 of Chapter 12, as outlined below:</p> <p>“Taking account of the foregoing, the policies and objectives of this JULAP are specific to Carlow-Graigucullen. However, the overarching county level policies and objectives of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027 will also apply”, “Where conflict arises between this JULAP and these County Development Plans, the provisions of the respective County Development Plan will take precedence.”</p> <p>This statement therefore renders any development or project resulting from the implementation of this Draft Plan subject to compliance with agriculture policy objectives AG. P3 and AG. P4 of the current Carlow County Development Plan 2022-2028 and RL2 and ES32 of the current Laois County Development Plan 2021-2027.</p>
Flood Risk Management	<p>FR. P1: Ensure that all development proposals in Carlow- Graigucullen comply with the requirements of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009) and Circular PL2/2014 (and any future revisions or updates to these Guidelines), in particular through the application of the sequential approach and the Development Management Justification Test.</p> <p>FR. P2: Have regard to the findings and recommendations of the Strategic Flood Risk Assessment (SFRA) carried out for this Joint Urban Local Area Plan.</p> <p>FR. P3: Carry out flood risk assessment for the purpose of regulating, restricting, and controlling development in areas at risk of flooding in Carlow-Graigucullen and to minimise the level of flood risk to people, business, infrastructure and the environment through the identification and management of existing and potential future flood risk.</p> <p>FR. P4: Require the submission of a Site-Specific Flood Risk Assessments (FRA) in areas at risk of flooding in Carlow-Graigucullen. The assessment shall be carried out by a suitably qualified and indemnified professional, shall be appropriate to the scale and nature of the risk to the proposed development and shall consider all sources of flooding. The FRA shall be prepared in accordance with the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009) and Circular PL2/2014 (and any future revisions or updates to these Guidelines), and shall address climate change, residual risk, avoidance of contamination of water sources and any proposed site-specific flood management measures.</p> <p>FR. P6: Maintain a riparian (buffer) zone of not less than 10 metres between all watercourses and any development proposals to mitigate against flood risk, with the full extent of the buffer zone to be determined on a case-by-case basis by the Planning Authority, based on site specific characteristics and sensitivities and consultation with Inland Fisheries Ireland.</p> <p>FR. O1: Manage flood risk in Carlow-Graigucullen in conjunction with the Office of Public Works (OPW) and in accordance with the requirements of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (2009), Circular PL02/2014, and any future revisions or updates to these Guidelines.</p> <p>SG. P2: Require the use of Sustainable Urban Drainage Systems (SuDS) within development proposals and infrastructure projects, in accordance with the DHLGH Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document, 2022’ (and any subsequent amendments or revisions to the document), Carlow County Council’s SuDS Policy, and Laois County Council’s Storm Water Management Policy as appropriate, in order to reduce flood risk, improve water quality and enhance biodiversity and amenity in the joint urban area.</p> <p>FR. P5: Minimise flood risk arising from pluvial (surface water) flooding in Carlow-Graigucullen by promoting the use of natural flood risk management measures including the use of Sustainable Urban Drainage Systems (SuDS) and nature-based solutions.</p>
Light, air & noise pollution	<p>The appropriate design of urban centres and hinterlands for the protection of air quality is provided for by adherence to the policies and objectives of the current Carlow County Development Plan 2022-2028 and the current Laois County Development Plan 2021-2027, via Section 12.0 of Chapter 12, as outlined below:</p> <p>“Taking account of the foregoing, the policies and objectives of this JULAP are specific to Carlow-Graigucullen. However, the overarching county level policies and objectives of the Carlow County Development Plan 2022-2028 and the Laois County Development Plan 2021-2027 will also apply”, “Where conflict arises between this JULAP and these County Development Plans, the provisions of the respective County Development Plan will take precedence.”</p> <p>This statement therefore renders any development or project resulting from the implementation of this Draft Plan subject to compliance with:</p> <ul style="list-style-type: none"> • Light pollution objectives LP. P1 and LP. P3 of the current Carlow County Development Plan 2022-2028 and ES 50 ES 51 and ES 52 of the current Laois County Development Plan 2021-2027.

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Sources and/or pathways for adverse effects ¹⁷	Respective Plan Development Objectives / Mitigation Measure(s)
	<ul style="list-style-type: none"> • Air pollution objectives AP. P1 and AP. P2 of the current Carlow County Development Plan 2022-2028 and ES 38 - ES 42 of the current Laois County Development Plan 2021-2027; • Noise pollution objectives NP. P1, NP. P2 and NP. P3 of the current Carlow County Development Plan 2022-2028 and ES 43, ES 44, and ES 45 of the current Laois County Development Plan 2021-2027; and, <p>NH. P1.1: Ensure that lighting proposals along water courses, rivers, and streams in the joint urban area, are not in conflict with bat species, and to ensure that expert advice is sought on such lighting proposals in order to mitigate the impacts of lighting on bats and other species and habitats.</p>
Climate	<p>SO. 4: Prioritise integrated transport and land use, supported by investment in public transport, active travel networks and shared, low-carbon mobility options, which will improve people’s travel choices and support safe, sustainable, and healthy lifestyles.</p> <p>SO. 6: Transition Carlow-Graiguecullen to a low-carbon and climate resilient town through a combination of effective mitigation and adaptation measures, in addition to maximising opportunities for energy efficiency, renewables, and decarbonisation.</p> <p>CS. 06: Support the transition of Carlow-Graiguecullen to a low-carbon and climate resilient urban area through the promotion of sustainable development patterns, sustainable and active travel, and sustainable energy use, in accordance with the NPF, the RSES’ for the Southern Region and Eastern and Midlands Region, and the National Climate Action Plan.</p> <p>RT. 06: Introduce measures to improve the accessibility of Carlow Town Centre, including those that prioritise pedestrians and cyclists, and where feasible those that separate pedestrian and cycle traffic from vehicular traffic.</p> <p>URD. P5: Require that development proposals facilitate a connected network of streets and spaces which prioritise pedestrians and cyclists and provides for the possibility of connections to future development on adjacent lands.</p> <p>LT. P1: Actively support an integrated approach to land use and transport planning in Carlow-Graiguecullen that promotes a shift towards a sustainable, healthy, and low carbon joint urban area with a reduced need for car-based travel, and through the prioritisation of development that is within reasonable walking and cycling distances from key employment, service, educational, and recreational areas, and key public transport nodes.</p> <p>AT. P1: Support the role of the Councils’ Active Travel Teams in the promotion and delivery of sustainable and active travel infrastructure and options in Carlow-Graiguecullen, including the provision of new and enhanced walking and cycling routes, widened footpaths, and pedestrian crossings.</p> <p>PT. P1: Promote the sustainable development of Carlow-Graiguecullen by actively engaging with and supporting relevant national transport agencies in their remit to deliver improvements to the public transport network/services for the joint urban area, including at Carlow Railway Station and Carlow Bus Park, and to ensure the provision of integrated public transport services that provide an attractive and convenient alternative to private car travel thereby reducing car dependency for travel purposes.</p> <p>PW. P5: Support best practice water conservation measures in development proposals, including the use of rainwater harvesting systems, roof water collection (water butts), and grey water recycling.</p> <p>CC. P1: Promote and support the development of connected communities and the attainment of the 10-Minute town, having regard the findings of the 10-Minute Towns Study for Carlow, and with an emphasis on active travel and shorter walking and cycling timeframes to social and community facilities, improving permeability in the built environment, and encouraging a reduction in car dependency.</p> <p>CA. P1: Support the transition of Carlow-Graiguecullen to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency and conservation.</p> <p>CA. P2: Promote and encourage positive community and/or co-operative led climate action initiatives and projects in Carlow-Graiguecullen that seek to reduce carbon emissions, improve energy efficiency and conservation, enhance green infrastructure, and encourage awareness on climate change issues and impacts.</p> <p>CA. P3: Encourage innovation and facilitate the development of pilot schemes that support climate change mitigation and adaptation measures.</p> <p>CA. O1: Support, in conjunction with key stakeholders, the preparation and implementation of the Climate Action Plans for County Carlow and County Laois, and to facilitate their role as a driver in the mitigation of greenhouse gas emissions and climate change adaptation in Carlow-Graiguecullen, and the translation of national climate policy to local and community levels in the joint urban area.</p> <p>CA. O2: Support and facilitate the role of the Carlow Town Decarbonisation Zone in the delivery of effective climate action at a local level, through interventions, projects, and actions aimed at reducing greenhouse gas emissions and increasing energy efficiency and conservation.</p> <p>LU. P1: Secure climate resilience and a reduction of greenhouse gas emissions in Carlow-Graiguecullen by actively implementing policies which support integrated land use planning and sustainable travel, and maximise such opportunities through development location, form, layout, and design.</p> <p>UR. P1: Secure climate resilience and a reduction of greenhouse gas emissions in Carlow-Graiguecullen through encouragement and support for urban regeneration projects and interventions, including those set out in Project Carlow 2040 – A Vision for Regeneration.</p> <p>UR. P2: Support the effective and efficient use of land in Carlow-Graiguecullen, prioritising compact growth in preference to greenfield land consumption, through the development and regeneration of vacant and underutilised brownfield/infill land and buildings within the existing built-up footprint of the joint urban area.</p> <p>UR. O1: Leverage all available funding streams which will support and deliver urban regeneration outcomes in Carlow-Graiguecullen which seek to secure climate resilience and a reduction of greenhouse gas emissions in the joint urban area.</p> <p>EE. P1: Encourage and promote the consideration of energy efficient and low-carbon design solutions and modern construction methods when carrying out pre-planning discussions for major residential, commercial, and industrial development in Carlow-Graiguecullen.</p> <p>EE. P2: Encourage development proposals that are low carbon, well adapted to the impacts of climate change, include mitigation measures, and maximise energy efficiency through renewable energy sources, water conservation, SuDS, siting, layout and design.</p> <p>EE. P5: Support and facilitate the installation of district heating systems as a decarbonising technology in new developments, subject to compliance with proper planning and environmental considerations.</p> <p>EE. O1: Support the implementation of national energy efficiency standards in Carlow-Graiguecullen, including energy efficiency and conservation measures through:</p> <ul style="list-style-type: none"> • Improved building design; • Promoting smarter travel; and, • Raising awareness/benefits of energy conservation. <p>EE. O3: Retrofit all non-LED local authority public lighting in Carlow-Graiguecullen to high efficiency LED lanterns to contribute to meeting statutory energy efficiency targets, and to significantly reduce emissions and achieve cost savings with energy and maintenance efficiencies.</p>
Renewable Energy	<p>RE. P1: Encourage and support a transition to renewable energy sources in Carlow-Graiguecullen, subject to compliance with proper planning and environmental considerations.</p> <p>EE. P3: Promote the use of efficient energy storage systems and infrastructure that support energy efficiency and reusable energy system optimisation, subject to compliance with proper planning and environmental considerations.</p> <p>EE. P4: Support the use of blue roofs, green roofs, green walls, photovoltaic and/or solar thermal collector panels and heat pumps on new residential, commercial, industrial, and public buildings</p> <p>EE. P6: Promote the use of efficient energy storage systems and infrastructure in Carlow-Graiguecullen that support energy efficiency and reusable energy system optimisation, subject to compliance with proper planning and environmental considerations.</p> <p>EE. O2: Reduce dependency on fossil fuels for domestic and commercial heating in Carlow-Graiguecullen by encouraging the use of renewable heat solutions through the development management process.</p>
Green / Blue Infrastructure	<p>GI. P1: Protect and enhance the biodiversity and ecological function of the green infrastructure network in Carlow-Graiguecullen.</p> <p>GI. P2: Identify, protect, maintain, and enhance existing and planned green infrastructure assets in Carlow-Graiguecullen, and recognise the wide range of environmental, social, and economic benefits of green spaces and nature-based solutions by ensuring the integration of green infrastructure planning and development in the planning process.</p> <p>GI. P3: Protect and preserve landscape features which significantly contribute to green infrastructure in Carlow-Graiguecullen, including trees, hedgerows, woodlands, wetlands, watercourses, and other habitats.</p> <p>GI. P4: Require the protection and integration of new and existing green infrastructure as an essential component of all new developments in Carlow-Graiguecullen, and to ensure future development does not fragment, damage, or prejudice the integrity of the green infrastructure network in the joint urban area.</p> <p>GI. P6: Require development proposals to include an outline of measures to protect the retained green infrastructure of a site during the period of construction.</p> <p>GI. P7: Require large scale development proposals in the joint urban area such as residential schemes, industrial development, or retail schemes, to submit a green infrastructure plan as an integral part of a planning application.</p> <p>GI. P8: Promote a network of pedestrian and cycle paths to enhance accessibility to the green infrastructure network in Carlow-Graiguecullen, while ensuring that the layout, design, and operation of the routes responds to the ecological protection needs of each site.</p> <p>GI. P9: Incorporate elements of green infrastructure into existing areas of hard infrastructure in the joint urban area, where possible, thereby integrating these areas of the existing urban environment into the overall green infrastructure network.</p>

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Sources and/or pathways for adverse effects ¹⁷	Respective Plan Development Objectives / Mitigation Measure(s)
	<p>NB. P1: Actively promote and encourage nature-based approaches and green infrastructure solutions in Carlow-Graiguecullen as viable mitigation and adaptation measures to reduce greenhouse gas emissions, increase the adaptive capacity of ecosystems and optimise the multifaceted benefits through:</p> <ul style="list-style-type: none"> • Conservation, promotion, and restoration of the natural environment; • Integrating an ecosystem services approach and promote healthy living environments through enhanced connection with nature and recreation/amenity; • Enhancing biodiversity in the joint urban area; • Assist with water and flood risk management; and, • Carbon storage or sequestration.
Waste Management	<p>WM. P1: Promote and support sustainable forms of waste management by households, communities, and businesses, including waste prevention, minimisation, reuse, recycling, and recovery.</p> <p>WM. P2: Safeguard the environment of the joint urban area by seeking to ensure that residual waste is disposed of appropriately.</p> <p>WM. P3: Ensure that Carlow-Graiguecullen is served by adequately sized public recycling facilities, bring bank recycling facilities, and to adequately maintain existing recycling facilities in the joint urban area.</p> <p>WM. P4: Require the incorporation of sustainable waste management measures within developments, including the provision of adequately sized facilities for the storage, separation, and collection of waste and recyclable materials.</p> <p>WM. O2: Promote and facilitate communities becoming involved in environmental awareness activities and community-based recycling initiatives or environmental management initiatives in support of local sustainable waste management practices.</p> <p>WM. O3: Eliminate unauthorised fly tipping in the joint urban area and to regulate and control the disposal of builder's spoil and rubble.</p>