

# Appropriate Assessment Conclusion Statement for Graiguenamanagh-Tinnhinch Joint Local Area Plan 2021-2027



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# 1 Introduction and Background

## 1.1 Introduction

This is the Appropriate Assessment (AA) Conclusion Statement for the Graiguenamanagh-Tinnahinch Joint Local Area Plan. The obligation to undertake AA derives from Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC as transposed into Irish legislation by, inter alia, the Planning and Development Act 2000, as amended. AA is a focused and detailed impact assessment of the implications of a strategic action (such as a plan or programme) or project, alone and in combination with other strategic actions and projects, on the integrity of any European Site in view of its conservation objectives. This AA Conclusion Statement should be read in conjunction with the Plan and associated documents including the AA Natura Impact Statement (NIR).

## 1.2 Legislative Requirements in relation to AA

In carrying out the AA for the Plan, Planning and Development Act 2000, as amended, requires, inter alia, that the Council considers the matters arrayed in the first column on Table 1.1 below. The second column identifies how these issues have been addressed.

**Table 1.1 Matters taken into account by the AA**

Matter specified by the Regulations	How addressed by AA
(a) the Natura Impact Report	An AA NIR accompanies this AA Conclusion Statement and the Plan
(b) any supplemental information furnished in relation to any such report	
(c) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura Impact Report	This AA Conclusion Statement accompanies the NIR that provides additional detail on European Sites.
(d) any information or advice obtained by the public authority	Submissions made during the Plan preparation/AA process that were relevant to the AA resulted in updates being made to the AA NIR.
(e) if appropriate, any written submissions or observations made to the public authority in relation to the application for consent for proposed plan or project	
(f) any other relevant information	Proposed Material Alterations were screened for the need to undertake Stage 2 AA (Stage 2 AA was determined not be required).

In addition to the above, the Regulations require that the Council makes available for inspection a determination regarding the outcome of the assessment with respect to whether or not the Plan would adversely affect the integrity of a European site (a copy of this determination is provided at Section 4).

## 1.3 AA Conclusion Statement

Non-Statutory AA guidance (Department of Environment, Heritage and Local Government, 2009) states that (Section 4.14) it *"is recommended that planning authorities include a clear and discrete*

AA Conclusion Statement as a distinct section in the written statement of the plan separate to the SEA statement .” This guidance recommends that the following issues are addressed by the AA Conclusion Statement:

- Summary of how the findings of the AA were factored into the Plan (see Section 2);
- Reasons for choosing the Plan as adopted, in the light of other reasonable alternatives considered as part of the AA process (see Section 3);
- A declaration that the Plan as adopted will not have an adverse effect on the integrity of European Sites (provided at Section 4); and
- The NIR (the AA NIR is accompanied by this AA Conclusion Statement and has informed the AA Determination – see Section 4).

As recommended, this AA Conclusion Statement addresses the above issues.

## 2 How the Findings of the AA were factored into the Plan

The requirements for environmental protection and management were integrated into the Plan. The Plan was prepared in an iterative manner whereby the Plan and AA documents have informed subsequent versions of the other. The findings of the AA were integrated into the Plan through mitigation measures. These mitigation measures ensure that there will be no significant effects to the ecological integrity of any European site from implementation of the Plan. The mitigation measures most relevant to the protection of European sites are identified in Table 2.1 below. Furthermore, the detailed Plan preparation process undertaken by the Planning Department facilitated zoning that avoids inappropriate development being permitted in areas of high ecological sensitivity.

**Table 2.1 Matters taken into account by the AA**

### Mitigation Measures within the Plan, including:

**AAO1.1** To ensure that any plan or project within the functional area of the Planning Authority is subject to an Appropriate Assessment in accordance with legislative requirements, the Guidance *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*, 2009 and is assessed in accordance with Article 6 of the Habitats Directive in order to avoid adverse impacts on the integrity and conservation objectives of the site.

**SO4** To support the creation and enhancement of a network of pedestrian walkways, footbridges and open spaces connecting the River Barrow and other recreational and tourist attractions within the settlement while ensuring the protection and preservation of the natural and built heritage of the area.

**SO7:** To enhance and protect the built and natural heritage of the settlement by promoting the enhancement, management and understanding of these assets whilst encouraging sensitive and sustainable development so as to ensure its survival for future generations.

**SO9:** To phase future growth in line with the capacity of supporting physical infrastructure and to ensure that it occurs in accordance with proper planning and sustainable development.

**TO2.1:** To support the development of tourism infrastructure (in particular at The Hub), overnight accommodation (in particular Brandondale House), attractions and facilities at appropriate locations subject to the appropriate protection of architectural heritage and natural amenities and appropriate statutory processes required by the European Habitats Directive.

**TO2.2:** To support the development of outdoor leisure activities and a River Park and associated

uses on lands that are designated as open space, subject to the protection of landscape character and natural heritage and appropriate statutory processes required by the European Habitats Directive

**TO2.4:** To facilitate tourism activities such as waterways activities, eco-tourism, niche retailing, food markets, local and other craft type activities so as to diversify the tourism product in Graiguenamanagh-Tinnahinch, subject to relevant environmental assessments.

**OSO2.1:** To support and facilitate the provision of open spaces with ecological and recreational corridors to aid the movement of biodiversity and people, subject to appropriate environmental assessment.

**OSO2.2:** To promote a network of paths and cycle tracks (Refer to Map 1) to enhance the use of the strategic open spaces in the town, while ensuring that the design and operation of the routes responds to the ecological protection needs of each site.

**NHO1.1:** To identify, protect, conserve and enhance wherever possible, wildlife habitats and species of local importance, not otherwise protected by legislation. Such habitats would include woodland, river, grassland areas and field boundaries (hedgerows, stone walls and ditches). Such 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

**NHO1.2:** Support the protection of biodiversity and ecological connectivity within the plan area including woodlands, trees, hedgerows, roadside verge vegetation, rivers, streams, natural springs, wetlands, stonewalls, fens, geological and geo-morphological systems, other landscape features and associated wildlife, where these form part of the ecological network. Seek to retain and incorporate these natural features into developments, in order to avoid ecological fragmentation and maintain ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive:

- a) Seek to retain and incorporate these natural features into developments, in order to avoid ecological fragmentation and maintain ecological corridors and stepping stones.
- b) Protect and enhance the water quality and ecology of the River Barrow, in the plan area and their function as ecological corridors, by maintaining the existing banks and channel.
- c) Conserve and restore biodiversity through the appropriate planting of native trees, shrubs and hedgerows indigenous to the area and of Irish provenance in public and private areas and in new developments.
- d) Seek to prevent inappropriate development along the banks of the river which would negatively impact on the ecological quality and biodiversity of the waters and ecological corridor.
- e) Seek to prevent the introduction of imported ash trees/plants or other such species into the plan area in line with the Plant Health Directive and any updated legislation.
- f) In order to protect light sensitive species such as crayfish, lighting fixtures should provide only the amount of light necessary for personal safety and should be designed so as to avoid creating glare or emitting light above a horizontal plane.

**NHO1.3:** To ensure the protection of water quality due to the implementation of this Joint LAP.

**NHO1.4:** To limit the removal of vegetation and/or alteration of bank characteristics by reserving land along the river bank for ecological corridors and maintain them free from inappropriate development and discourage culverting or realignment. The Planning Authorities shall consult with Inland Fisheries Ireland and other statutory bodies as required by the planning regulations in respect of this and shall have regard to their comments in the making of any planning decision.

**NHO1.5:** To work with Inland Fisheries Ireland and the OPW to, subject to appropriately considering implications for flood risk and complying with the Habitats Directive, remove barriers to fish

movement as part of any instream development works in the Duiske River.

**NHO1.6:** It is an objective to consider guidance by Inland Fisheries Ireland on planning for watercourses in the urban environment, particularly in relation to riparian buffer zones.

**MTO1.10** To investigate and implement the best practise solution for the provision low level lighting on the George Semple bridge

**INFO1.3:** Where a private water supply is proposed for development the Council will require the cumulative impacts of a private water supply on the hydrological regime of the River Barrow SAC to be addressed as part of any project assessment.

**INFO2.1:** To carry out surface water infrastructure improvement works as required, subject to relevant environmental assessments.

**INFO2.2:** To maintain, improve and enhance, where possible, the environmental and ecological quality of surface waters and groundwater in Graiguenamanagh-Tinnahinch in accordance with the South Eastern River Basin District River Basin Management Plan and in conjunction with the EPA.

**INFO3.4:** To require the preparation of Drainage Impact Assessments, in line with the SFRA for this Draft Joint LAP, for all development proposals within the plan area and to consider sustainable drainage and natural water retention measures. 'To identify any measures, such as natural water retention measures, that can have benefits for Water Framework Directive, flood risk management and biodiversity objectives.

### 3 Consideration of Alternatives

#### 3.1 Summary of Description and Assessment of Available Reasonable Alternatives

Contributing towards the protection of ecology and European sites was one of the key environmental issues in the consideration of alternatives to the Plan.

Three alternative development strategies for Graiguenamanagh-Tinnahinch were developed as follows:

##### **Alternative 1: Continued consolidation**

Alternative 1 concentrates growth mainly into the existing urban centre of Graiguenamanagh-Tinnahinch, with little growth being allocated to rural areas. Access to public transport is a guiding principle of this approach.

##### **Alternative 2: Dispersed growth**

This scenario is one which places very few restrictions on development throughout the Plan area. The 'pot' of zoned land would be distributed throughout the area, without prioritisation. Development would be allowed to proceed in an ad hoc manner and would follow market forces to a great extent. Most development would occur on greenfield sites at a remove from the existing urban centre.

Alternative 2 envisages potentially inappropriate lands zoned for development without truly assessing the overall implications. Significant levels of ribbon development along roads in the plan

area would result. Development would occur in unserved or in insufficiently served areas. It would most likely lead to a highly dispersed settlement pattern.

This would lead to a weakening of the centre of Graiguenamanagh-Tinnahinch. Whilst this alternative would allow for a freedom of development, it is not sustainable. It would lead to a significant shift towards rural rather than urban development. Ultimately it could lead to a loss of population base within Graiguenamanagh-Tinnahinch and consequently a loss of critical mass for the development of key services and facilities. Furthermore, urban generated housing within the transport corridors would have long term implications for future road development and would compromise re-alignments, or road geometry with adverse risks to road users. The proliferation of one-off housing would have negative effects on water quality (which is identified as a key SEO for the Plan) and a rise in unsustainable travel patterns with resulting effects on air quality and greenhouse gas emissions. The provision of key services such as water supply and wastewater treatment would become costly in both financial and environmental quality terms.

### **Alternative 3: Selection of new growth areas**

This alternative prioritises areas outside the existing urban centre of Graiguenamanagh-Tinnahinch for growth, such as, Mooneen and Ballymurphy. Both these small places would be subject to zoning in this Plan to accommodate the proposed population increase. There are no services in either of these areas to serve such a population increase and this approach would result in an increase in unsustainable travel patterns.

## **3.2 Reasons for choosing the alternatives for the Plan in the light of the other reasonable alternatives**

Selected alternatives for the Plan from each of the three alternatives that emerged from the planning/SEA process are indicated on Table 3.1 below.

These alternatives have been selected and developed by the Planning Team, placed on public display and adopted by Kilkenny and Carlow County Council having regard to both:

1. The environmental effects, including those relating to ecology and European sites, which were identified by the SEA and are summarised above; and
2. Planning - including social and economic - effects that also were considered by Kilkenny and Carlow County Council.



**Table 3.1 Selected Alternatives for the Plan**

<b>Table 3.1 Assessment of Alternatives</b>			
Environmental Parameter – SEA Objective	Alternative		
	1: Continued Consolidation	2: Dispersed Growth	3: Selection of New Growth Areas
<b>Biodiversity, Flora and Fauna</b>			
To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species.			
Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function.			
Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species.			
Enhance biodiversity in line with the National Biodiversity Strategy and its targets.			
To protect, maintain and conserve the County’s Natural Capital			
<b>Population and Human Health</b>			
To create an environment where every individual and sector of society can play their part in achieving a more healthy Ireland.			
Consolidate growth and limit urban sprawl.			
Enhance human health and promote healthy living through access to active travel opportunities, especially walking and cycling.			
Promote economic growth to encourage retention of working age population.			
Ensure that existing population and planned growth is matched with the required public infrastructure and the required services.			
Safeguard the county’s citizens from environment-related pressures and risks to health and well-being.			
<b>Water</b>			
Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the WFD and MSFD.			
Ensure that economic growth of the marine resource and its ecosystems are managed sustainably.			
Ensure water resources are sustainably managed to deliver proposed growth in the context of existing and projected water supply and wastewater capacity constraints ensuring the protection of receiving environments.			
Avoid inappropriate development in areas at risk of flooding and areas			



that are vulnerable to current and future erosion.			
Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposals.			
<b>Land and Soils</b>			
Protect soils against pollution, and prevent degradation of the soil resource.			
Promote the sustainable use of infill and brownfield sites over the use of greenfield.			
Safeguard areas of prime agricultural land and designated geological sites.			
<b>Air</b>			
To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture.			
Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency.			
Promote continuing improvement in air quality.			
Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution			
Meet Air Quality Directive standards for the protection of human health — Air Quality Directive			
Significantly decrease noise pollution by 2020 and move closer to WHO recommended levels			
<b>Climate</b>			
To minimise emissions of greenhouse gasses.			
Integrate sustainable design solutions into infrastructure (e.g. energy efficient buildings; green infrastructure).			
Contribute towards the reduction of greenhouse gas emissions in line with national targets.			
Promote development resilient to the effects of climate change.			
Promote the use of renewable energy, energy efficient development and increased use of public transport.			
<b>Material Assets</b>			
Optimise existing infrastructure and provide new infrastructure to match population distribution proposals.			
Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, wave solar, tidal, biomass, energy from waste (EfW), and traditional fossil fuels.			
Promote the circular economy, reduce waste, and increase energy efficiencies.			
Ensure there is adequate sewerage and drainage infrastructure in place to support new development.			
Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes.			
Encourage the transition to a zero carbon economy by developing grid infrastructure to support renewables (onshore and offshore), and			

international connectivity.			
Reduce the average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart- buildings, cities and grids.			
<b>Cultural Heritage</b>			
Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage			
<b>Landscape</b>			
To provide a framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention			

## 4 How Environmental Considerations were integrated into the Development Plan

### 4.1 Introduction

Environmental considerations were integrated into the Development Plan at all stages through:

- Consultations with environmental authorities;
- Communication within the Plan team of environmental considerations and integration of these considerations into the Plan;
- Integration of environmental measures into the Plan including SEA, AA and SFRA provisions.

### 4.2 Consultation

In line with the Planning and Development (SEA) Regulations 2004 as amended<sup>1</sup>, the Environmental and Planning Authorities were given notice on the 6<sup>th</sup> March 2020 of the intention of Kilkenny and Carlow County Council to carry out an environmental assessment. The bodies notified were:

- Department of Cultural, Heritage and the Gaeltacht
- Minister for Environment, Climate and Communications
- Minister for Housing, Local Government and Heritage
- Minister for Agriculture, Food and the Marine.
- The EPA
- Waterford City and County Council.
- Wexford County Council.
- Laois County Council
- Tipperary County Council
- Kildare County Council
- Wicklow County Council

In addition, submissions were invited on the Draft Plan and Environmental Report while they were on public display, and also at Material Alterations stage. Responses are detailed in Section 3.

### 4.3 Communication of environmental considerations and integration into the Plan

The Draft Plan, Environmental Report, Strategic Flood Risk Assessment and Natura Impact Report were prepared by an in-house team of planners. The process was an iterative one. Environmental considerations were communicated to the Planning team throughout the plan-making process. This allowed the team to integrate these considerations into the text and maps of the Plan.

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<sup>1</sup> Planning and Development Strategic Environmental Assessment (Amendment) Regulations 2011 S.I. 201 of 2011

#### 4.4 Integration of Environmental measures into the Plan

The formulation of the Plan and the preparation of the Environmental Report is an iterative process that takes place over many months and therefore it is difficult to document the evolution of every objective in the Plan. However, there are a number of means through which environmental measures were integrated into the Plan.

In the first place, the entire ethos behind the writing of the Plan was to provide a clarity which could readily be understood, and assessed by the SEA process. This led to a decision from the outset to structure the Plan mainly in terms of 'objectives' and 'development management standards'. The previous Plan included a 'Policies and Objectives' chapter, and a 'Development Management' chapter. The mix of policies, objectives and development management standards made it difficult to assess the environmental impact of the Plan, and was more cumbersome for the SEA process. For the 2021 Plan, objectives were used as the main statement of intent. Objectives had to satisfy the criteria of SMART and be; Specific, Measurable, Attainable, Realistic and Time-sensitive.

This made the assessment clearer, and should lead to greater clarity in monitoring the effects of the Plan. 'Development management standards' were used to set out exactly what would be required to be satisfied as part of any planning application, so for the most part these equate to mitigation measures to ensure the incorporation of environmental measures into the Plan.

Furthermore, specific changes to the text and maps of the LAP were introduced as a result of the SEA process. This includes a section on the National Survey of Native Woodlands (See Chapter 7 of LAP), and also the identification of the SEVESO site in Campile, Co. Wexford, (See Chapter 9) which was not included in the 2009 LAP, as amended.

## 5 Environmental Report and Submissions & Observations

### 5.1 Introduction

This section details how both the Environmental Report and submissions and observations made to the planning authority on the Environmental Report and SEA process have been taken into account during the preparation of the Plan.

### 5.2 SEA Scoping Submissions

In line with the Planning and Development (SEA) Regulations 2004 as amended<sup>2</sup>, the Environmental and Planning Authorities were given notice on the 6<sup>th</sup> March 2020 of the intention of Kilkenny and Carlow County Council to carry out an environmental assessment indicating that submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report could be made to the Council.

A response was received from the EPA on the 25<sup>th</sup> March 2020, which included an SEA pack for all Local Authorities to incorporate in carrying out the Environmental Report. The attached document listed general topics to be considered, covering issues such as water quality and flooding. These issues were taken into account during the undertaking of the SEA, SFRA and AA and informed the measures that were integrated into the Joint LAP in relation to sustainable development and environmental protection and management.

### 5.3 Submissions and observations at pre-draft stage

Pre-draft public consultation regarding the Joint Plan took place from the 30<sup>th</sup> October 2019 to the 22<sup>nd</sup> November 2019. During this period a pre-draft public consultation workshop was held on the 7<sup>th</sup> November 2019.

One submission was received in relation to the SEA, from the EPA. This submission was addressed in the Chief Executives Report, and the relevant extracts are summarised below.

**Table 1: Pre-draft submissions**

Submission ref.	Summary	Chief Executive's Opinion and Recommendation
EPA	This submission relates to the notice for SEA Scoping, as sent to the EPA in September 2014. The submission sets out the key environmental issues to be taken into account in the preparation of the SEA and Plan. An SEA checklist is attached to assist in the preparation of the SEA and Plan.	These issues will be addressed herein.

<sup>2</sup> Planning and Development Strategic Environmental Assessment (Amendment) Regulations 2011 S.I. 201 of 2011

## 5.4 Submissions and observations on the Environmental Report

The Draft plan and Environmental Report were published on the 20<sup>th</sup> November 2021 and remained on display until the 25<sup>th</sup> January 2021. A total of 18 submissions were received in total, of which 2 referred to the SEA.

Responses to submissions made on the Environmental Report and AA and SFRA documents during the period of public display were integrated into a Chief Executive's Report and considered by Kilkenny and Carlow County Council. The extract from the CE's Report in relation to these two submissions are summarised in Table 2 below, and together with other changes as recommended in the CE's Report, a number of changes were proposed as Material Alterations.

**Table 2: Submissions to the Draft Plan and Environmental Report**

Ref No.	Name
<b>KKC148-4</b>	<b>Environmental Protection Agency (EPA)</b>
<b>Submission Summary:</b>	
<ol style="list-style-type: none"> <li>1. The EPA attached a guidance document 'SEA of Local Authority Land Use Plans – EPA Recommendations and Resources'. This document sets out their key recommendations for integrating environmental considerations into Local Authority land use plans</li> <li>2. The EPA note that Kilkenny and Carlow County Council must ensure the Plan aligns with key relevant higher-level plans and programmes and is consistent with the relevant objectives and policy commitments of the National Planning Framework and the Regional Spatial Economic Strategy for the Southern Region</li> </ol>	
<b>Chief Executive's Response &amp; Recommendation</b>	
<ol style="list-style-type: none"> <li>1. Noted. No Change</li> <li>2. Noted. No Change</li> </ol>	

Ref No.	Name
<b>KKC148-17</b>	<b>Dept of Tourism, Culture, Arts, Gaeltacht, Sport and Media (Development Applications Unit)</b>
<b>Submission Summary:</b>	
<b>Archaeology</b>	
<ol style="list-style-type: none"> <li>1. The submission welcomes the dedicated section to Architectural and Archaeological Heritage in the area. It recommends that the individual Recorded Monuments (RMPs) are also marked on Map 2.</li> <li>2. It is recommended to replace the following statement in Section 2.2.1 that Graiguenamanagh 'itself has remains of settlement dating from <u>thousands</u> of years earlier' than Duiske Abbey (dated 1204AD) – there is currently no evidence of prehistoric activity/settlement within the area of the JLAP. It is recommended that that the statement is replaced with 'may have yet unidentified sites/features of earlier archaeological activity associated with the settlement of the Graiguenamanagh-Tinnahinch area.'</li> <li>3. The submission recommends the inclusion of a statement on archaeological heritage for a clear understanding of the nature of archaeology and the archaeological heritage.</li> <li>4. It is also recommended to include an objective for the protection of the archaeological heritage in Section 3.3 'Strategic Objectives'.</li> <li>5. With regard to Section 8.3 the following should be considered for inclusion: <ol style="list-style-type: none"> <li>a) National monuments subject to Preservation Orders under the National Monuments Acts 1930 to 2014 and national monuments which are in the ownership or guardianship</li> </ol> </li> </ol>	

of the Minister for Housing, Local Government and Heritage or a local authority e.g. Duiske Abbey.

b) Archaeological objects within the meaning of the National Monuments Acts.

**Additional Objectives for inclusion:**

6. The Department recommends the inclusion of additional objectives in Section 8.3.2 to protect the archaeological heritage and development control objectives including climate change

**Information for inclusion in appendices.**

7. In Appendix B of the Draft Joint LAP it is recommended to include reference to [www.archaeology.ie](http://www.archaeology.ie) and the historic wreck records at <https://www.archaeology.ie/underwater-archaeology/wreck-viewer>

8. The Department recommends the inclusion of the following legislation in relation to the protection of the archaeological heritage

- The National Monuments Act 1930-2014
- The Planning and Development Act 2000 and the Planning and Development Regulations 2001
- The Environmental Impact Assessment (EIA) Directive
- International Conventions
- National Policy on the Protection of the Archaeological Heritage in the course of development – Framework and Principles for the Protection of the Archaeological Heritage

**Chapter 5 Economic Development & Tourism:**

9. The Department considers the Tourism and Recreational Project Concept Study to be a plan as defined by Article 2(A) of the Strategic Environmental Assessment (SEA) Directive (Directive 2001/42/EC), and to be a plan or project for the purposes of Article 6(3) of the Habitats Directive. The Department therefore considers that the Concept Study should have been subject to screening for Appropriate Assessment and if required, Appropriate Assessment (AA), and that consideration should have been given to the need for Strategic Environmental Assessment (SEA) also.

10. The Department is concerned that the specific proposals in the Concept Study which will directly impact on the River Barrow and River Nore SAC have not been assessed in sufficient detail in the Natura Impact Report (NIR) for the Draft Local Area Plan, particularly as the Study has not been subject to AA or SEA.

11. The Department welcomes the addition of a new zone 'Open Space/Biodiversity' to protect the river and its banks as a green corridor for wildlife and biodiversity and supports objective GIO 1.1 *'To carry out, as resources allow, Habitat and Green Infrastructure Mapping for Graiguenamanagh-Tinnahinch in order to reduce and avoid fragmentation or deterioration of the Green Infrastructure network and strengthen ecological links within Graiguenamanagh-Tinnahinch and to the wider regional network'*.

12. In relation to Objective GIO 1.2 the Department recommends the LAP should consider tree planting to enhance green infrastructure

13. The Department is concerned that Objective OSO2.25 has not been subject to sufficiently detailed assessment in the NIR, given that specific routes have been identified as indicated in Map 1 (Landuse Zoning Objective) which include significant lengths of riverbank areas along the River Barrow and Duiske River, both inside and outside the plan area.

**Chapter 8 Built & Natural Heritage:**

14. The Department would encourage the Councils to include an objective to conduct a bat survey as part of any planning permission required to redevelop historic buildings. The Department also advises that a bat survey and mitigation measures will be required in relation to proposals for lighting around the George Semple bridge and the Quay Graiguenamanagh and Tinnahinch (MTO 1.2 and MTO 1.10).



15. The Department suggests that an objective is included in the Plan to promote awareness of the rich biodiversity assets within Graiguenamanagh and Tinnahinch.
16. For the purpose of clarity, the Department suggests amalgamating Section 8.4 and 10.6

#### **Chapter 9 Movement & Transport:**

17. The Department considers the Mobility Management Plans outlined in Objective MTO 1.2 and MTO 1.8 will require screening for Appropriate Assessment

#### **Infrastructure & Environment**

18. The Department considers that cumulative impacts of the stated policy (of allowing private water supplies within the plan area in order to achieve the population growth targets and whether these impacts will affect the hydrological regime of the River Barrow and River Nore SAC) is something which can only be adequately assessed at plan level, and therefore considers that this matter needs to be addressed as part of the appropriate assessment for the Plan.
19. The Department notes that Section 10.3 requires amendment referring to water quality of River Barrow
20. The Department has requested for the inclusion of the potential role of natural water retention measures to be mentioned in relation to Objective INF3.
21. The Department suggests the inclusion of an objective in the Plan to work with Inland Fisheries Ireland and the OPW to remove barriers to fish movement as part of any instream development works in the Duiske river
22. It is considered by the Department the masterplan areas prepared under Objective MPO1.1 and MPO 1.2 will require screening for Appropriate Assessment
23. Section 1.6 Planning Policy 'Ireland's National Biodiversity Plan 2011-2016' should be changed to 'Ireland's National Biodiversity Plan 2017-2021'.
24. In relation to all objectives for development within the riparian zone of the River Barrow and Duiske River, the Department recommends that reference should be made to the recently updated guidance by Inland Fisheries Ireland on planning for watercourses in the urban environment, particularly in relation to riparian buffer zones.

#### **Matters relating to the Strategic Environmental Assessment**

1. The Department considers that tourism and recreation provision objectives within and adjacent to the River Barrow and River Nore SAC and the stated policy of allowing private water supplies within the Plan area in order to achieve the population growth targets should be identified as potential significant environmental effects on biodiversity SEO's, which require assessment and for which appropriate plan-level mitigation measures may need to be identified.
2. The Department advises the Council that in line with EPA Guidance monitoring should focus on measures to monitor the identified potential significant environmental effects and the effective implementation of mitigation measures, not the full range of environmental criteria used to assess the Plan.
3. The Department suggests that the phrase 'enhance biodiversity' is changed to 'conserve and restore' biodiversity.
4. The Department advises that Table 3.3 should be omitted and that the National Biodiversity Data Centre and NPWS Biodiversity records are consulted to ascertain a more accurate picture of such species within the Plan area.

#### **Matters relating to the Natura Impact Report**

1. The Natura Impact Report (NIR) (Stage 2 AA) of the Plan, dated March 2020, prepared by Forward Planning, Kilkenny County Council & Carlow County Council has not confined potential effects to the effects arising from the Plan as stated.
2. The Department advises that mitigation measures should be specifically related to potential adverse effects identified in relation to each qualifying interest habitats and species identified

within the Plan's zone of influence.

**Chief Executive's Response & Recommendation:**

1. The RMP are indicated on the Map 2 as presented with the Draft Plan. No change required
2. Noted. Change the text as follows: *'The town has a rich heritage and may have yet unidentified sites/features of earlier archaeological activity associated with the settlement of the Graiguenamanagh-Tinnahinch area.'*
3. Archaeological Heritage is set out clearly in the Kilkenny County Development plan 2014-2020 and the Draft Kilkenny City and County Development Plan 2021-2027. No change recommended.
4. Strategic Objective covered in County Plan. No change recommended.
5. Noted, Objective ARCO1.1 will be amended as follows: ARCO1.1 *'To protect and preserve all Archaeological objects within the meaning of the National Monuments Acts ~~items of archaeological interest~~ from inappropriate development that would adversely affect and/or detract from the interpretation and setting of these historic sites.'*
6. These Strategic Objectives are more appropriate for inclusion in the County Development Plan which contains the Development Management Requirements for the County in general. No change recommended.
7. Noted. In Appendix B of the Draft Joint LAP will include reference to [www.archaeology.ie](http://www.archaeology.ie) and the historic wreck records at [https://www.archaeology.ie /underwater-archaeology/wreck-viewer](https://www.archaeology.ie/underwater-archaeology/wreck-viewer)
8. These references are more appropriate for inclusion in the higher-level County Development plan. No change recommended.
9. The Tourism and Recreational Project study was a Concept Study and the spatial objectives to support the recommendations from the Study have been subject to the SEA (pg. 56) and the NIS (Section 4) for the LAP. It is considered that if the zoning classification of the LAP and mitigation measures proposed are implemented fully it is considered that adverse effects on the integrity of the SAC and SPA can be avoided.

**Recommendation:** To reinforce that avoidance objective TO2.1 and TO2.2 will be reworded as follows:

**TO2.1:** *To support the implementation of the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study, and the development of tourism infrastructure (in particular at The Hub), overnight accommodation (in particular Brandondale House), attractions and facilities at appropriate locations subject to the appropriate protection of architectural heritage and natural amenities and appropriate statutory processes required by the European Habitats Directive.*

**TO2.2:** *To support the implementation of the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study, and the development of outdoor leisure activities and a River Park and associated uses on lands that are designated as open space, subject to the protection of landscape character and natural heritage and appropriate statutory processes required by the European Habitats Directive*

10. The Joint Plan has regard to the proposals contained in the Concept study. The particular project proposals from the Concept Study that are contained in the Local Area Plan will be further analysed at project level appropriate assessment screening and Natura Impact statement if required in accordance with Article 6 Habitats Directive. No Change recommended.
11. Support of GIO1.1 noted. No Change Recommended
12. Policy GIO 1.2 implies tree planting but it will be more explicitly stated as follows: GIO 1.2 to: To preserve, protect and augment trees, groups of trees, woodlands and hedgerows within the settlement by increasing, where appropriate, tree canopy coverage *and tree planting* using locally native species by incorporating them within design proposals and supporting

their integration into the existing Green Infrastructure network.

13. The location of the path along the riverside is indicative only. The River Barrow has an existing tow path which comprises part of an existing long-distance walking route. The objective OSO 2.25 seeks to enhance the use of strategic open spaces in the town and promote a network of paths and cycle routes as indicative routes throughout the town. Any upgrades or new proposals will be subject to the requirements of the Habitats Directives as maybe required.

**Recommendation:** Include 'indicative' on Map 1. Specific proposals for development adjoining the River Barrow, will need to consider the designation of the River as a Special Area of Conservation (cSAC), and will be subject to project level AA in the preparation of the detailed design of any scheme. No development which may lead to adverse impacts on the River Barrow will be permitted as part of the JLAP. Sufficient mitigation is included in the Plan in this regard.

14. Bat Surveys are a Development Management Requirement/prerequisite and are best included in that process and should be provided for in the County Development Plan. No change recommended.
15. It is not the function of the spatial plan for Graiguenamanagh/Tinnahinch to promote awareness. Sufficient mitigations are included in the Plan to protect biodiversity. No Change
16. The Sections will be amalgamated as suggested for easier reference. Amalgamate Section 10.6 Natural Heritage with Section 8.4 Natural Heritage and Biodiversity
17. Noted. This however does not require a statement in the Plan as all Mobility plans and the work arising from same are screened in accordance with the Habitats Directive. No change recommended.
18. As indicated in The Irish Water submission the objective is to address public water supply issues and therefore not require reliance on private water supplies. As outlined investigations are on-going in order to address the deficit for Graiguenamanagh Water Resource Zone. To protect the hydrological regime of the River Barrow SAC, an additional objective INFO 1.2 will be inserted as follows: *INFO 1.2 Where a private water supply is proposed for development the Council will require the cumulative impacts of a private water supply on the hydrological regime of the River Barrow SAC to be addressed as part of any project assessment.*
19. Noted. The correct water quality reference as moderate will be inserted in 10.3 as follows: *The status of the River Barrow in Graiguenamanagh is moderate.*
20. Comments noted in relation to natural water retention measures. It is recommended to include reference to the potential role of natural water retention measures in Objective INF3 as follows:  
*INFO3.4: To require the preparation of Drainage Impact Assessments, in line with the SFRA for this Draft Joint LAP, for all development proposals within the plan area and to consider sustainable drainage and natural water retention measures. 'To identify any measures, such as natural water retention measures, that can have benefits for Water Framework Directive, flood risk management and biodiversity objectives'*
21. Comments in relation to blockages in the Duiske River are noted. It is recommended that an objective be included as follows: *NHO1.6 "To work with Inland Fisheries Ireland and the OPW to remove barriers to fish movement as part of any instream development works in the Duiske River"*
22. Noted, the requirement for appropriate assessment screening of Objective MPO1.1 and MPO 1.2 is already included in the text of the JLAP in Section 11.3.1.
23. Comment noted, reference to Irelands 'National Biodiversity Plan 2011-2016' will be changed to *'Ireland's National Biodiversity Plan 2017-2021'* in Section 1.6
24. Noted. It is recommended to include the following new objective under *NHO1.7 'It is an objective to consider guidance by Inland Fisheries Ireland on planning for watercourses in the*

*urban environment, particularly in relation to riparian buffer zones.'*

#### **Matters relating to the Strategic Environmental Assessment**

1. The objectives in relation to tourism and recreation facilities, have been identified as having potential significant effects (Section 3 pg. 33 of NIS). Mitigations are contained in the Plan in the form of zoning objective for Open Space/Biodiversity in addition to objectives NHO1.1, NHO1.2, NHO1.3 and NHO1.4 as mitigation. The provision of private water supply is the subject of a new objective **INFO1.2 to protect against the impact on the hydrology of the River Barrow SAC. This objective will be screened for inclusion in the AA and SEA for the material alterations.**
2. Chapter 8 of the SEA sets out the monitoring proposals. This will be revisited to ensure, that monitoring focuses on measures to monitor the identified potential significant environmental effects and the implementation of mitigation measures.
3. References to enhance biodiversity will be amended to 'conserve and restore' biodiversity.
4. Table 3.3 will be omitted and the National Biodiversity Data Centre and NPWS Biodiversity records will be consulted to ascertain a picture of species within the Plan area.

#### **Matters relating to the Natura Impact Report**

1. The Natura Impact report (NIR) includes a comprehensive assessment of the potential effects arising from the Plan, but it will be amended to ensure that mitigation measures are specifically related to conservation objectives of the Natura 2000 sites and how they address the potential adverse effects identified.
2. Noted

## **5.5 Submissions and observations on the Proposed Material Alterations**

The Proposed Material Alterations to the Draft Joint plan and Environmental Report were published on the 9<sup>th</sup> April and remained in public display until the 7<sup>th</sup> May 2021. During the 4 week public consultation period, a total of 8 submissions were received of which two submissions referred to the SEA.

Responses to submissions made on the Environmental Report and AA and SFRA documents during the period of public display were integrated into a Chief Executive's Report and considered by Kilkenny and Carlow County Council. The extract from the CE's Report in relation to these two submissions are summarised in Table 3 below.

**Table 3: Submissions to the Proposed Material Alterations and Environmental Report**

<b>Name</b>	<b>Summary</b>
<b>KK-C162-2 Environmental Protection Agency (EPA)</b>	<ol style="list-style-type: none"><li>1. The EPA attached a guidance document 'SEA of Local Authority Land Use Plans – EPA Recommendation and Resources'. This document sets out their key recommendations for integrating environmental considerations into Local Authority land use plans.</li><li>2. The EPA note that Kilkenny and Carlow County Council must ensure the Plan aligns with key relevant higher-level plans and programmes and is consistent with the relevant objectives and policy commitments of the National Planning Framework and the Regional Spatial Economic Strategy for the Southern Region.</li></ol>
<b>Response:</b>	
<ol style="list-style-type: none"><li>1. Noted, the Plan complies with all relevant requirements.</li></ol>	

2. Noted, the plan is consistent with higher level plans, including the NPF, the RSES and the draft Kilkenny City and County Development Plan.

**Recommendation:**

1. No change recommended.
2. No change recommended.

Name	Summary
<b>KK-C162-4 Development Applications Unit (DAU)</b>	<ol style="list-style-type: none"> <li>1. The Department considers the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study should have been subject to screening for Appropriate Assessment and if required, Appropriate Assessment, and that consideration should have been given to the need for SEA in respect of the Study also.</li> <li>2. The Department considers that the assessment in Section 4 of the Natura Impact Report is insufficient as it does not assess the impacts of all projects outlined in the Concept Study in sufficient detail and does not propose mitigation specific to these projects.</li> <li>3. It is suggested Objective GIO1.1 is prioritised for action by the Councils.</li> <li>4. The Department recommends the inclusion of an objective to enhance the connectivity of isolated woodlands through tree planting</li> <li>5. In relation to Objective INFO3.4 the Department considers the cumulative impacts on the River Barrow and River Nore SAC can only be adequately assessed at a strategic level. It is considered this matter needs to be addressed as part of the Appropriate Assessment of the Plan</li> </ol>

**Response:**

1. The Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study is a separate document to the Graiguenamanagh- Tinnahinch Local Area Plan. Proposals contained in the concept study which also appears in the Local Area Plan were subjected to full SEA and AA in the Graiguenamangh/Tinnahinch as part of the Local Area Plan process. The Local Area Plan therefore stands separate and any requirement regarding the undertaking of an AA for the Concept Study is not an issue that can be considered as part of the Local Area Plan process.
2. To remove reference to the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study.
3. *“GIO 1.1: To carry out, as resources allow, Habitat and Green Infrastructure Mapping for Graiguenamanagh-Tinnahinch in order to reduce and avoid fragmentation or deterioration of the Green Infrastructure network and strengthen ecological links within Graiguenamanagh-Tinnahinch and to the wider regional network.”*  
The Planning Authority does consider the mapping a priority, subject to both financial and staffing resources available over the period of the Plan (2021-2027).
4. Connections to isolated woodlands beyond the boundary of the Plan would be more appropriately addressed as part of the Development Plan process. The Plan does provide for indicative cycleway/pedestrian improvements within the settlement boundary to improve connectivity to Silaire Wood.
5. *INFO3.4: To require the preparation of Drainage Impact Assessments, in line with the SFRA for this Draft Joint LAP, for all development proposals within the plan area.*  
This objective provides further detail on issues to be considered in any Drainage Impact Assessment going forward.

**Recommendation:**

1. No Change Recommended
2. Delete reference to the Graiguenamangh-Tinnhinch Tourism and Recreational Concept Study

form text in Section 2.9.3.1 as follows:

**TO2.1:** To support ~~the implementation of the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study,~~ and the development of tourism infrastructure (in particular at The Hub), overnight accommodation (in particular Brandondale House), attractions and facilities at appropriate locations subject to the appropriate protection of architectural heritage and natural amenities.

**TO2.2:** To support ~~the implementation of the Graiguenamanagh-Tinnahinch Tourism and Recreational Project Concept Study,~~ and the development of outdoor leisure activities and a River Park and associated uses on lands that are designated as open space, subject to the protection of landscape character and natural heritage (Natura 2000 conservation objectives) and inclusion of construction management plans.

3. No Change Recommended
4. No Change Recommended
5. No Change Recommended

Kilkenny and Carlow County Council has taken into account the findings of all relevant SEA output during the consideration of the Joint Local Area Plan and before the Plan was adopted. On adoption of the Plan, the original Environmental Report which had been placed on public display alongside the Draft Joint Plan was updated to become a final Environmental Report which is consistent with the adopted Plan, taking into account recommendations included in the submissions as well as alterations that were made to the original Draft Plan that was placed on public display.

## 6 Alternatives and the Plan

### 6.1 Introduction

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment. The description of the environmental baseline (both maps and text) and Strategic Environmental Objectives (SEOs) are used in the evaluation of alternatives.

### 6.2 Description of Alternative Plan Scenarios

Three alternative development strategies for Graiguenamanagh-Tinnahinch were developed as follows:

#### Alternative 1: Continued consolidation

Alternative 1 concentrates growth mainly into the existing urban centre of Graiguenamanagh-Tinnahinch, with little growth being allocated to rural areas. Access to public transport is a guiding principle of this approach.

#### Alternative 2: Dispersed growth

This scenario is one which places very few restrictions on development throughout the Plan area. The 'pot' of zoned land would be distributed throughout the area, without prioritisation. Development would be allowed to proceed in an ad hoc manner and would follow market forces to a great extent. Most development would occur on greenfield sites at a remove from the existing urban centre.

Alternative 2 envisages potentially inappropriate lands zoned for development without truly assessing the overall implications. Significant levels of ribbon development along roads in the plan area would result. Development would occur in unserved or in insufficiently served areas. It would most likely lead to a highly dispersed settlement pattern.

This would lead to a weakening of the centre of Graiguenamanagh-Tinnahinch. Whilst this alternative would allow for a freedom of development, it is not sustainable. It would lead to a significant shift towards rural rather than urban development. Ultimately it could lead to a loss of population base within Graiguenamanagh-Tinnahinch and consequently a loss of critical mass for the development of key services and facilities. Furthermore, urban generated housing within the transport corridors would have long term implications for future road development and would compromise re-alignments, or road geometry with adverse risks to road users. The proliferation of one-off housing would have negative effects on water quality (which is identified as a key SEO for the Plan) and a rise in unsustainable travel patterns with resulting effects on air quality and greenhouse gas emissions. The provision of key services such as water supply and wastewater treatment would become costly in both financial and environmental quality terms.

#### Alternative 3: Selection of new growth areas

This alternative prioritises areas outside the existing urban centre of Graiguenamanagh-Tinnahinch for growth, such as, Mooneen and Ballymurphy. Both these small places would be subject to zoning in this Plan to accommodate the proposed population increase. There are no services in either of these areas to serve such a population increase and this approach would result in an increase in unsustainable travel patterns.



### 6.3 Evaluation of Alternative Plan Scenarios

This section summarises the evaluation of the Alternative Scenarios that is found in Section 5.5 of the Environmental Report.

#### Alternative 1: Continued consolidation - Likely significant effects (See Figure 5.1)

##### Environmental impacts

This alternative concentrates populations into the existing centre of Graiguenamanagh-Tinnahinch, which has existing services and facilities, and access to public transport. Investment in key infrastructure can be concentrated here and sustainable travel is promoted. Valuable natural resources such as water quality are protected through targeted infrastructural measures.

##### Planning impacts

This alternative does not support the rural population, which may lead to a population decline in rural areas i.e. Mooneen, Ballymurphy

#### Alternative 2: Dispersed growth - Likely significant effects (See Figure 5.2)

##### Environmental impacts

The environmental consequences of this alternative are potentially severe. The dispersal of rural housing and other non-agriculture related development in the countryside would lead to unsustainable transport patterns; it could lead to a deterioration in ground water quality through the proliferation of septic tanks; surface water quality could be affected through contaminated ground water, habitats and areas of natural interest could be lost or fragmented; and finally, a deterioration in landscape quality could ensue.

##### Planning impacts

The provision of key services such as water supply and wastewater treatment would become costly in both financial and environmental quality terms. The settlement of Graiguenamanagh-Tinnahinch would suffer from the dilution of its population base.

#### Alternative 3: Selection of new growth areas - Likely significant effects (See Figure 5.3)

##### Environmental impacts

In this alternative, large growth areas would be formed around both Mooneen and Ballymurphy. Directing growth into these smaller centres would detract from the emphasis on Graiguenamanagh-Tinnahinch as a sustainable urban centre and would result in an increase in unsustainable travel patterns and a negative effect on air quality. As Mooneen and Ballymurphy were not historically large service centres, there are very few opportunities for brownfield redevelopment, and most development in both would take place on the edges of the centres, on greenfield land. This would have negative environmental effects through the increased replacement of agricultural land by artificial surfaces.

##### Planning impacts

From a social and economic perspective, existing services in Graiguenamanagh-Tinnahinch would suffer with the dispersal of population.

## 6.4 Reasons for choosing the Plan, as adopted, in light of the other reasonable alternatives dealt with

Table 5.3 of the Environmental Report assessed each Alternative against each of the SEA objectives.

Table 5.1 Assessment of Alternatives			
Environmental Parameter – SEA Objective	Alternative		
	1: Continued Consolidation	2: Dispersed Growth	3: Selection of New Growth Areas
<b>Biodiversity, Flora and Fauna</b>			
To preserve, protect, maintain and, where appropriate, enhance the terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species.			
Ensure no adverse effects on the integrity of any European site, with regard to its qualifying interests, associated conservation status, structure and function.			
Safeguard national, regional and local designated sites and supporting features which function as stepping stones for migration, dispersal and genetic exchange of wild species.			
Enhance biodiversity in line with the National Biodiversity Strategy and its targets.			
To protect, maintain and conserve the County's Natural Capital			
<b>Population and Human Health</b>			
To create an environment where every individual and sector of society can play their part in achieving a more healthy Ireland.			
Consolidate growth and limit urban sprawl.			
Enhance human health and promote healthy living through access to active travel opportunities, especially walking and cycling.			
Promote economic growth to encourage retention of working age population.			
Ensure that existing population and planned growth is matched with the required public infrastructure and the required services.			
Safeguard the county's citizens from environment-related pressures and risks to health and well-being.			
<b>Water</b>			
Ensure that the status of water bodies is protected, maintained and improved in line with the requirements of the WFD and MSFD.			
Ensure that economic growth of the marine resource and its ecosystems are managed sustainably.			
Ensure water resources are sustainably managed to deliver proposed growth in the context of existing and projected water supply and			

wastewater capacity constraints ensuring the protection of receiving environments.	Green	Red	Red
Avoid inappropriate development in areas at risk of flooding and areas that are vulnerable to current and future erosion.	Green	Red	Red
Integrate sustainable water management solutions (such as SuDS, porous surfacing and green roofs) into development proposals.	Green	Red	Red
<b>Land and Soils</b>			
Protect soils against pollution, and prevent degradation of the soil resource.	Green	Red	Red
Promote the sustainable use of infill and brownfield sites over the use of greenfield.	Green	Red	Grey
Safeguard areas of prime agricultural land and designated geological sites.	Grey	Red	Red
<b>Air</b>			
To avoid, prevent or reduce harmful effects on human health and the environment as a whole resulting from emissions to air from all sectors with particular reference to emissions from transport, residential heating, industry and agriculture.	Green	Red	Red
Maintain and promote continuing improvement in air quality through the reduction of emissions and promotion of renewable energy and energy efficiency.	Green	Red	Red
Promote continuing improvement in air quality.	Green	Red	Red
Reduction of emissions of sulphur dioxide, nitrogen oxides, volatile organic compounds, ammonia and fine particulate matter which are responsible for acidification, eutrophication and ground-level ozone pollution	Green	Red	Red
Meet Air Quality Directive standards for the protection of human health — Air Quality Directive	Green	Green	Green
Significantly decrease noise pollution by 2020 and move closer to WHO recommended levels	Green	Red	Red
<b>Climate</b>			
To minimise emissions of greenhouse gasses.	Green	Red	Red
Integrate sustainable design solutions into infrastructure (e.g. energy efficient buildings; green infrastructure).	Green	Green	Green
Contribute towards the reduction of greenhouse gas emissions in line with national targets.	Green	Red	Red
Promote development resilient to the effects of climate change.	Green	Grey	Grey
Promote the use of renewable energy, energy efficient development and increased use of public transport.	Green	Red	Red
<b>Material Assets</b>			
Optimise existing infrastructure and provide new infrastructure to match population distribution proposals.	Green	Red	Red
Ensure access to affordable, reliable, sustainable and modern energy for all which encourages a broad energy generation mix to ensure security of supply – wind, wave solar, tidal, biomass, energy from waste (EfW), and traditional fossil fuels.	Green	Grey	Grey
Promote the circular economy, reduce waste, and increase energy efficiencies.	Green	Red	Red
Ensure there is adequate sewerage and drainage infrastructure in place to support new development.	Green	Red	Red

Reduce the energy demand from the transport sector and support moves to electrification of road and rail transport modes.	Green	Red	Red
Encourage the transition to a zero carbon economy by developing grid infrastructure to support renewables (onshore and offshore), and international connectivity.	Green	Red	Red
Reduce the average energy consumption per capita including promoting energy efficient buildings, retrofitting, smart- buildings, cities and grids.	Green	Red	Red
<b>Cultural Heritage</b>			
Protect places, features, buildings and landscapes of cultural, archaeological or architectural heritage	Green	Red	Green
<b>Landscape</b>			
To provide a framework for identification, assessment, protection, management and planning of landscapes having regard to the European Landscape Convention	Green	Red	Green

Having considered the three alternatives, Alternative 1: Continued Consolidation emerges as the preferred alternative, as this has the fewest potentially negative impacts on the Strategic Environmental Objectives (SEOs).

## 7 Monitoring Measures

### 7.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This section outlines the measures for monitoring the likely significant effects of implementing the Plan.

Table 8.1 overleaf shows the indicators and targets which have been selected for monitoring the likely significant environmental effects of implementing the Plan, if unmitigated. The Monitoring Programme may be updated to deal with specific environmental issues - including unforeseen effects - as they arise. Such issues may be identified by the Council or identified to the Council by other agencies.

**Table 8.1 Monitoring proposals for environmental categories**

<b>Environmental Category</b>	<b>Targets</b>	<b>Selected indicators</b>	<b>Data Sources</b>	<b>Monitoring frequency</b>
<b>Biodiversity -Flora and Fauna</b>	No loss of important and/or designated habitats	Number of sites.	Kilkenny County Council/Carlow County Council/National Parks and Wildlife Service/Fisheries Board	Ongoing depending on available information from relevant statutory authorities
	No deterioration in the quality of protected areas	Overall conservation status of habitats in Co. Kilkenny and Co. Carlow	The NPWS; For all European sites: Report on Overall Conservation Status of Habitats in Ireland listed under the Habitats Directive (NPWS).	Every 6 years
	No loss of protected species	Overall conservation status of species in Co. Kilkenny and Co. Carlow, distribution of protected species in Co. Kilkenny and Co. Carlow	NPWS, Report on Overall Conservation Status of Habitats in Ireland listed under the Habitats Directive. National Biodiversity Data Centre	Every 6 years
	No spread of invasive species within the Plan area	Numbers of new cases identified over 2014 levels	National Biodiversity Data Centre	Ongoing depending on available information
<b>Population and Human health</b>	No loss of population within Plan area	Total population within settlement boundary	Census	Next Census
<b>Water</b>	No decline in river water quality; no increase in percentage of sample stations in seriously polluted rivers.	Percentage of sample stations in seriously polluted rivers.	EPA Reports on River water quality	Ongoing depending on available information
	No decline in estuarine water quality; no decline in status of estuarine waters from current status (good or moderate)	Status of estuarine waters	EPA	Ongoing depending on available information
	No decline in surface water quality; no decline in status of surface waters from current status	Status of surface water	EPA	Ongoing depending on available information
	No decline in groundwater quality; no decline in status of groundwater from current status	Status of groundwater	EPA	Ongoing depending on available information

	No reduction in processing of waste water and treated effluent quality; no failure of Graiguenamanagh plant in EPA reports.	Pass or Fail status of Graiguenamanagh plant in EPA reports on Urban Waste Water Treatment.	EPA	Ongoing depending on publication of reports
	Improvement in quality of drinking water; no Scheme being included on the EPA's Remedial Action List.	Inclusion/not being included on the EPA's Remedial Action List.	EPA	Publication of EPA's Remedial Action List
	Improvement in application of groundwater protection scheme	No significant increase in number of septic tanks permitted within the Plan area	Kilkenny County Council/Carlow County Council	Periodic review
<b>Air</b>	Increase in proportion of people using sustainable transport	Proportion of people walking, cycling or using public transport to get to school or work.	Census	Next Census
	No decrease in air quality; no exceedances in Nitrogen Dioxide and Ozone.	Exceedances in Nitrogen Dioxide and Ozone.	EPA	Ongoing depending on publication of reports
<b>Cultural Heritage (architectural and archaeological)</b>	Increase, or maintenance of the number of structures listed on the RPS; no reduction of the number of protected structures over that listed in 2009 Graiguenamanagh Plan and 2010 Tinnahinch Plan	Number of protected structures.	Kilkenny County Council/Carlow County Council	Periodic review



