CALLAN LOCAL AREA PLAN 2019-2025

Environmental Report

Prepared for: Kilkenny County Council

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BASIS OF REPORT

CONTENTS

DOCUMENT REFERENCES

TABLES

FIGURES

Non-Technical Summary

Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report (ER) for the Callan Local Area Plan 2019-2025 (LAP). The purpose of the ER is to provide a clear understanding of the likely environmental consequences of decisions regarding the future development of the plan area.

What is an SEA?

Strategic environmental assessment (SEA) is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic, social and other considerations.

Why is it needed?

The SEA is being carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management. The output of the process is an ER and SEA Statement, both of which should be read in conjunction with the LAP.

How does it work?

All of the main environmental issues in the plan area are assembled and presented to the team who prepare the Plan. This helped them to devise a Plan that protects whatever is sensitive in the environment. It also helped to identify wherever there are environmental problems in the area and ideally the Plan tries to improve these. In order to decide how best to make a Plan that protects the environment as much as possible, the planners examined alternative versions of the Plan. This helped to highlight the type of Plan that is least likely to harm the environment.

What is included in the Environmental Report which accompanies the Plan?

The ER contains the following information:

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Plan;
- An assessment of the Plan objectives; and,
- Mitigation measures which set out to aid compliance with important environmental protection legislation - e.g. the Water Framework Directive, the Habitats Directive - and which will avoid/reduce the environmental effects of implementing the Plan.

What happens at the end of the process?

Upon the making of the Plan a document will be made public, referred to as the SEA Statement. The SEA Statement includes information on how environmental considerations have been integrated into the Plan and why the preferred alternative was chosen for the Plan in light of the other alternatives.

Section 2 The Plan

Content of the Plan

The Plan has been prepared by Kilkenny County Council and comprises a written document with maps and appendices. The Plan will set the strategic context for planning applications within the Plan area. The contents of the Plan (as set out in its chapter headings) are as follows:

1. Introduction and Strategic Context
2. Callan In Context
3. Vision and Strategic Objectives
4. Core Strategy and Zoning
5. Town Centre, Economic Development and Employment
6. Housing and Community
7. Cultural, Built and Natural Heritage
8. Recreation, Tourism and The Arts
9. Infrastructure And Environment
10. Implementation

Interactions with Relevant Policy, Plans or Programmes

The Plan sits within a hierarchy of other plans. The Plan must comply with higher level strategic plans. The higher level plans include the following:

- Ireland 2040 – The National Planning Framework (2018)
- Regional Spatial and Economic Strategy for the Southern Region (awaiting draft)
- The Kilkenny County Development Plan 2014 - 2020
- Smarter Travel: A Sustainable Transport Future, 2009 - 2020
- Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change – July 2017
- National Climate Change Policy, 2013
- The National Mitigation Plan, 2017
- National Adaptation Framework, Planning for a Climate Resilient Ireland, 2018
- River Basin Management Plan for Ireland 2018-2021
- Kilkenny Local Economic and Community Plan 2016 - 2021
- Framework for Town Centre Renewal, 2017
- Callan Town Centre Health Check
- Draft Callan Town Improvement Plan, 2018
- Kilkenny Age Friendly County Strategy 2017 - 2022

Section 3 The Environmental Baseline

Introduction

The environmental baseline of the plan area is described in this section. This baseline, together with the Strategic Environmental Objectives which are identified in Section 1, are used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Plan and to determine appropriate monitoring measures. The environmental baseline is described in line with the legislative requirements encompassing the following components:

1. Biodiversity, Flora and Fauna
2. Population and Human Health
3. Soil
4. Water
5. Air
6. Climatic Factors
7. Material Assets
8. Cultural Heritage (architectural and archaeological)
9. Landscape
10. The inter-relationship between these issues

Evolution of Environment in the Absence of a Plan

Problems were outlined under each heading above and historical trends were presented where possible. In the absence of the new Plan there would be no long term area-specific framework or guidance for development within the plan area. Specifically, the following could occur:

1. Biodiversity, Flora and Fauna

Although some areas of sensitivity, such as the Natura 2000 sites, would continue to be protected under EU law, undesignated habitats such as hedgerows would suffer from a lack of protection.

2. Population and Human Health

In the absence of a Core Strategy and appropriate settlement policies there would be no framework directing development away from the most sensitive areas.

3. Soil

There would be no framework for directing development and growth to appropriate brownfield sites and therefore, greenfield development would occur on an increased basis, resulting in a loss of non-renewable soil resources.

4. Water

Water supplies and wastewater treatment would continue to be governed by the Water Framework Directive. However, the phasing of development in accordance with local need would not be implemented and therefore applications would proceed on an ad-hoc basis, without due regard to the potential for affecting the groundwater and locally important aquifer.

5. Air

In the absence of detailed Smarter Travel objectives and a coherent approach, development would occur in a dispersed pattern, leading to an increase in unsustainable travel patterns and a subsequent increase in travel related emissions.

6. Climatic factors

With no Strategic Flood Risk Assessment, inappropriate development could take place in areas of flood risk.

7. Material Assets

There would be no detailed framework to provide the infrastructure, such as energy infrastructure, that the area requires.

8. Cultural Heritage (architectural and archaeological)

The Plan includes detail on the Record of Protected Structures within the area. If this were not to occur, cultural heritage would not be protected to the fullest extent possible, as additions to the RPS would not be carried out.

9. Landscape

In the absence of open space designation, which forms an element of the Plan, there would be no framework guiding developments to avoid areas of highest sensitivity.

Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are measures against which the environmental effects of the Plan can be tested. If complied with in full, SEOs would reduce the environmental effects of plan implementation.

The SEA Directive requires that relevant environmental protection objectives (EPOs), established at international, EU or national level are listed in the Environmental Report. The Guidelines include an indicative list of EPOs, which has been followed here. The Guidelines also recommend that broad planning policy objectives (PPOs) are defined for the area. Both the EPOs and the PPOs combine to form the SEA objectives, and these are set out in Table NTS1.

Table NTS1 SEA Objectives

Ref	Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
1 BIO	Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development	Loss of habitats and species (CDP)	Biodiversity, flora and fauna	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity Actions for Biodiversity 2011- 2016, Ireland's National Biodiversity Plan (2011)
2 HEA	Improve the health and wellbeing of the population in Callan including relevant environmental health issues re air quality and noise. Protect material assets	Deprivation index No. of complaints re noise Air quality.	Population and Human Health	Our Sustainable Future: A framework for sustainable development for Ireland (2012) Ireland 2040 – The National Planning Framework (2018) Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009) Directive 2002/49/EC of 25 June 2002 relating to the assessment and management of environmental noise Directive 96/62/EC – Air Quality Framework Directive Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC)
3 WAT	Prevent pollution and contamination of groundwater	Faecal Coliform counts per 100ml of groundwater	Water	EU Water Framework Directive (2000/0/EC)

Ref	Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
		(CDP) New developments granted permission which cannot be adequately served by the current wastewater treatment plant		
4 WAT	Protect and improve river water quality in Callan	Biotic Quality Rating (Q value) (CDP)	Water	EU Water Framework Directive (2000/0/EC)
5 WAT	Protect and improve water supply	Levels of E-Coli present in drinking water Developments granted permission which cannot be adequately service by current water supply	Water and Human Health	EU Water Framework Directive (2000/0/EC)
6 CLI	Adapt and mitigation the effects of climate change, including flood risk	Developments granted permission on flood plain / unauthorised development on floodplain Recorded flooding episodes No. of developments supplied by renewable energy sources % of those travelling to work, school or college using a car	Climatic factors / Material Assets	EU Directive on the assessment and management of flood risks [2007/60/EC], The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) National Adaptation Framework, Planning for a Climate Resilient Ireland, 2018

Ref	Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
7 HER	Protect and conserve Callan's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows	Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP) No. of vacant structures on the RPS	Cultural Heritage	
8 LAN	Protect and enhance valued natural and historic landscapes and features within them.	Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)	Landscape	The European Convention on Landscape, 2000 A National Landscape Strategy for Ireland Strategy Issues paper for consultation (2011)
9 SOIL	Protect and enhance soil	% of development on brownfield land	Soil	A Resource Opportunity, Waste Management Policy in Ireland. Department of the Environment, Community and Local Government July 2012

Section 4 Alternative Scenarios

Description of the Alternative Plan Scenarios

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative scenarios for the future development of the plan area. The implementation Roadmap for the National Planning Framework has allocated a projected population growth figure for the plan area, which must be adhered to. This population projection is translated into a housing land requirement, or a 'pot' of zoned land, which must be distributed in the plan area. Three alternatives were considered, each focusing on a different distribution of the growth as allocated by the RPGs.

Alternative 1: Continued consolidation

Alternative 1 concentrates growth mainly into the existing urban centre of Callan, with little growth being allocated to rural areas. Access to existing infrastructure 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 zoned land requirement 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 outside the existing urban centre.

Alternative 2 envisages uncoordinated and potentially inappropriate lands zoned for development. Significant levels of incremental development i.e. ribbon development along roads within the plan area would result. Development would occur in unserviced or in insufficiently serviced areas and it would more than likely lead to a highly dispersed settlement pattern.

This would undermine the vibrancy of Callan town centre and would lead to a significant shift towards rural rather than urban development. Ultimately it could lead to a loss of population base within Callan and consequently a loss of critical mass for the development of key services and facilities. Dispersed development patterns would have negative effects on water quality (which is identified as a key Environmental Objectives 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 Callan, such as Windgap and Tullamaine. Both these small places would be subject to large levels of 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.

Evaluation of Alternative Scenarios

This section summarises the evaluation of the Alternative Scenarios that is found in Section 5 of the Environmental Report.

Alternative 1: Continued consolidation - Likely significant effects

Environmental impacts

This alternative concentrates populations into the existing centre of Callan, 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.

Alternative 2: Dispersed growth - Likely significant effects

Environmental impacts

The environmental consequences of this alternative are potentially significant. 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 population base in Callan would gradually weaken.

Alternative 3: Selection of new growth areas - Likely significant effects

Environmental impacts

In this alternative, large growth areas would be formed around both Windgap and Tullamaine. Directing growth into these smaller centres would detract from the emphasis on Callan as a district town, and would result in an increase in unsustainable travel patterns and a negative effect on air quality. As Windgap and Tullamaine 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 that is unserviced. This would have negative environmental effects through the increased replacement of agricultural land by artificial surfaces.

Planning impacts

From a social and economic perspective, the viability of existing services in Callan would be undermined by the dispersal of population.

Selection of Preferred Alternative

The preferred alternative which emerged from the evaluation process was Alternative 1, Continued Consolidation, as this has the fewest potentially negative impacts on the planning policy objectives (PPOs) and Environmental Objectives (EOs).

This scenario contributes towards the protection of the environment and conforms to high level planning objectives.

By applying appropriate mitigation measures - including those which have been integrated into the Plan - potential adverse environmental effects which could arise as a result of implementing this scenario would be likely to be avoided, reduced or offset.

Section 6 of the Environmental Report evaluates the individual strategic aims and objectives which have been prepared to realise the selected scenario.

Appropriate Assessment and Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) was carried out for the Plan; this forms Appendix 1 to the Environmental Report. An Appropriate Assessment has also been carried out for the Plan; this is produced as a separate Natura Impact Report.

The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA.

Section 5 Mitigation and Monitoring Measures

Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Plan. Potential adverse effects have been and will be avoided, reduced or offset through:

- The consideration of alternatives;
- Through communication of environmental considerations and integration of these considerations into the Plan;
- Through the application of a comprehensive risk-based planning approach to flood management in the Strategic Flood Risk Assessment; and
- Adherence to mitigation measures which have been integrated into the Plan either as Objectives in the case of Natura 2000 sites and flood risk management, or Development Management Standards.

Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. The Environmental Report contains proposals for monitoring the Plan which are adopted alongside the Plan. Monitoring enables the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

The Environmental Report identifies indicators which allow quantitative measures of trends and progress in the environment over time. Measurements for indicators generally come from existing monitoring sources.

1.0 Introduction

The preparation of the Draft Callan Local Area Plan (LAP) (2019-2025) is being carried out by Kilkenny County Council. This Plan will cover the area of the district town of Callan. The Planning and Development (Strategic Environmental Assessment) (SEA) Regulations 2004 (as amended) require that an SEA is carried out on any Local Area Plan where the population (or target population) is more than 5,000 persons. The population of Callan was recorded at 2,475, however it was considered appropriate to carry out SEA due the potential for significant environmental effects and the requirement for a Natura Impact Report (NIR).

SEA is the formal, systematic evaluation of the likely significant effects of implementing the plan, before a decision is made. The process includes preparing an Environmental Report where the likely significant effects are identified and evaluated. This report has been prepared in accordance with the SEA Guidelines for Regional and Planning Authorities.

1.1 Report Structure

Information to be included in the Environmental Report is set out in Schedule 2B to the Planning and Development Regulations 2001. The SEA Guidelines for Regional and Planning Authorities also include a recommended layout, which this Report follows for the most part. The table below sets out how the layout of this Report satisfies the requirements of the Regulations.

Table 1-1
Report layout for the requirements of the Regulations

Requirements of SEA Directive	Section of Environmental Report
1. an outline of the contents and main objectives of the plan and relationship with other relevant plans;	Chapter 2: Contents and Description of the Plan
2. the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;	Chapter 3: Current state of the environment
3. the environmental characteristics of areas likely to be significantly affected;	Chapter 3: Current state of the environment
4. any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive;	Chapter 3: Current state of the environment
5. the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation;	Chapter 4: Assessment Framework
6. the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including	Chapter 6: Likely significant effects on the environment

Requirements of SEA Directive	Section of Environmental Report
architectural and archaeological heritage, landscape and the interrelationship between the above factors;	
7. the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;	Chapter 7: Mitigation measures
8. an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Chapter 5: Assessment of Plan Alternatives
9. a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan;	Chapter 8: Development Plan Monitoring
10. a non-technical summary of the information provided under the above headings.	Non-Technical Summary

1.2 Methodology

1.2.1 Screening

Screening was not carried out, as the decision to proceed with a Natura Impact Report with respect to the requirements of the Habitats Directive is considered to be a trigger for requiring an SEA.

1.2.2 Scoping

A scoping letter was prepared in August 2018 in accordance with the SEA Guidelines for Regional and Planning Authorities. The purpose of the scoping letter was to advise statutory consultees that the Callan Local Area Plan 2019-2025 was being prepared and that SEA would be carried out. It also invited submissions or observations in relation to the scope and level of detail of the information to be included in the environmental report. The purpose of the scoping stage is to ensure the identification of relevant environmental issues so they could be addressed appropriately in the Environmental Report. The scoping stage also helps to establish the level of detail necessary for the SEA of the LAP.

1.2.2.1 Consultation

In line with the Planning and Development (SEA) Regulations 2004 as amended, the Environmental and Planning Authorities were given notice on the 7 August 2018 of the intention of Kilkenny County Council to carry out an environmental assessment.

EPA Response

A response was received from the EPA on the 23 August 2014. For land use plans at county and local level, the EPA referred to a 'self-service approach' via the guidance document 'SEA of Land Use Plans – EPA Recommendations and Resources'.

Where the EPA provide specific comments on plans and programmes, the correspondence stated that comments will focus on the EPA's remit and areas of expertise (in particular water, air, climate change, waste, resource efficiency, noise, radon and the inter-relationships between these and other relevant topics e.g. biodiversity), as appropriate and relevant to the particular plan or programme. The response also refers to the following resources:

- EPA State of the Environment Report 2016
    - http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/
- SEA WebGIS Search and Reporting Tool
    - www.edenireland.ie
- River Basin Catchment Management Tool
    - https://wfd.edenireland.ie/

Department of Arts, Heritage and the Gaeltacht Response

A response was received from the Department of Arts, Heritage and the Gaeltacht on the 4 September 2018 in relation to Nature Conservation. The observation is primarily concerned with the issues of biodiversity, fauna and flora. The response refers to the following considerations:

- Links with appropriate assessment;
- Integration of Biodiversity, Flora and Fauna, and associated obligations, into the Plan;
- Implications of the Plan/Programme, or modification thereof, for Biodiversity, Flora and Fauna;
- Scope of the Strategic Environmental Assessment;
- Strategic Environmental Objectives;
- Scope of Environmental Report; and
- Data/information sources.

The comments from both bodies were incorporated within the Environmental Report in accordance with the Regulations.

1.2.3 Public Consultation

Public consultation regarding the Plan took place during June - July 2018. This encompassed a pre-draft submissions period which ran from the 20 June 2018 until the 20 July 2018. As highlighted above, two submissions were received in relation to the SEA, from the EPA, ref. P1, the Dept. of Arts, Heritage and the Gaeltacht, ref. P2 and the relevant extracts are summarised below.

Table 1-2
Summary of Submissions

Submission ref.	Summary	Recommendation
P1	A response was received from the EPA on the 23 August 2014, which included an SEA pack for all Local Authorities to incorporate in carrying out the Environmental Report. For land use plans at county and local level, the EPA referred to a 'self-service approach' via the guidance document 'SEA of Land Use Plans – EPA Recommendations and Resources'. Where the EPA provide specific comments on plans and	These issues will be addressed herein.

Submission ref.	Summary	Recommendation
	programmes, comments will focus on the EPA's remit and areas of expertise (in particular water, air, climate change, waste, resource efficiency, noise, radon and the inter-relationships between these and other relevant topics e.g. biodiversity), as appropriate and relevant to the particular plan or programme.	
P2	A response was received from the Department of Arts, Heritage and the Gaeltacht on the 4 September 2018 in relation to Nature Conservation. The observation is primarily concerned with the issues of biodiversity, fauna and flora. The response refers to the following considerations: • Links with appropriate assessment; • Integration of Biodiversity, Flora and Fauna, and associated obligations, into the Plan; • Implications of the Plan/Programme, or modification thereof, for Biodiversity, Flora and Fauna; • Scope of the Strategic Environmental Assessment; • Strategic Environmental Objectives; • Scope of Environmental Report; and • Data/information sources.	A nature conservation section has been included.

1.2.4 Environmental Baseline Data

The baseline data assists in assessing the current state of the environment, facilitating the identification, evaluation and subsequent monitoring of the effects of the plan. Baseline data was collected based on the various broad environmental topics described in the SEA Directive; i.e. biodiversity, population, human health, fauna, flora, soil, water, air, climate factors, material assets, cultural heritage including architectural and archaeological heritage and landscape.

The Directive requires that information be focused upon relevant aspects of the environmental characteristics of the area likely to be significantly affected by the plan and the likely change, both positive and negative terms where applicable. The baseline data was collated from currently available, relevant data sources, as the SEA Directive does not require major new research to be carried out. Where deficiencies or gaps in the information were identified, this is noted.

The SEA Directive requires that information is provided on any existing environmental problems which are relevant to the plan or programme. Environmental problems arise where there is a conflict between current environmental conditions and ideal targets.

1.2.5 Selection of Strategic Environmental Objectives

The Directive requires that relevant environmental protection objectives (EPOs), established at international, EU or national level are identified and listed. The Guidelines include an indicative list of EPOs, which was followed, and these are set out in Chapter 4. In addition, the Step-by-Step Guide to the SEA process in the Guidelines

recommends that broad planning policy objectives for the area are defined. Both the EPOs and the PPOs were combined to form the Strategic Environmental Objectives, or SEOs, against which the alternatives and plan provisions were assessed.

Table 1-3
SEA Objectives

Ref	Strategic Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
1 BIO	Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development	Loss of habitats and species (CDP)	Biodiversity, flora and fauna	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity Actions for Biodiversity 2011- 2016, Ireland's National Biodiversity Plan (2011)
2 HEA	Improve the health and wellbeing of the population in Callan including relevant environmental health issues re air quality and noise. Protect material assets	Deprivation index No. of complaints re noise Air quality.	Population and Human Health	Our Sustainable Future: A framework for sustainable development for Ireland (2012) Ireland 2040 – The National Planning Framework (2018) Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009) Directive 2002/49/EC of 25 June 2002 relating to the assessment and management of environmental noise Directive 96/62/EC – Air Quality Framework Directive Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC)
3 WAT	Prevent pollution and contamination of groundwater	Faecal Coliform counts per 100ml of groundwater (CDP) New developments granted permission which cannot be adequately served	Water	EU Water Framework Directive (2000/0/EC)

Ref	Strategic Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
		by the current wastewater treatment plant		
4 WAT	Protect and improve river water quality in Callan	Biotic Quality Rating (Q value) (CDP)	Water	EU Water Framework Directive (2000/0/EC)
5 WAT	Protect and improve water supply	Levels of E-Coli present in drinking water Developments granted permission which cannot be adequately service by current water supply	Water and Human Health	EU Water Framework Directive (2000/0/EC)
6 CLI	Adapt and mitigation the effects of climate change, including flood risk	Developments granted permission on flood plain / unauthorised development on floodplain Recorded flooding episodes No. of developments supplied by renewable energy sources % of those travelling to work, school or college using a car	Climatic factors / Material Assets	EU Directive on the assessment and management of flood risks [2007/60/EC], The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) National Adaptation Framework, Planning for a Climate Resilient Ireland, 2018
7 HER	Protect and conserve Callan's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows	Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP) No. of vacant structures on the	Cultural Heritage	

Ref	Strategic Environmental Objective	Indicator	SEA Topic Area	International, European, National policy documents / strategies / guidelines
		RPS		
8 LAN	Protect and enhance valued natural and historic landscapes and features within them.	Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)	Landscape	The European Convention on Landscape, 2000 A National Landscape Strategy for Ireland Strategy Issues paper for consultation (2011)
9 SOIL	Protect and enhance soil	% of development on brownfield land	Soil	A Resource Opportunity, Waste Management Policy in Ireland. Department of the Environment, Community and Local Government July 2012

1.2.6 Consideration of Alternatives

The SEA Directive (at Article 5) recommends that alternative development scenarios for the plan are included for assessment. Alternatives need to be 'realistic and capable of implementation' and should represent a range of different approaches within the statutory and operational requirements of the particular plan. Three alternatives were considered and assessed against the SEOs and one alternative emerged as the preferred plan strategy having satisfied the most SEOs. This is discussed in detail in Chapter 5.

1.2.7 Environmental Assessment of the LAP

The selected alternative forms the basis of the Plan. Detailed objectives were worked up around this Strategy to implement this Plan. This was an iterative process whereby the findings of the SEA were communicated to the plan making team on an ongoing basis in order to be integrated into the Plan.

The development objectives in the Plan were then assessed against the SEOs. The assessment described within this Environmental Report aims to highlight the potential conflicts, if they are present, between the stated development objectives contained in the Plan with the SEOs.

The assessment categorised the potential effects of the Plan on the SEOs as follows:

- Significant beneficial impact
- Beneficial impact
- Adverse effect / uncertain
- Significant adverse impact
- No relationship, insignificant impact or neutral

1.2.8 Changes to the Plan as a result of SEA

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 significant changes for which the SEA is mainly responsible, which are noted here.

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 inclusion of policies, objectives and development management standards made it more cumbersome for the SEA process. This time around, 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 were used as mitigation measures.

Furthermore, specific changes to the text and maps of the LAP were introduced as a result of the SEA process.

1.2.8.1 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been carried out as part of a separate SFRA. The SFRA is included as one of the associated LAP documents.

1.2.9 Mitigation

Following on from the assessment of the detailed development objectives against the SEOs, if there was any uncertain impact identified, mitigation measures were identified to counter any negative effects. These are outlined in Chapter 7. As stated previously, the formulation of the Plan and the preparation of the SEA is an iterative process and therefore, many of the potential negative aspects of the Plan were removed prior to reaching this stage of the process.

1.2.10 Monitoring

Article 10 of the SEA Directive sets out the requirement that monitoring is to be carried out of the significant environmental effects of the implementation of the Plan in order to identify at an early stage any unforeseen adverse effects and to be able to undertake appropriate remedial action. Chapter 8 of this Report outlines the monitoring requirements. Methods of monitoring and indicators of change in the environment have been proposed with set targets to be reviewed over the duration of the Plan.

1.2.11 Technical Difficulties Encountered

The SEA Directive also requires that difficulties in assessment should be acknowledged so that decision-makers, the environmental authorities and the general public are made aware of such difficulties. Difficulties identified during the collection of baseline data and the subsequent assessment of environmental effects includes:

- Gaps in information
- Lack of availability of information

It should be noted that there are gaps in information available at the local level, specifically relating to air quality and greenhouse gas emissions. There is also limited data available for assessing the risk of flooding from sewers, surface water, and overland flow and the capacity and condition of drainage infrastructure.

1.2.12 Report Preparation

This report has been prepared by the SLR Consulting Ireland for the Forward Planning Section of Kilkenny County Council.

2.0 Contents and Description of the Plan

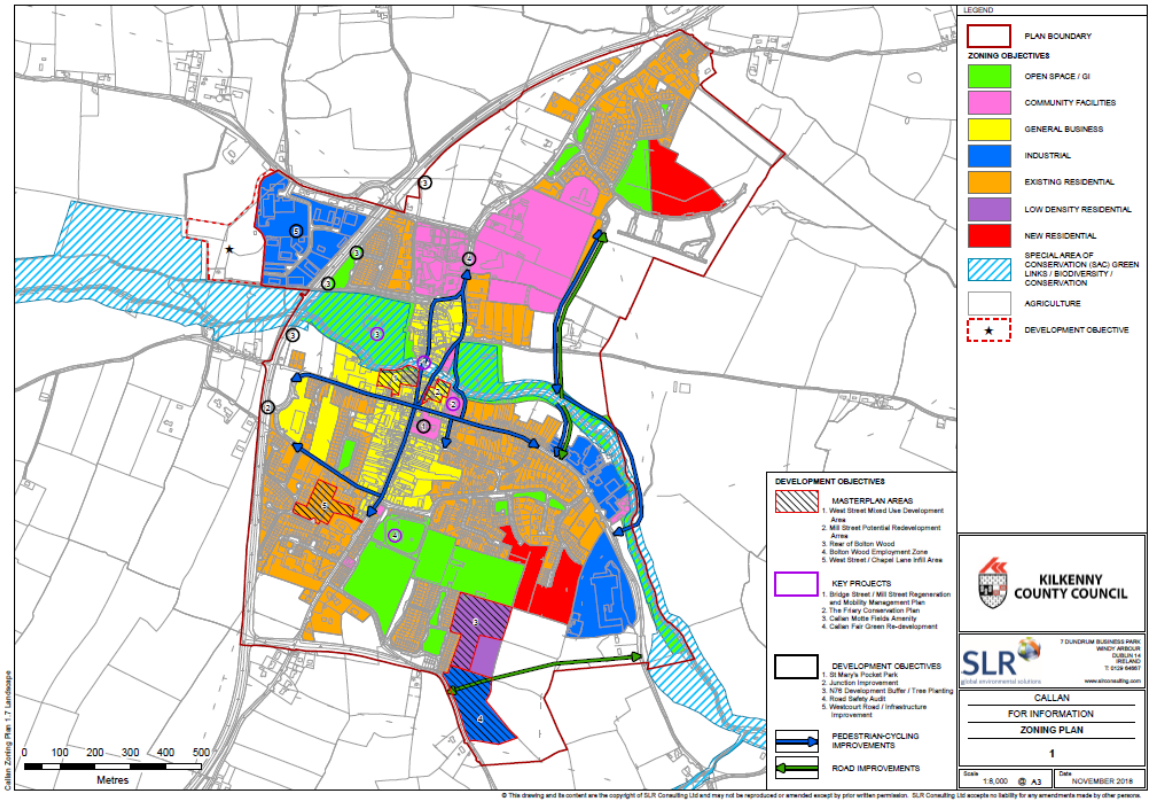
2.1 Contents

Kilkenny County Council is currently preparing Callan Local Area Plan 2019-2025 (hereafter referred to as the Plan) which will replace the existing Local Area Plan for 2009-2020. The area to be included in this Plan is shown by the plan boundary line on Figure 2.1 and encloses 182.75 Hectares.

The Callan Plan provides a written statement of development policy and objectives to manage the development and growth of Callan over a six year plan period. The Plan will replace the existing LAP which was adopted in 2009 and will manage the growth and development of the town for six years from the date of its adoption by the Council, or until the plan is varied or a new plan is made. The Plan has been prepared in accordance with the requirements of the Planning and Development Act 2000 (as amended) to set out an overall strategy for the proper planning and sustainable development of the Callan town.

Local area plans have a key role in translating overarching County development plan policies and objectives at the local level. In doing so the Plan provides a clear vision for Callan, providing for the needs of the existing and future population.

Figure 2.1
Plan Area



The contents are best described through a list of the chapter headings:

1. Introduction And Strategic Context
2. Callan In Context
3. Vision And Strategic Objectives
4. Core Strategy & Zoning

5. Town Centre, Economic Development And Employment
6. Housing And Community
7. Cultural, Built And Natural Heritage
8. Recreation, Tourism And The Arts
9. Infrastructure And Environment
10. Implementation

As the Core Strategy included in Chapter 2 of the Plan outlines, the focus for new residential development will be within and adjoining the existing built up area of Callan. The Plan's zoned land has a total capacity for 98 units. The focus for new industrial/employment development will be in the vicinity of Westcourt and Bolton.

2.2 Objectives

The following Plan vision and objectives have been generated through analysis and reflection of the general and strategic context of the study area. The plan objectives provide the framework for the future development of Callan.

The Draft Callan Local Area Plan includes the following vision for the town in 2025:

> *'By 2025, Callan will be a vibrant low carbon district town approaching a population of 2,800 people supported by a consolidated town centre and employment centred on retail, creative industries, arts, tourism and community service sectors as well as a strong local industrial sector. Enhanced north – south connections for pedestrians and cyclists will be provided. Focusing on Bridge Street, these measures will be combined with a range of traffic management proposals including additional off street parking which will improve vitality of the town centre and Bridge Street in particular as well as supporting healthy living. Historic landmarks and a series of improved public spaces will provide a focus for new activities. A masterplanning approach to design will create high quality sustainable low carbon and adaptable residential areas that are well integrated with existing neighbourhoods. All new development will respect and enhance the character and quality of the existing built and natural environment in Callan."*

2.1.1 Plan Objectives

Strategic Objectives

Strategic Objective 1: It is an objective of Kilkenny County Council to identify the individual vacant sites in the town for regeneration and housing and establish and maintain a register of vacant sites (entitled the vacant sites register) in the plan area for the purpose of the Vacant Site Levy (Urban Regeneration and Housing Act 2015).

Strategic Objective 2: It is an objective of Kilkenny County Council to support the delivery of projects submitted as funding applications to the Rural Regeneration and Development Fund.

Strategic Objective 3: It is an objective of Kilkenny County Council to support the development and implementation of the Town Centre Living – Pilot Project.

Strategic Objective 4: It is an objective of Kilkenny County Council to implement land use zoning objectives for the plan area as set out in Map 01 and Appendix 1 of the Draft Plan.

Core Strategy

To provide for the proportionate growth of Callan maintaining its 2.5% of the County's population allocation to 2026 in accordance with the National Planning Framework and the County Development Plan Settlement Strategy.

Residential Development Objectives

RD1: It is a policy of the Council to ensure that sufficient zoned land is available at appropriate locations in Callan to satisfy the housing needs of the town over the period of the plan.

RD2: To make provision for serviced sites with appropriate infrastructure to enable people build their own homes.

RD3: To implement the Vacant Sites provisions of the Urban Regeneration and Housing Act 2015 as amended.

Residential Development Management Objectives

RD DMO 1: In accordance with policies set out in the National Planning Framework, it is an objective of Kilkenny County Council to encourage the appropriate redevelopment of brownfield and infill sites for residential uses within the LAP boundary subject to compliance with the relevant development management standards as set out in the County Development Plan.

RD DMO 2: To ensure that a good mix of housing types and sizes is provided to meet the future needs of the population of the town.

Employment Objectives

EO1: It is an objective of this Local Area Plan to facilitate an increase in employment locally in tandem with the population growth rate.

EO2: To support the sustainable development of Callan and enhance its capacity to attract new investment in employment, services and public transport for the benefit of the town and its hinterland.

EO3: To promote a diverse and sustainable local economy through the designation of sufficient lands for the promotion of employment related uses including facilities to assist SME growth

EO4: To identify the individual vacant sites in the town for regeneration and housing and establish and maintain a register of vacant sites (entitled the vacant sites register) in the plan area.

EO5: To encourage the continued improvement of road infrastructure at the Westcourt Industrial Estate to a level that is sufficient to allow the taking in charge of roads and associated infrastructure.

EO6: Encourage a diversity of uses in the town centre throughout the day and evening.

Town Centre/ Retail Objectives

TCO1: Vitality and Viability

It is an objective of the County Retail Strategy and the Local Area Plan to ensure that the vitality and viability of district towns is maintained and enhanced. To achieve this, the Plan will support:

- Callan town as the focus of all new retail development in appropriate scale and location;
- development that encourages the appropriate re-use, regeneration of derelict, vacant and underutilised sites and in particular vacancies and underused sites on Green Street, Bridge Street and Mill Street;
- the sensitive redevelopment of a number of historic landmark buildings in the town; and
- the sequential approach and the assessment criteria, outlined in the County Development Plan, which will be applied to any proposals for retail development within Callan.

TCO2: The County Retail Strategy sets out the role and function of Callan within the retail hierarchy providing guidance on the distribution of new floorspace. The Retail Strategy defines Callan as a Tier 1 Level 2 Sub County Town. The distribution of new floorspace should be linked to Callan's role in the retail hierarchy for the county and should be appropriate in scale and character to the hierarchical role of the centre. The type of shopping that is appropriate to this level of the hierarchy includes middle convenience and (tourism related) comparison. For retail proposals above the 500m² gross floorspace threshold a retail impact assessment will be required in accordance with County Retail Strategy.

TCO3: Addressing town centre dereliction and vacancy, on upper bridge street in particular will be supported by the preparation of the Bridge Street/Mill Street Regeneration and Mobility Management Plan.

TCO4: It is an objective of Kilkenny County Council to support the work of the town team and assist with the implementation of the town renewal plan and the town centre living pilot project.

TCO5: It is an objective of Kilkenny County Council to prepare an up-to-date retail strategy during the lifetime of the plan. The strategy will include current figures on footfall, shopping patterns and expenditure capacity.

TCO6: The delivery of projects/recommendations identified within the town centre health check, where these are compatible with the proper planning and sustainable development of the town.

TCO7: To support the delivery of projects submitted under the Rural Regeneration and Development Fund, where details are compatible with the proper planning and sustainable development of the town. Projects include:

- Bridge Street/Mill Street Regeneration and Mobility Management Plan
- The Friary Conservation Plan
- Callan Motte Fields Amenity
- Callan Fair Green Re-development

TCO8: Ensuring accessibility of the retail area by a range of transport modes.

TCO9: Prepare a car parking strategy, focusing on the management of existing on street Car Parking on Green Street and the provision of additional off street car parking in and around the town centre.

TCO10: Create an attractive and safe town centre for pedestrians/cyclists.

TCO11: Provide better pedestrian connections along Chapel Lane, which is the main pedestrian route linking Aldi and Green Street.

Local Food Economy Objectives

LFEO1: It is an objective of Kilkenny County Council to encourage and support

- strong reciprocal relationships between local producers and the local retail/catering enterprises;
- growth of local shops and restaurants, coffee/tea shops both opening and offering local food and beverages; and
- the integration of the 'Callan's' food culture into the tourism offerings of the County as a whole.

LFEO2: It is an objective of Kilkenny County Council to consider the potential of this sector as part of any emerging regeneration strategy for the town centre, particular where this involves the re use of historic landmark structures.

LFE03: It is an objective of Kilkenny County Council to investigate the feasibility of developing a local food hub on Bridge Street.

Health Facilities

HFO1: It is an objective of Kilkenny County Council to support and implement proposals that will benefit public health, particularly where this meets a defined local need and does not involve displacement of existing services.

Housing and Community Objectives

HC1: It is an objective of this LAP to consolidate residential development within the town boundary, linking delivery of new development to the provision of required services and where appropriate applying the sequential approach to the development of housing land.

HC2: Proposals for residential development should have regard to the Guidelines on Sustainable Residential Development in Urban Areas, and in particular, the objective of limiting the size of individual proposals to 10% - 15% of the existing housing stock. In Callan, the existing housing stock is approximately 1,032 units, which provides a basis for an indicative maximum range of 103 – 155 units, for development proposals.

HC3: Housing on Lands Zoned for Agriculture

Land within the agricultural zone will not be considered for intensive commercial or residential development during the lifetime of this LAP. This is to allow for the strategic expansion of the plan area, and to prevent urban generated development which would interfere with the operation of farming and prejudice the future planning and development of the area. On lands zoned for agriculture, within the development boundary of the Callan LAP, housing will be restricted (for their own housing need) to the following categories of persons:

- Persons whose primary employment is in agriculture, horticulture, forestry or bloodstock, or other rural based activity, in the area which they wish to build;
- Sons and daughters of the landowner, all of whom are long standing residents of the "Agricultural" zoned rural area, providing for their first home; and
- Persons who are long standing residents in the "Agricultural" zoned area, providing for their first home.

HC4: The Local Area Plan will ensure that sites are reserved for community facilities as appropriate and to seek to remedy the deficiency in existing developed areas. Where possible, the provision of community facilities will be linked to the increases in the residential population.

HC5: It is an objective of Kilkenny County Council to facilitate the amalgamation of secondary schools St. Brigid's College and Colaiste Eamonn Ris.

HC6: It is an objective of this Local Area Plan to support the provision of a centrally located library space alongside the emergent creative hub of Callan within the landmark building of the Friary Complex.

HC7: It is an objective of the Plan to promote the sustainable development of vacant residential and regeneration sites in Callan through the application of the Urban Regeneration and Housing Act 2015, Vacant Site Levy, on lands zoned 'General Business' and 'Residential'.

HC8: It is an objective of the Plan to support the actions set out in Kilkenny Age Friendly County Strategy 2017 – 2022 where practicable.

HC9: It is an objective of the Plan to allow for the development of 10 community housing units at Westcourt. See also HC-SDO 1 below.

Housing and Community Development Management Objectives

HCDMO 1: To promote Universal Design and Lifetime Housing in accordance with best practice and the policies and principles contained in Building for Everyone: A Universal Approach and Sustainable Residential Development in Urban Areas and its associated document Urban Design Manual: A Best Practice Guide.

HCDMO2: In terms of design and layout, new residential developments of over 3-4 units should submit design statements in conjunction with applications for permission, explaining the principles and concept behind the design, demonstrating how the proposal relates to the wider context and meets urban design objectives and principles.

HCDMO 3: To facilitate the development of housing for older people in order to improve the quality of living for our ageing population. Any new residential development should focus on complying with the Universal Design approach, so as to facilitate older persons' living.

Built Heritage Development –Objectives

BNH1: To encourage and apply flexibility in order to secure the appropriate reuse, renovation and rehabilitation of a Protected Structure.

BNH2: To protect and enhance the historic landscape and character of Callan.

BNH3: To make additions to the Record of Protected Structures, as appropriate, using the provisions of Part IV of the Planning and Development Act 2000 as amended..

BNH 4: Kilkenny County Council considers that the historic core of Callan town comprises an area of special architectural, archaeological, historic interest, presents an attractive townscape and is worthy of protection. It is therefore proposed to continue to designate the area indicated in Figure 4, as an Architectural Conservation Area.

BNH5: It is the policy of the Council to support the protection of archaeological heritage through preservation in situ of, or preservation by record of recorded monuments and any other archaeological features in Callan.

BNH5: It is an objective of Kilkenny County Council to support the National Policy on Town Defences which sets out national policy for the protection, preservation and conservation of the defences of towns and cities.

Built Heritage Development – Development Management Objectives

BHDM1: It is an objective of Kilkenny County Council to require an architectural heritage assessment/architectural impact assessment report to be submitted with all applications related to Protected Structures. This should be prepared in accordance with Appendix B of the "Architectural Heritage Protection, Guidelines for Planning Authorities".

BHDM2: It is an objective of Kilkenny County Council to encourage the retention and restoration of existing buildings and streetscape in a manner which respects its special character and improves that character with appropriate new developments when opportunities arise.

BHDM 3: It is an objective of Kilkenny County Council to require an assessment of the archaeological implications of all development proposals within the zone of archaeological potential.

BHDM 4: To support the sensitive restoration of protected structures and their attendant grounds and operate flexibly as regards facilitating the ongoing use of these buildings subject to good conservation principles.

BHDM 5: To protect and preserve items of both architectural and archaeological heritage from inappropriate development that would adversely affect and/or detract from the interpretation and setting of these sites. These include recorded monuments, structures contained in the Record of Protected Structures, the National Inventory of Architectural Heritage and structures within the Architectural Conservation Area.

BHDM 6: Require consultation with the Council's Heritage and Conservation Officers to ensure the protection of archaeological heritage of the town and the associated historic landscape. This includes terrestrial archaeology and underwater archaeology for in river works.

BHDM 7: The recognition of embodied energy found within the historic buildings within the town, as an energy saving source.

Natural Heritage and Biodiversity – Objectives

NHB1: In seeking to protect and enhance the natural environment, Kilkenny County Council will seek to:

- Protect natural heritage sites designated in National and European legislation, specifically the River Barrow and Rivers Nore SAC (See also NH2);
- Provide for an appropriate riverside buffer of circa 20m that protects the integrity of the SAC and assists in the management of flood risk;
- Protect and conserve non-designated habitats and species;
- Protect and incorporate existing biodiversity features such as trees, hedgerows and surface water features into the design and construction of new development and public realm and enhancing the biodiversity value of existing open spaces; and
- Where development proposals are made along the riparian corridor, ensure that a condition of consent is to establish a vegetated strip along the river in consultation with the National Parks and Wildlife Service.

NHB2: It is an objective of Kilkenny County Council to protect and incorporate existing biodiversity features such as hedgerows and surface water features into the design and construction of new development and public realm. Where the loss of the existing features is unavoidable new biodiversity features should incorporate native species, and species of local provenance to replace the existing hedgerow.

NHB3: It is an objective of Kilkenny County Council to retain the character the Motte Field and Abbey Meadow as high value locally important areas for nature conservation and to enhance biodiversity value within these areas where possible.

NHB4: It is an objective of Kilkenny County Council to ensure best practice is followed as regards tree retention and replacement.

NHB5: It is an objective of Kilkenny County Council to support the implementation of the Callan River Project under the Town and Village Renewal Scheme. The project will consist of the removal of sediment deposits and associated vegetation that has developed within the river channel in recent years.

Natural Heritage and Biodiversity - Development Management Standards

NHB - DM1: The King's River which forms part of the River Barrow and River Nore SAC has considerable potential for to be used as a recreational asset for the town and the Local Area Plan will seek to promote the natural amenity potential of this site subject to:

- Protection of this site in accordance with National and European legislation ensuring that any development in or near the SAC will avoid any significant adverse impact on the features for which the site has been designated;
- Consultation with the prescribed bodies and relevant government agencies when assessing developments which are likely to impact on designated natural heritage sites or those sites proposed to be designated; and
- The requirement for an appropriate assessment in respect of any proposed development likely to have an impact on a designated natural heritage site, or those sites proposed to be designated.

NHB – DM2: New development should ensure, including where necessary through appropriate developer contributions, the efficient and effective use of environmental resources by:

- Having regard to sustainable energy considerations set out in Department Guidelines on Quality Housing for Sustainable Communities (2007) and Chapter 10 of the County Development Plan; and
- Through the use of sustainable drainage methods.

NHB – DM3: It is an objective of Kilkenny County Council to require all new development to be designed in such a way as to maximise energy efficiency. All new development must consider the potential for decentralised energy systems and renewable or low/zero carbon energy. Planning applications should be accompanied by a 'low and zero carbon energy statement' outlining approach to energy efficiency and the use of low and zero carbon technologies.

NHB – DM4: To support and facilitate the development of pedestrian/cycle routes along suitable routes subject to relevant environmental assessments.

NHB – DM5: To support the development of outdoor leisure activities on lands designated as open space, subject to the protection of landscape character and natural heritage.

NHB – DM6: Require the incorporation of natural features where appropriate and to protect existing trees and hedgerows which are of amenity or biodiversity value and/or contribute to landscape character, and to ensure that proper provision is made for their protection and management or replacement, when undertaking, approving or authorising development.

NHB – DM7: To ensure that when approving or authorising development that sufficient information is provided to enable an assessment of impacts on woodlands, trees and hedgerows.

NHB – DM8: All lighting within the Plan area will be required to be directional lighting designed specifically to minimise impact in relation to biodiversity.

Green Infrastructure

GI1: It is an objective of Kilkenny County Council to develop a Green Infrastructure Strategy for the town, linked to its urban regeneration.

Open Space Objectives

OS1: It is an objective of Kilkenny County Council to improve the quality of these strategic open spaces through improved linkages and support for active uses surrounding these sites.

Open Space– Development Management Objectives

OSDM1: According to quantitative standards, sufficient quantity of open space is currently in place. A qualitative assessment is now required to understand the scope for improvements with respect to each green space both in terms of its usability together with its value for biodiversity.

OSDM2: In terms of future enhancement, together with the improvements identified as part of the qualitative open space assessment, it is an objective of Killkenny County Council to:

- Protect and enhance the strategic role of areas likely to flood, through the identification of a flood risk buffer and linear park, where appropriate, alongside the Kings River and elsewhere where surface water features are present;
- Protect and enhance these areas in terms of their biodiversity value particularly in areas close to River Barrow and River Nore SAC;
- Improve access to and management of public spaces and pockets parks in the town centre;
- Achieve design principles set out in the County Development Plan and specifically designing for active frontages and natural surveillance; and
- Improve management of these space though natural means, avoiding the use of the herbicide glyphosate

Open Space - Special Development Objectives

SDO- OS1: To implement the Fair Green Regeneration Scheme in line with a recently approved part 8 application.

SDO- OS2: To develop the Motte Field as part of the Green infrastructure Strategy for the town with all stakeholders.

SDO- OS3: To allow for a potential public space/pocket park at St. Mary's Church and graveyard through development of a joint proposal by key stakeholders that takes into account built heritage constraints and management requirements.

Play Space – Development Management Objectives

PSDM1: New residential development is required to be consistent with standards set out in the County Development Plan where playable space is to be provided as an integral part of each new development. This playable space can form part of the overall open space provision of a development but must be dedicated to play and must be accessible in accordance with the standards in the County Development Plan.

Sports Facility - Objective

SF1: It is an objective of Kilkenny County Council to support/advance the provision of a district level indoor sports facility in Callan.

SF2: It is an objective of Kilkenny County Council to support the development of facilities at John Lockes GAA.

SF3: It is an objective of Kilkenny County Council to retain sports and recreational facilities in the town for the benefit of the town inhabitants and the wider catchment area.

Tourism Objectives

TO1: It is an objective of Kilkenny County Council to carry out an asset mapping exercise for Callan.

TO2: It is an objective of Kilkenny County Council in conjunction with the Town Team to prepare a marketing and communications strategy aimed at increasing visitor numbers.

TO3: To facilitate tourism activities such as eco-tourism, niche retailing, food markets, local and other craft type activities so as to diversify the tourism product in Callan, subject to relevant environmental assessments.

TO4: To support the development of standardised signage and interpretation for tourism facilities and tourist attractions throughout Callan.

TO5: To support the development of linkages between historical sites within and around Callan.

Tourism – Development Management Objectives

TDMO1: All new tourism development should be designed to ensure that assets and features are universally accessible with a view to promoting inclusive tourism.

Arts, Culture & the Creative Economy Objectives

ACCE1: It is an objective of Kilkenny County Council to support festivals and cultural events across the County.

ACCE2: It is an objective of Kilkenny County Council to enhance the role of venues within district towns to facilitate satellite events associated with some of the County's signature festivals.

ACCE3: It is an objective of Kilkenny County Council to support the Friary Conservation Plan and the development of the Friary Complex as a cultural and creative hub with a modern library service at its centre.

ACCE4: It is an objective of Kilkenny County Council to investigate the feasibility of providing additional cultural facilities in Callan.

Infrastructure – Development Objectives

IN1: Kilkenny County Council will support the completion of an Irish Water survey over the next 2-3 years to assess the constraints on the waste water network in Callan. This will include an assessment of existing overflows, (one of which is located at the Clodeen pump station).

IN2: To ensure that any significant additional development in Callan is only allowed once the necessary water and wastewater capacity is in place.

IN3: It is an objective of Kilkenny County Council to align future development with capacity at the Callan Waste Water Treatment Plant to ensure that improvements are sufficient to meet standards required to avoid significant adverse effects on the River Nore and River Barrow SAC.

IN4: In conjunction with Irish Water, the Council will endeavour to maintain an adequate water supply sufficient for the development needs of the Plan.

IN5: To support optimal utilisation of existing pumping stations and limit the number of additional / future pumping stations to a minimum.

Flooding

FDM1: To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the Planning System and Flood Risk Management – Guidelines for Planning Authorities, the avoidance of development in areas where flood risk has been identified shall be the primary response.

FDM2: In areas at risk from flooding, (particularly at riverside locations) a precautionary approach will apply and the methodology set out in the Planning Guidelines 'The Planning System and Flood Risk Management' will be applied to development proposals.

FDM3: Where flood risk may be an issue for any proposed development, including pluvial flood risk, a flood risk assessment shall be carried out that is appropriate to the scale and nature of the development and the risks arising. This shall be undertaken in accordance with the Flood Risk Assessment Guidelines. Proposals for mitigation and management of flood risk will only be considered where avoidance is not possible and where development can be clearly justified with the Guidelines' Justification Test.

FDM4: The Council will support the introduction of attenuation measures that would reduce levels of surface water discharge into the main water course, thereby reducing the risk of flooding and supporting improvements to the quality of water. To do this, the Council will encourage surface water management for all green-field developments, whereby surface water run-off will be limited to pre-development levels.

Energy objectives

EO1: It is an objective of Kilkenny County Council to require all new development to designed in such a way as to maximise energy efficiency.

EO2: It is an objective of Kilkenny County Council to require all development to consider the potential for decentralised energy systems and for renewable energy to be integrated into the design of new development. Proposals should be accompanied by a 'low and zero carbon energy statement' outlining proposals for energy efficiency as well as the use low and zero carbon technologies.

Transport Objectives

TSDO1: It is an objective of Kilkenny County Council to carry out a Bridge Street / Mill Street Regeneration and Mobility Management Plan.

TSDO2: Safety improvements on the National Road at the junction of the N76 and R699 are required to address general safety issues and sight lines in particular.

TSDO3: Improve Pedestrian crossing facilities on the N76 at the R695 and L1020 junctions.

TSDO4: to implement the Fair Green Regeneration Scheme in line with a recently approved part 8 application.

TSDO5: It is an objective of Kilkenny County Council to carry out a car parking strategy for the town centre as part of the mobility management plan that identifies an improved and managed approach to parking on Green Street and provide more opportunities for off street parking elsewhere in the town.

TSDO6: It is an objective of Kilkenny County Council to support the provision of pedestrian / cycle access, through provision of bridge infrastructure in order to enhance connectivity between the town and the Motte Field.

TSDO7: It is an objective of Kilkenny County Council to provide a walking and cycling route from Clodeen Lane to the car park at Mill lane / friary meadow through provision of bridge infrastructure.

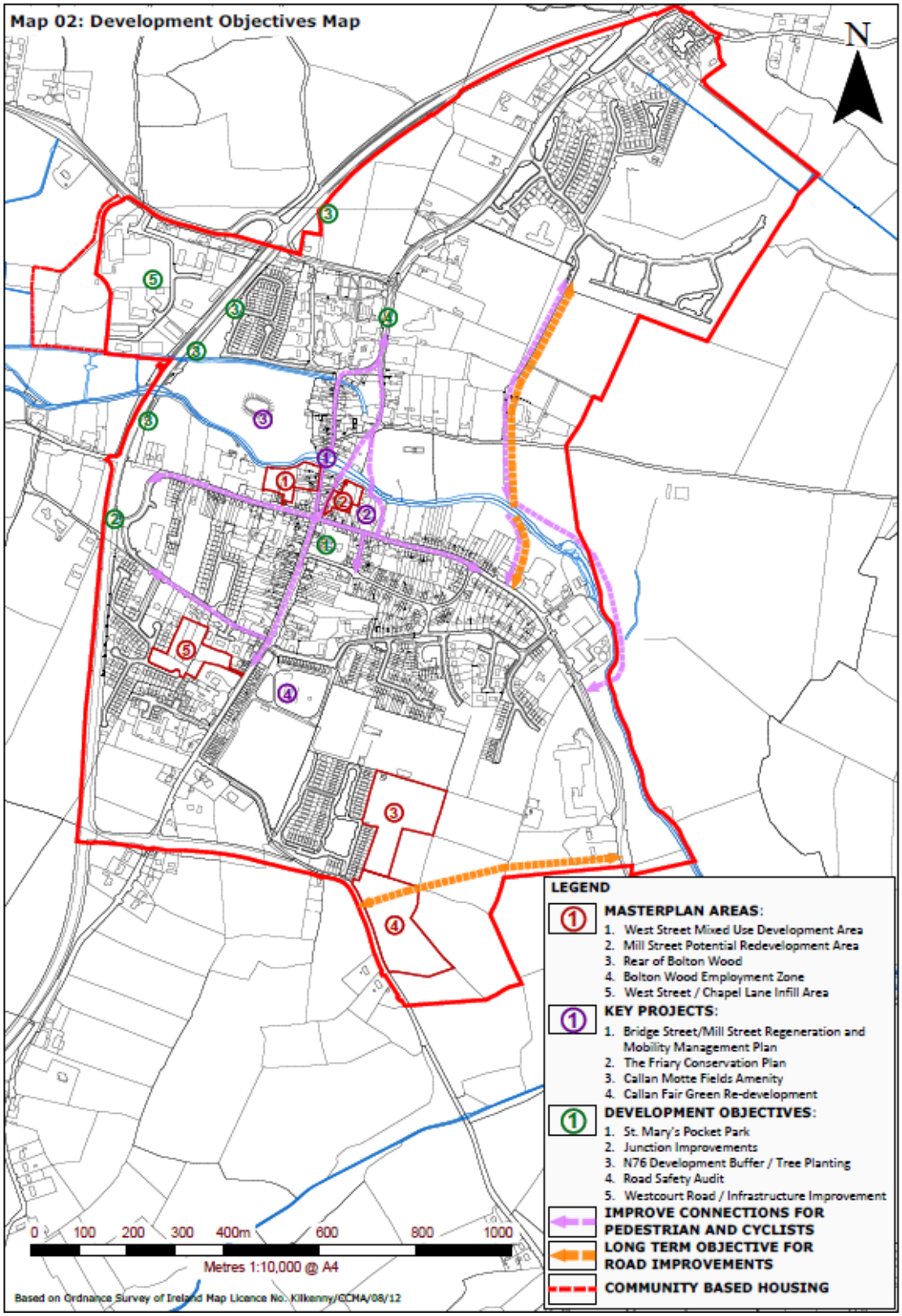
TSDO8: it is a long term objective to make a road connection between the Windgap road and Mill Street .

TSDO9: it is a long term objective to improve road connections between north and south Callan over the King's River.

Development Management Objectives

DMO1: It is an objective of Kilkenny County Council to implement land use zoning objectives for the plan area asset out in Appendix 1.

Figure 2.2 Development Objectives Map

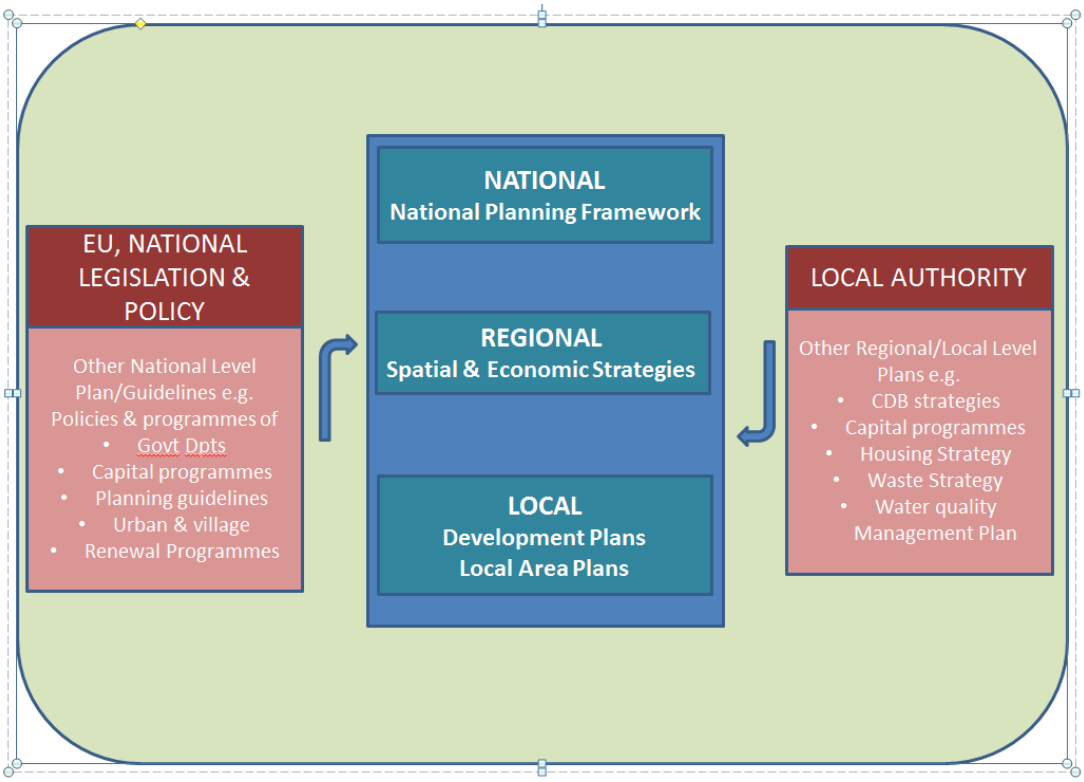


2.3 Relationship with other relevant plans and programmes

The Local Area Plan is being prepared under the provisions of the Planning and Development Act 2000 as amended and will form part of the statutory planning framework. The LAP is situated at the lowest level of the planning hierarchy and does not influence subsequent plans, with the exception of non-statutory masterplanning exercises that may be required during the plan period. The hierarchy of land-use plans, central to plan making process, means that certain strategic issues in the Plan may already have been determined at national, regional and county level. It is therefore appropriate for the level of detail to vary according to the scale of the plan and the position of Local Area Plans within the hierarchy means that a greater level of detail is normally required.

Once adopted, the Callan Local Area Plan 2019-2025 will set out the objectives and policies of Kilkenny County Council with respect to Callan. The Draft LAP is required to be consistent with the objectives of the County Development Plan.

Figure 2.3
Links with other plans in the hierarchy



2.1.2 International

Agenda 21 (1992)

Agenda 21 was accepted by more than 178 governments in 1992. Progress toward achieving Agenda 21 goals is occurring, but has been slower than anticipated (UN, 2002a). Efforts to integrate environment and development into a common sustainable development framework remain in the early stages (UN, 2002a).

Three major trends characterize progress on Agenda 21 implementation over the last 10 years. First, the concept of sustainable development prompted a shift from focusing on single issues toward appreciating complex interactions between a wide range of environmental and developmental factors. This shift is part of what has been called "the transition to sustainability" (NRC, 1999). Second, there is a movement from international top-down norm-setting to

national institution-building and more "grassroots" approaches at the local government level. Third, Agenda 21 demands place-based scientific and technical knowledge, which has resulted in increasing involvement of research-based institutions such as universities and private enterprises (Juma, 2002).

At the present time at least 85 countries have developed national strategies for implementing Agenda 21 (UN, 2002a). Some common strategies include the development of the following:

- thematic policies that articulate broad sustainable development objectives;
- traditional master plans based on national planning cycles;
- mechanisms for coordination with donors; and
- strategies to address international obligations to integrate environmental considerations into thematic activities.

In a number of developing countries sustainable development principles have been introduced in existing national frameworks, such as conservation strategies, environmental plans, national vision statements, and national Agenda 21 initiatives (UN, 2002a).

Kyoto Protocol (1997)

The first commitment period ran between 2008 -2012. Since then the "Doha Agreement" was adopted on 8 December 2012 with amendments including the following:

- New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020;
- A revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period; and
- Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

During the first commitment period, 37 industrialized countries and the European Community committed to reduce GHG emissions to an average of five percent against 1990 levels. During the second commitment period, Parties committed to reduce GHG emissions by at least 18% below 1990 levels in the eight-year period from 2013 to 2020; however, the composition of Parties in the second commitment period is different from the first.

Under the Protocol, countries must meet their targets primarily through national measures. However, the Protocol also offers them an additional means to meet their targets by way of three market-based mechanisms.

The Kyoto mechanisms are:

- International Emissions Trading
- Clean Development Mechanism (CDM)
- Joint implementation (JI)

UN Convention on Biological Diversity (1992) was ratified in Ireland in 1996 and resulted in the preparation of the National Biodiversity Plan to reflect its requirements.

The fifteenth meeting of the Conference of the Parties in 2020 is expected to update the Convention's strategic plan. This would be done in the context of the 2050 Vision of the current Strategic Plan for Biodiversity 2011-2020 as well the 2030 Agenda for Sustainable Development and other relevant international processes, and in the light of an assessment of progress in achieving the goals and Aichi Biodiversity Targets of the current plan as well as of future scenarios of change.

Like the current Strategic Plan for Biodiversity 2011-2020, the post-2020 global biodiversity framework is expected to provide a framework or "New Deal for Nature" for the entire international community to address the challenge of biodiversity and ecosystems loss and to ensure that the solutions and benefits nature provides are integrated in systemic, inclusive, and transformative actions to benefit human well-being, the economy, and the planet. With the adoption of the 2030 Agenda for Sustainable Development and Sustainable Development Goals, and decisions of the Conference of the Parties, the Convention has recognized that leading to 2020 and beyond requires urgent transformational change in the approaches taken to safeguard, restore, and invest in biodiversity. This urgency includes changes in behaviour at the levels of producers and consumers, governments and businesses; a deeper understanding, based on scientific evidence, of the factors, motivations and levers that can facilitate such transformational change; and innovation in the means of implementation.

As part of the participatory roadmap for the post-2020 global biodiversity framework, the Secretariat of the Convention has convened a series of dialogues to kick-start a transformational process that will contribute to a bold post-2020 global biodiversity framework. The dialogues aim to bring together experts from a variety of disciplines, and have had a focus on systems-thinking and systems transition, to deliver thoughtful and innovative input into efforts to advance implementation of the Biodiversity Convention and the design of the post-2020 global biodiversity framework. They also aim to identify the system-level transformations necessary to achieve a bold shared vision and to affect impactful change at all levels.

2.1.3 European

Europe 2020 Strategy (2010) is a 10-year strategy proposed by the European Commission for advancement of the economy of the European Union. It aims at "smart, sustainable, inclusive growth" with greater coordination of national and European policy. It sets five key targets for the EU over the period to 2020:

- Employment - 75% of 20-64 year olds to be employed;
- Research and Development (R&D)/Innovation
  - 3% of the EU's GDP to be invested in R&D/Innovation;
- Climate change/energy
  - GHG emissions 20% (or even 30%, if the conditions are right) lower than 1990
  - 20% of energy from renewables
  - 20% increase in energy efficiency
- Education
  - reducing school drop-out rates below 10%
  - at least 40% of 30-34–year-olds completing third-level education
- Poverty / social exclusion
  - at least 20 million fewer people in or at risk of poverty and social exclusion

EU Habitats Directive (92/43/EEC) transposed into Irish law by the EU (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997). The Directive lists certain habitats and species that must be given protection in Special Areas of Conservation (SACs). Irish habitats include raised bogs, active blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets.

EU Birds Directive (79/409/EEC) transposed into Irish law through the EU (Natural Habitats) Regulations 1997 (S.I. No. 94 of 1997), requires the designation of Special Protection Areas (SPAs) for: (a) listed rare and vulnerable species (b) regularly occurring migratory species (such as ducks and geese) (c) wetlands, especially those of international importance, which attract large numbers of migratory birds each year.

SACs and SPAs collectively form part of "Natura 2000," a network of protected areas throughout the EU.

EU Water Framework Directive (2000/60/EC) aims to prevent any deterioration in the status of any waters and to achieve at least "good status" in all waters by 2015. The Directive as transposed into Irish law requires the production of River Basin Management Plans, including environmental objectives and a programme of measures to meet those objectives, with respect to each River Basin District.

EU Urban Waste Water Treatment Directive (91/271/EEC) sets target dates for the provision of specified levels of waste water collection and treatment facilities to specified sizes of agglomeration.

EU Nitrates Directive (91/676/EEC) requires an action programme with binding measures to protect waters against pollution by nitrates.

European Convention on the Protection of the Archaeological Heritage (1992) establishes standards for the protection of the archaeological heritage. The Convention, which was ratified by Ireland in 1997, requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.

Granada Convention for the protection of the Architectural Heritage of Europe (1985): was ratified by Ireland in 1997, established common principles and obligations regarding identification of properties and the implementation of statutory protection procedures (such as those in Part IV of the 2000 Planning Act).

European Landscape Convention (2000) ratified by Ireland in 2002, encourages public authorities to adopt policies at local, national and international level to protect and manage landscapes throughout Europe.

Directive 2007/60/EC on the assessment and management of flood risks requires the management and reduction of the risk of floods, particularly along rivers and in coastal areas. It provides for assessment of the risk of flooding in river basins, the mapping of flood risks in all regions where there is a serious risk of flooding and the drawing up of flood risk management plans based on close cooperation between and the broad participation of Member States.

The Directive aims to establish a common framework for assessing and reducing the risk that floods within the European Union pose to human health, the environment, property and economic activity. The proposed prevention and management measures are organised by river basin districts (which may cover several river basins), as established by the Water Framework Directive. The measures include the preliminary assessment of risks and the establishment of maps of areas at risk and flood management plans.

Member States are required to carry a preliminary assessment of risks for each river basin district or part of a district located in their territory by 22 December 2011 at the latest. This includes gathering information on the boundaries of river basins in the district concerned, floods that have occurred in the past, the likelihood of future floods and the estimated consequences.

Member States must draw up maps identifying all areas posing a risk of flooding and indicating the probability (high, medium or low) of flooding for each of those areas and the potential damage for local populations, property and the environment by 2013. Flood risk management plans will be prepared for each river basin district by 2015 and will focus on reducing the probability of flooding and the potential consequences of flooding.

2.1.4 National

Ireland 2040 – The National Planning Framework (2018) is the Government's high-level strategic plan for shaping the future growth and development of Ireland to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for our people, and to protect and enhance the environment.

Project Ireland 2040 National Development Plan 2018-2027; The National Planning Framework is published together with a 10-year national investment plan as one vision – Project Ireland 2040. This means that the NPF is fully supported by the Government's investment strategy for public capital investment and investment by the State sector in general. As part of this investment, a dedicated €3 Billion Regeneration and Development Fund will be put in place to drive and support the aims of the National Planning Framework, for both urban and rural areas.

Our Sustainable Future, A Framework for Sustainable Development for Ireland, 2012 Department of Environment, Community and Local Government acknowledges the progress made, seeks to identify areas where further effort is required and puts forward practical measures aimed at achieving added value in the key sectors. It also sets out proposals for the effective implementation of the Our Sustainable Future and a framework for developing new performance indicators which will be critical in measuring progress on sustainable development and identifying outstanding weaknesses across the various sectors.

Table 2-1
Our Sustainable Future framework

Themes	Principles
Economy	Promote an innovative, competitive and low-carbon economy with the aim of achieving smart, sustainable and inclusive growth.
Satisfaction of human needs by the efficient use of resources	Prices should reflect the real costs to society of production and consumption activities and polluters should pay for the damage they cause to human health and the environment.
Equity between generations	The needs of current generations should be addressed without compromising the ability of future generations to meet their needs. Resources should be used within the capacity for regeneration.
Gender equity	Women have a vital role in environmental management and development and their full participation is therefore essential to advance sustainable development.
Respect for ecological integrity and biodiversity	The abundance of wildlife and extent of habitats should be maintained, improved and restored where necessary, through sustainable management.
Social equity	Social inclusion should be promoted to ensure an improved quality of life for all.
Respect for cultural heritage /diversity	The quality of landscapes, the heritage of the man-made environment and historic and cultural resources should be maintained and improved.
Equity between countries and regions	Promote fundamental rights, by combating all forms of discrimination and contributing to the reduction of poverty. Promote coherence between local, regional, national, EU and global actions in order to increase their contribution to sustainable development.
Good decision making	Guarantee citizens' rights of access to information and public participation procedures. Ensure access to review

Themes	Principles
	mechanisms. Develop adequate consultation with stakeholders, including citizens', businesses and social partners, and participatory channels for all interested parties.

The Environmental Protection Agency Strategic Plan 2016 to 2020 sets out how to protect and improve the environment over the next 5 years. It lists key environmental challenges that will be targeted for improvement, along with a range of other strategic goals and objectives. Objectives include:

- tackle the challenges to deliver improved water quality in Ireland;
- engage with other strategic partners to promote the development of a holistic national response to climate change;
- enhance the air and radiation protection framework in Ireland;
- engage the public in the protection and improvement of the environment; and
- promote a greater awareness of the impact of environment quality on human health.

Ireland's Environment: An Assessment 2016 (EPA)

Environment and Health and Wellbeing: The state of the environment can influence our health in positive terms (e.g. amenity) but also in negative terms, because of the risks to health posed by pollution.

It is now accepted that even low levels of air pollution, notably from particulates (soot and dust), can have negative health impacts. Ireland remains fortunate to have better air quality than most countries in Europe, but some key challenges remain. Traffic is a key pressure on air quality and is the main cause of air quality problems in our larger towns and cities. Key Messages for Ireland in 2016 are also listed in Figure 2.4.

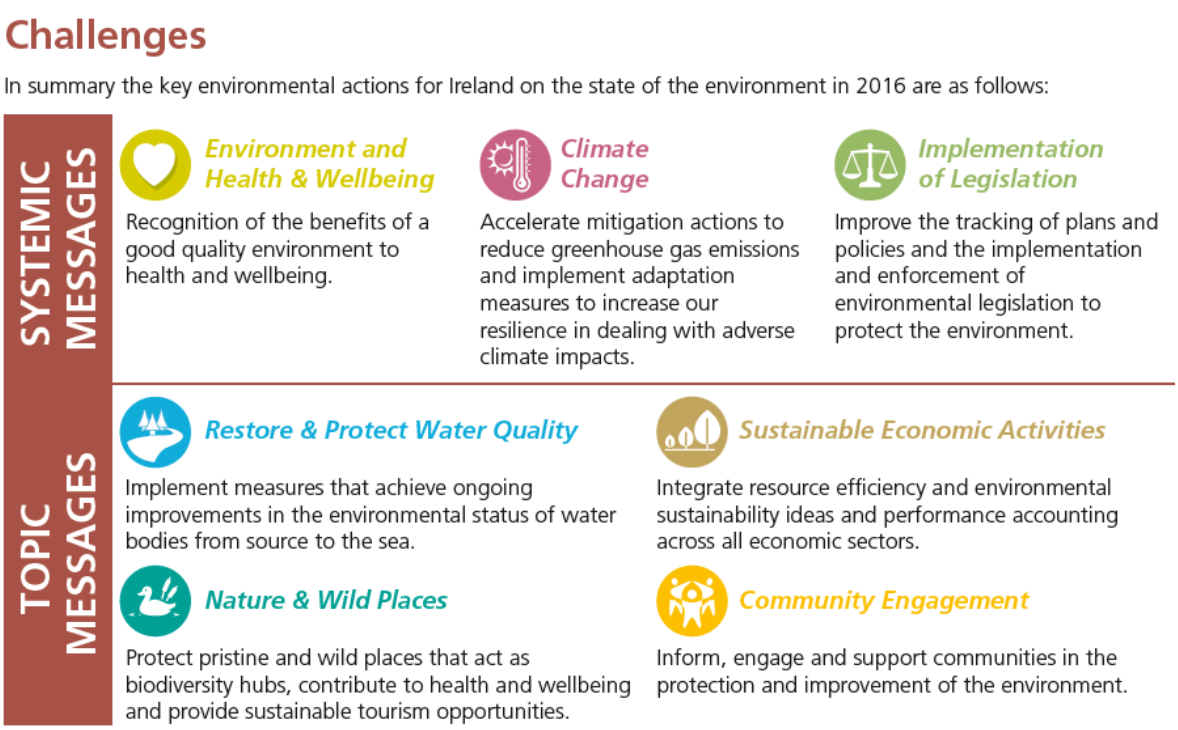


Figure 2.4 Key environmental actions for Ireland in 2016

National Biodiversity Action Plan 2017-2021: Ireland's National Biodiversity Plan which will co-ordinate measures to underpin progress towards meeting national, EU and global 2020 biodiversity targets.

Table 2-2
Objectives of the National Biodiversity Action Plan 2017-2021

Objectives of the National Biodiversity Action Plan 2017-2021	Target
1. Mainstream biodiversity into decision-making across all sectors	Target 1.1. Shared responsibility for the conservation of biodiversity and the sustainable use of its components is fully recognised, and acted upon, by all sectors Target 1.2. Strengthened legislation in support of tackling biodiversity loss in Ireland
2. Strengthen the knowledge base for conservation, management and sustainable use of biodiversity	Target 2.1. Knowledge of biodiversity and ecosystem services has substantially advanced our ability to ensure conservation, effective management, and sustainable use by 2021
3. Increase awareness and appreciation of biodiversity and ecosystems services	Target 3.1 Enhanced appreciation of the value of biodiversity and ecosystem services amongst policy makers, businesses, stakeholders, local communities, and the general public
4. Conserve and restore biodiversity and ecosystem	Target 4.1. Optimised opportunities under agriculture and rural development, forestry and other relevant

Objectives of the National Biodiversity Action Plan 2017-2021	Target
services in the wider countryside	policies to benefit biodiversity Target 4.2. Principal pollutant pressures on terrestrial and freshwater biodiversity substantially reduced by 2020 Target 4.3. Optimised benefits for biodiversity in Flood Risk Management Planning and drainage schemes Target 4.4. Harmful invasive alien species are controlled and there is reduced risk of introduction and/or spread of new species Target 4.5. Improved enforcement of wildlife law
5. Conserve and restore biodiversity and ecosystem services in the marine environment	Target 5.1. Progress made towards good ecological and environmental status of marine waters over the lifetime of this Plan Target 5.2. Fish stock levels maintained or restored to levels that can produce maximum sustainable yield, where possible, no later than 2020
6. Expand and improve management of protected areas and species	Target 6.1. Natura 2000 network designated and under effective conservation management by 2020 Target 6.2. Sufficiency, coherence, connectivity, and resilience of the protected areas network substantially enhanced by 2020 Target 6.3. No protected species in worsening status by 2020; majority of species in, or moving towards, favourable status by 2021
7. Strengthen international governance for biodiversity and ecosystem services	Target 7.1. Strengthened support for biodiversity and ecosystem services in external assistance. Target 7.2. Enhanced 6. contribution to international governance for biodiversity and ecosystem services Target 7.3. Enhanced cooperation with Northern Ireland on common issues Target 7.4. Reduction in the impact of Irish trade on global biodiversity and ecosystem services

National Climate Change Strategy

Ireland has also agreed to reduce national greenhouse gas emissions by 20% compared to 2005 emissions levels, by 2020, as part of a the EU Climate and Energy Package for the post-Kyoto period 2013-2020. In order to illustrate their willingness to their association with the Copenhagen Accord, the EU reiterated the conditional offer to increase the overall EU 2020 emission reduction target from 20% to 30% in the event of a comprehensive agreement on global emissions reductions. This will lead to the establishment of new targets for individual EU

Member States, based on a number of set criteria and would lead to an increase in the Irish reduction target, potentially to up to a reduction level of 30%.

Achieving these targets presents a very considerable challenge to all sectors of the economy including the agriculture sector. The Department has committed €15.5 million to climate change research projects since 2005 under the Research Stimulus Fund. As part of the Department's 2010 research call, €1.5m was committed to funding a Network that aims to bring together all principal investors working in the field of agricultural climate change research in a 4 year initiative. Ireland is engaged with the EU Joint Programming Initiative on agriculture, climate change and food security and is also a founder member of the Global Research Alliance on Agricultural Greenhouse Gases, which was established in December 2009.

National Heritage Plan - Heritage Ireland 2030

Minister for Culture, Heritage and the Gaeltacht launched the public consultation on Heritage Ireland 2030, a new national heritage plan for Ireland addressing both built and natural heritage on 1 November 2018. Heritage Ireland 2030 will recognise the vital role heritage plays in our community, our economy and our society, will be a coherent, comprehensive and inspiring framework of values, principles and strategic priorities which will guide and inform the heritage sector over the next decade, will enshrine the shared responsibility of people, communities, businesses and local and national Government in protecting our heritage and ensuring it is cared for into the future and will help us enjoy, understand and care for our heritage.

Framework and Principles for the Protection of the Archaeological Heritage (1999)

In June 2017, a Code of Practice for Archaeology was agreed between the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs and Transport Infrastructure Ireland. The purpose of this Code is to provide a framework within existing legislation and policy to enable TII to progress with its programme of work in accordance with the Government's transport strategy, whilst carrying out appropriate archaeological assessment and mitigation having regard to a set of principles and actions agreed by both parties. The Code is guided by 13 agreed principles, including policies and practices in relation to the protection of the archaeological heritage must take account of the 1992 European Convention on the Protection of the Archaeological Heritage (revised) (the Valletta Convention).

Managing Ireland's Rivers and Lakes: A Catchment-Based Strategy Against Pollution (1997)

This document sets out a strategy to protect water quality against pollution by phosphorus from all sources. This plan itself hasn't been updated as its part of a number of pieces of legislation for water quality but the river basin management plan would be the latest important introduction.

River Basin Management Plan for Ireland 2018-2021

On 17 April 2018 the Government published the River Basin Management Plan for Ireland 2018-2021. The Plan sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2027. Ireland is required to produce a river basin management plan under the Water Framework Directive (WFD). Water quality in Ireland has deteriorated over the past two decades. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland. In accordance with European and national legislation, the DHPLG has undertaken a Strategic Environmental Assessment (SEA) and an Appropriate Assessment (AA) of the RBMP. These processes have informed the finalisation of the Plan.

The 2013-15 water-body status information shows that 57% of river water bodies, 46% of lakes, 31% of transitional waters and 79% of coastal waters had achieved good or high-status. For groundwater, 91% of water bodies are classified as having good status. Nationally, the number of monitored river water bodies and lakes at good or high status appears to have declined by 4% since 2007–2009. However, this decline also masks an underlying trend of improvement and disimprovement across monitored river water bodies and lakes since 2009.

Having identified those groundwater and surface water bodies At Risk of not meeting their environmental objectives, detailed assessments were undertaken by the EPA to identify the likely significant pressures preventing the water bodies from achieving the required environmental objectives. In total, 17 pressure types were considered and summarised under 12 broad headings, namely:

- Agriculture
- Domestic waste water treatment systems
- Urban waste water
- Urban runoff
- Forestry
- Extractive industry, industry, waste
- Invasive species
- Environmental pressures impacting on the Physical Condition of Surface waters
- Abstractions/diversions
- Historically polluted sites

Callan lies within the South East region that contains 34 areas for action (AA's) and 150 water bodies within the AA's. Key policy responses include:

- Agriculture - The new strengthened Nitrates Action Programme will continue to be enforced by local authorities and the Department of Agriculture, Food and the Marine (DAFM) through the national inspection programme. Up to 5,000 farmers will receive support from Teagasc through the new collaborative Sustainability Support and Advisory Programme targeted within the 190 Areas for Action. In addition, 18,000 dairy farmers will receive advice on sustainable farming practices under the Dairy Sustainability Initiative.
- Urban Waste Water - Irish Water's Capital Investment Programme will deliver 255 major waste-water treatment projects and collection systems in 41 areas, which will benefit 136 water bodies at risk from urban waste-water pressures.
- Domestic Waste Water - The next National Inspection Plan for Domestic Water Treatment Systems (2018–2021) will drive improvements in system maintenance.
- Peat Extraction - Bord Na Móna expects to rehabilitate 9,000 ha. of cutaway bogs (covering 25 peatlands) by 2021. Of these bogs, 11 are associated with 12 water bodies At Risk of not achieving their WFD objectives due in part to activities associated with peat extraction.

As a result of these actions, in the South East region, it is expected that of the total 150 water bodies identified as being at risk of not achieving their environmental objectives, 29 of the prioritised water bodies are expected to meet their environmental objectives by 2021, 119 by 2027 and 1 beyond 2027.

The Role of the Callan LAP 2019-2025

The Plan provides a land use framework for the sustainable development of the area and will set the context for decisions on planning applications in the area.

In its making, the Plan will have regard to all relevant planning and environmental policy and legislation including European Union Directives, Ministerial guidelines and other national, regional and county plans and policies. These include the following:

- National Planning Framework

- National Climate Change Adaptation Framework
- Our Sustainable Future – A Framework for Sustainable Development for Ireland
- Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009). sets out five key goals:
    - To reduce overall travel demand;
    - To maximise the efficiency of the transport network;
    - To reduce reliance on fossil fuels;
    - To reduce transport emissions; and
    - To improve accessibility to transport.
- Ministerial Guidelines on Architectural Heritage Protection, Childcare Facilities, Development Plans, Landscapes, The Planning *System and Flood Risk Management , Retail Planni ng, Strategic Environmental Assessment, Sustainable Residential Development in Urban Areas and Sustainable Rural Housing*
- Kilkenny County Development Plan 2014-2020 provides a context for the making of this Plan. The CDP allocated a projected population growth figure for Callan, which must be adhered to. This population projection is translated into a housing land requirement, or a 'pot' of zoned land. The Core Strategy of the Plan sets out how the LAP complies with the County Core Strategy and how the population allocation is distributed.
- Kilkenny County Council Cultural Strategy Arts, Heritage and Libraries 2018–2022. This strategy replaces: the Arts Strategy (2005–2009); the Kilkenny Heritage Plan (2007–2011) and Kilkenny Biodiversity Plan (2009–2014)–both were extended to allow full implementation of key actions (a review of key achievements is available from the Heritage Office or www.kilkennyheritage.ie); and the Kilkenny Library Development Plan (2009–2013) Wider Horizons.

3.0 Current State of the Environment and Do Nothing Scenario

3.1 Statistical Overview of the Area

In order to assess the environmental effects of the LAP it is necessary to understand the present state of the environment (the baseline environment) of Callan. In particular, aspects of the environment that are currently experiencing plan-related problems or are likely to be significantly affected by the implementation of the LAP should be highlighted at this stage so that potential future impacts can be more accurately assessed. The Plan area comprises 182.75 hectares and its population in 2016 was record at 2,475.

3.2 Description of the Physical Environment of the Area

The baseline environmental data available is analysed under the headings below. Where possible, historical data and trends are outlined in order to provide a picture of the do nothing scenario; i.e. what would happen if current development trends in a certain area were to continue into the future.

1. Biodiversity, Flora and Fauna
2. Population and Human Health
3. Soil
4. Water
5. Air
6. Climatic factors
7. Material Assets
8. Cultural Heritage (architectural and archaeological)
9. Landscape
10. The inter-relationship between these issues

In accordance with the scoping report, and with the Department's Guidance, each element is only examined where relevant, in areas where the Plan would be likely to result in an impact, if unmitigated. Areas of environmental importance and areas experiencing environmental problems at present are examined in detail.

3.3 Biodiversity, Flora and Fauna

The United Nations Convention on Biological Diversity (CBD) defines "biological diversity" (biodiversity) as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes genetic diversity within species, between species and of ecosystems.

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

3.3.1 Designated sites

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds).

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2012 and the Flora (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19 (1) of the Act states that '*Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made'.*

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

There are four Natura 2000 sites within 15 km of the LAP area; three Special Areas of Conservation (SAC) and one Special Protection Area (SPA). The four Natura 2000 sites are River Barrow and River Nore SAC 002162, River Nore SPA 004233, Hugginstown Fen 000404 and Lower River Suir 002137.

The King's River, a tributary of the River Nore, flows through Callan town (See Figure 3.1). . The King's River forms part of the River Barrow and River Nore SAC while the boundary of the River Nore SPA is approximately 623 m downstream of Callan. Both of the other Natura 2000 sites are more than 10 km from the LAP boundary.

Table 3-1
Sites of International Importance Designated for Nature Conservation within 15 km of LAP boundary

Site Name	Site Number	Distance from Plan Boundary
River Barrow & River Nore SAC	002162	Within Plan Area
River Nore SPA	004233	Ca. 623 m south
Hugginstown Fen	000404	Ca. 10 km south - west
Lower River Suir	002137	Ca. 15 km south - east

The information available on the NPWS website for each of the Natura 2000 sites includes a site synopsis, Natura 2000 standard data form and conservation objectives. NPWS also hold the GIS dataset of the boundaries of Natura 2000 sites throughout the country.

The NPWS site synopsis for the River Barrow and River Nore SAC describes it as follows:

"This site consists of most of the freshwater stretches of the Barrow/Nore River catchments. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. The site supports many Annexed habitats including the priority habitats of alluvial woodland and petrifying springs. Quality of habitat

is generally good. The site also supports a number of Annex II animal species - Salmo salar, Margaritifera margaritifera, M.m. durrovensis, Alosa fallax fallax, Austropotamobius pallipes, Petromyzon marinus, Lutra lutra, Lampetra fluviatilis and L. planeri. Annex I Bird species include Anser albifrons flavirostris, Falco peregrinus, Cygnus cygnus, Cygnus columbianus bewickii, Limosa lapponica, Pluvialis apricaria and Alcedo atthis. A range of rare plants and invertebrates are found in the woods along these rivers and rare plants are also associated with the saltmarsh.

The NPWS site synopsis for the River Nore SPA describes it as follows:

"The River Nore SPA is a long linear site that includes the Kings River from its junction with the River Nore to a bridge at Mill Island Co. Kilkenny. The site includes the river channel and marginal vegetation. The River Nore supports nationally important numbers of Alcedo atthis. Other species which occur within the site include Cygnus olor, Anas platyrhynchos, Phalacrocorax carbo, Ardea cinerea, Gallinula chloropus, Gallinago gallinago and Riparia riparia."

Hugginstown Fen SAC and Lower River Suir SAC are not ecologically connected to the LAP area and both sufficiently distant from the LAP area as to be unaffected by the strategic and development management objectives of Callan LAP 2019 – 2025.

Figure 3.1
The King's River - Part of the River Barrow & River Nore SAC (Source npws.ie)

Freshwater Pearl Mussel Management Plans were published for the Rivers Nore and Clodagh (tributary of the River Suir) in 2010.

Every six years, the NPWS publish a report on the conservation status of habitats and species protected under the Habitats Directive. The second report was published in 2008. The third assessment report was published in 2013. Volume 223 (Habitats) and Volume 324 (Species) contain the detailed reports and relevant scientific information, including the conservation status of each SAC and the SPA by habitats and species. Table 3-2 sets out the conservation status of the SAC by habitats and species for both 2008 and 2013.

Table 3-2
Conservation status of Natura 2000 (habitats and species) in Plan area

				Conservation Status			Conservation Status
Site Name	Site Code/Ref	Habitats *includes note on whether habitat is mapped in Plan area	2008	2013 (Trend)	Species* *includes note on whether species is mapped in Plan area	2008	2013 (Trend)
River Barrow & River Nore	002162	Estuaries [1130] (mapped in Plan area)	Poor	Inadequate (improving)	Vertigo moulinsiana [1016] (not mapped in Plan area)	Bad	Inadequate (declining)
		Mudflats and sandflats not covered by seawater at low tide [1140] (mapped in Plan area)	Poor	Inadequate (improving)	Margaritifera margaritifera [1029] (not mapped in Plan area)	Bad	Bad (declining)
		Salicornia and other annuals colonizing mud and sand [1310] (mapped in plan area)	Poor	Inadequate (declining)	Austropotamobius pallipes [1092] (mapped in Plan area)	Poor	Inadequate (stable)
		Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] (mapped in plan area)	Poor	Inadequate (stable)	Petromyzon marinus [1095] (range is mapped in Plan area)	Poor	Bad (stable)
		Mediterranean salt meadows (Juncetalia maritimi) [1410] (mapped in plan	Poor	Inadequate (stable)	Lampetra planeri [1096] (range is mapped in Plan area)	Good	Favourable (N/A)

				Conservation Status			Conservation Status
		area)					
					Lampetra fluviatilis [1099] (range is mapped in Plan area)	Good	Favourable (N/A)
					Alosa fallax [1103] (mapped in plan area)	Bad	Bad (stable)
					Salmo salar (only in fresh water) [1106] (mapped in Plan area)	Bad	Inadequate (stable)
					Lutra lutra [1355] (mapped in Plan area)	Poor	Favourable (N/A)
					Trichomanes speciosum [1421] (Not mapped in Plan area)	Good	Favourable (N/A)
					Margaritifera durrovensis (Margaritifera margaritifera) [1990] (Not mapped in Plan area)	Bad	Bad (declining)

3.3.1 Protected Flora and Fauna

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 – 2012 and the Flora (Protection) Order 2015. They are also protected at a European level by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011). Under this legislation sites of nature conservation importance are designated in order to legally protect faunal and floral species and important / vulnerable habitats.

The legal protection set out within the EC (Birds and Natural Habitats) Regulations 2011 applies to all faunal species listed in Annex IV of the Habitats Directive. Faunal species listed on Annex IV of the Habitats Directive and occurring in Co. Kilkenny are as follows:

Land Mammals

- Myotis mystacinus Whiskered bat
- *Myotis nattereri* Natterer's bat
- *Myotis daubentoni* Daubenton's bat
- *Myotus brandtii* Brandt's bat
- *Nyctalus leisleri* Leisler's bat
- *Pipistrellus pipistrellus* Common pipistrelle
- *Pipistrellus pygmaeus* Soprano pipistrelle
- *Pipistrellus nathusii* Nathusius' pipistrelle
- *Plecotus auritus* Brown long-eared bat
- *Lutra lutra* Otter

The legal protection set out within in Section Part 6, Section 52 of the EC (Birds and Natural Habitats) Regulations 2011 applies to species of plants listed on Annex IV of the Habitats Directive. Plant species listed on Annex IV of the Habitats Directive and occurring in Ireland are as follows:

- *Najas flexilis* Slender Naiad
- *Trichomanes speciosum* Killarney Fern
- *Saxifraga hirculus* Yellow Marsh Saxifrage

These plant species are not known to occur in the LAP area although Killarney fern is a feature of interest of the River Barrow and River Nore SAC.

The Wildlife Act 1976 provides additional protection for certain species. Species protected under the Act are those listed on Schedule 5. Schedule 5 species known to occur in Co. Kilkenny include the following:

- Badger
- bat species
- deer species
- hare species
- hedgehog
- otter
- pine marten

- red squirrel

Since the publication of the Wildlife Act 1976, the list of Schedule 5 species has been extended through the publication of Wildlife Act 1976 (Protection of Wild Animals) Regulations in 1980 and 1990. As a result of their publication the following species have been added to Schedule 5: common frog Rana temporaria, common lizard Zootoca vivipara, smooth newt Lissotriton vulgaris, pygmy shrew Sorex minutus and stoat Mustela erminea hibernica were added to the Wildlife Act 1976 by regulations made in SI 282/1980. Marine turtle, Kerry slug Geomalacus maculosus, white-clawed crayfish Austropotamobius pallipes and freshwater pearl mussel Margaritifera margaritifera were added by regulations made in SI 112/1990.

The Wildlife (Amendment) Act 2000 sets out various amendments to the Wildlife Act 1976 that generally provide clarification and in some cases provide additional protection.

The current list of plant species protected by Section 21 of the Wildlife Act, 1976 is set out in the Flora (Protection) Order, 2015, which supersedes orders made in 1980, 1987 and 1999.

The plant species protected by the Flora (Protection) Order 2015 are listed on five schedules, A - E. The five schedules are as follows:

- Schedule A - Vascular plants
- Schedule B – Mosses
- Schedule C – Liverworts
- Schedule D – Lichens
- Schedule E – Stoneworts

Data is available from the National Biodiversity Data Centre on the occurrence of protected species in Co. Kilkenny. The NPWS produce a number of plans in relation to some protected species, these are set out below, and the distribution of the species in the Plan area is included.

The NPWS have produced a number of Species Action Plans for particular species of highest conservation concern and their distribution within Kilkenny is set out in Table 3.3.

Table 3-3
Distribution of species of conservation concern in Kilkenny

Species Action Plan	Distribution in Kilkenny/Plan area
Species Action Plan Bats 2008	Widely found
Species Action Plan Killarney Fern 2008	Not in Plan area
Species Action Plan Red Squirrel 2008	In Plan area
Species Action Plan Irish Lady's-tresses, Pollan, Hare, Corncrake 2005	
Irish Lady's-tresses	None in Kilkenny
Pollan	None in Kilkenny
Hare (Lepus timidus hibernicus)	Widely found
Corncrake	In Plan area

Threat Response plans have also been issued for particular species. These three year plans provide detailed information on range, distribution and habitat. They also focus on the particular threats facing each species and

identify the measures required to address these threats, as well as identifying who is responsible for implementing them and providing a time frame for delivery.

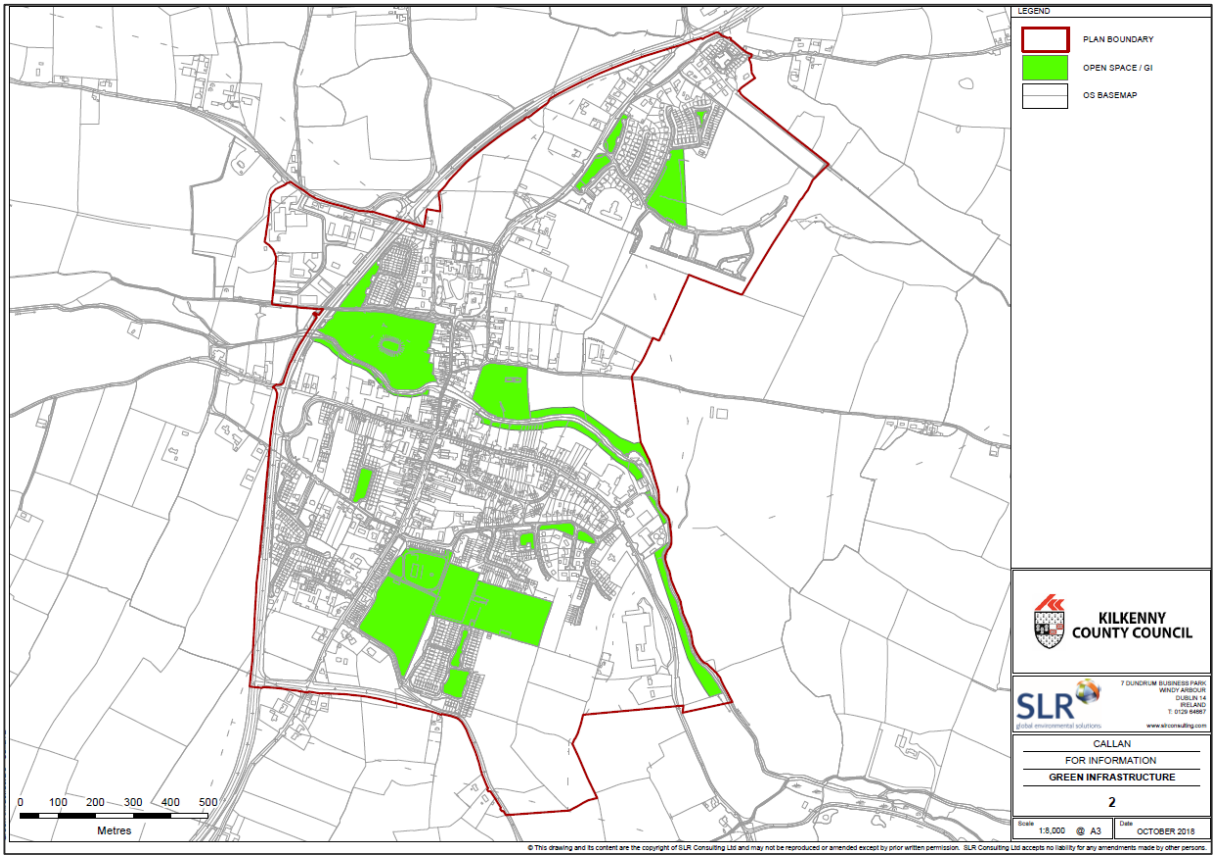
- Threat Response Plan Vesper Bats 2009-2011 – widely found
- Threat Response Plan Otter 2009-2011 – widely found
- Threat Response to Kerry Slug May 2010 – none found in Co. Kilkenny
- Conservation Plan for Irish Cetaceans 2009 – none found in Co. Kilkenny

3.3.2 Green Infrastructure and Ecological Connectivity

Callan town and the area of the LAP include several green spaces that are mainly characterised by agricultural and amenity grasslands and pastures bordered by hedgerows and parkland areas. These areas contribute to the biodiversity of the town and ecological connectivity[1] with the surrounding area. Large mature trees are present within the amenity grasslands adjacent to the river and are integral to the setting of the Motte and Augustinian Friary, both National monuments, on the banks of the King's River in the town.

[1] A measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread.

Figure 3.2
Map of Green Infrastructure



The Nore flowing through the central part of the County is one of its main rivers. The town is located within its river catchment on the banks of the Kings River, one of the Nore's main tributaries. The Kings River flows from west to east adjoined by a tributary which joins the river near the centre of the town in the form of a Mill Race.

The River Nore forms an important part of the County's Ecological network and functions as a corridor flowing from the uplands to the lowlands. They are of particular conservation interest due to the presence of a number of animals that are protected under Annex II of the Habitats Directive. These are Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, Vertigo moulinsiana and the plant Killarney Fern.

3.3.3 Woodlands, Trees and Hedgerows

Article 10 of the Habitats Directive requires planning and land use development policies to incorporate landscape features which are of major importance for wild flora and fauna and encourage the appropriate management and maintenance of these features. Landscape features such as rivers with their banks or the traditional systems for marking field boundaries which have a continuous/ linear structure or ponds or small woods which function as stepping stones are essential for the migration, dispersal and genetic exchange of wild species.

In Callan, these networks include the Kings River and the riparian zone which provides a continuous ecological corridor within the town as well as linkage to the wider landscape of the Callan area.

Hedgerows

Hedges also have particular conservation value as they often contain a richer variety of plant. Hedgerows provide food and shelter for insects, birds and other animals, forming corridors that permit wildlife to move between habitats. As many birds and small mammals never venture more than a few meters from cover, populations would become isolated and vulnerable without hedges. Nearly two thirds of Ireland's bird species nest in hedges. In general, wide and high hedges with a broad diversity of plant species are the most beneficial to wildlife.

The way in which they were planted makes for a great diversity of hedges that reflect land types and farming practices in particular areas. They are an integral part of the landscapes, giving a more wooded appearance, regulating the movement of water through the landscape, minimising soil erosion, and protecting waterways. Hedges also shelter farm animals and crops, prevent the movement of diseases from herd to herd, and are important habitats and ecological corridors to a multitude of wild plants and animals.

The trees, shrubs, and smaller plants that are also found in hedges provide food, shelter, roosting, and nesting sites for many species of bird and they are also home to many insects, which provide the food for birds and mammals such as owls and bats.

Trees

There is no Tree Preservation Orders in the plan area.

The National Survey of Native Woodlands (NSNW)

The National Survey of Native Woodlands (NSNW) surveyed a total of 58 sites in Kilkenny as part of the National Survey (BEC consultants 2003- 008). There are no sites within the Plan area. Ballykeefe Wood Nature Reserve is located circa 7km to the north of the town.

The Tree Register of Ireland (TROI) identified approx. 180 significant trees in the county.

These are available to view at: https://treecouncil.ie/treeregisterofireland/aacounty.htm

There are 3 trees listed on the Register in the Plan area:

1. Coolaghmore Hill, Callan, Co. Kilkenny: This hawthorn is in the middle of a field near a ruined church, by a well where women did their spinning.
2. Coolaghmore, Callan, Co. Kilkenny: Known as a 'Crannabachall' or 'Shepherd's Hook'; a lookout tree in penal times for the secret mass held nearby.
3. Horse Chestnut, Westcourt, Callan, Co. Kilkenny. Incredible recumbent tree with branches rooting in the pond. 7.46m at ground.

Figure 3.3
Trees on the Tree Register of Ireland


1


2


3

Ancient Woodlands

Ancient woodlands are defined in Ireland as areas which have been wooded since 1660. Possible ancient woodlands (PAWS) and long established woodlands (LEWS) were identified from documentary and archaeological evidence by the NPWS. A total of 28 PAWS and LEWS were identified in Co. Kilkenny. There are no woodlands located in or close to Callan.

Invasive Species

Invasive species such as Japanese Knotweed, rhododendron, sycamore and laurel can cause major ecological changes and damage to habitats where they become established. Information is available on invasive species from the National Biodiversity Data Centre and from Invasive Species Ireland, which is a joint venture between the Northern Ireland Environment Agency and the National Parks and Wildlife Service. A list of the top twelve invasive species in the region, known as The Dirty Dozen Report, was published by the National Biodiversity Data Centre in 2010.

This report provides detailed information, including distribution maps and species profiles, for the top twelve invasive species in the region which include:

1. Japanese Knotweed (*Fallopia japonica*)
2. Himalayan Balsam(*Impatiens glandulifera*)
3. Giant Hogweed (Heracleum *mantegazzianum*)
4. Asian Clam (*Corbicula fluminea*)
5. Rhododendron (*Rhododendron ponticum*)
6. Water fern (*Azolla filiculoides*)
7. Common Cord-Grass (*Spartina anglica*)
8. Nuttall's Waterweed (*Elodea nuttallii*)
9. Least Duckweed (*Lemna minuta*)
10. Dace (*Leusiscus leusiscus*)
11. Grey Squirrel (*Sciurus carolinensis*)
12. Wild Boar (*Sus scrofa*)

The distribution of some of those species within the context of the plan area is shown in Figure 3.5 and Figure 3.4. During a site visit, *Impatiens glandulifera* was recorded in the King's River within the town, just south of the bridge.

Figure 3.4
Distribution of Japanese Knotweed within the Plan area

Figure 3.5
Distribution of Indian Balsam close to the Plan area

3.3.4 Existing Environmental Problems

New development in the town, in particular greenfield development is likely to impact on flora and fauna and overall biodiversity due to the replacement of natural and semi natural habitats with artificial surfaces. The significance of these impacts and the resultant effects relates to whether these developments result in the loss of habitats or species of importance.[2] The loss of features, habitats and species, sufficiently widespread, unthreatened and resilient to project impacts and that will remain viable and sustainable is unlikely to be significant. However, the importance of features and the significant of effects must be established on a project-by-project basis.

[2] Ecological features can be important for a variety of reasons and the rationale used should beexplained to demonstrate a robust selection process. Importance may relate, for example, to the quality or extent of designated sites or habitats, to habitat/species rarity, to the extent to which they are threatened throughout their range, or to their rate of decline (CIEEM, 2018)

While loss of habitat may not be significant the effects of the loss of habitat such as fragmentation may be significant. Similarly, the loss of habitat when considered together with other plans or projects could result in significant cumulative effects. The location of new development is also important where these are adjacent to ecological networks such as hedgerows or inland surface waters. The loss of natural and semi natural habitats in close proximity can undermine the overall coherence of ecological networks.

The screening for appropriate assessment undertaken in accordance with the requirements of Article 6 (3) of the Habitats Directive will assess whether the LAP is likely to significantly affect Natura 2000 sites within the zone of influence of the plan area. Specifically, this will investigate in more detail the potential impacts such as soil erosion, industrial and municipal effluents and the potential effects such as deterioration of water quality that could undermine the conservation objectives of the features of interest of the Natura 2000 sites

Future development along the edges of designated ecological sites could result in the reduction of habitat and could reduce ecological connectivity on the edges of these sites. Development along or adjacent to the banks of rivers could result in a reduction in ecological connectivity within and between these and other habitats.

Pollution of water bodies as a result of any future development along or adjacent to its edges would be likely to adversely affect aquatic flora and fauna including salmonid species and other species protected under Annex II of the Habitats Directive.

3.4 Population and Human Health

3.4.1 Demographics

The proportion of the County Kilkenny population living in urban areas is gradually increasing. Callan is designated as a district town and its population is growing in line with this trend. Census records provided in Table 3-4 shows consistent levels of growth in Callan and the wider County since 1996. The ambition for Callan is to maintain Callan's proportionate share of the county's population projection.

Table 3-4
Callan Population 1996 -2016

Year	1996	2002	2006	2011	2016
Population	1,224	1,325	1,771	2,330	2,475

3.4.2 Deprivation

A population's socio economic profile is a key determinant of health and wellbeing. Those suffering from high levels of deprivation are also likely to live in a poor quality built environmental which exacerbates health inequalities. The links between planning and public health is well documented and elements of the built environment such as buildings, places, streets and routes play important roles in determining health and wellbeing and reducing health inequalities. The 2016 Pobal HP Deprivation Index shows Callan Urban with a score of -5.87 which is marginally below the national average with three small areas in the town indicating very disadvantaged status (see Figure 3.6 and Figure 3.7). The score is an improvement on the 2011 results which scored Callan at -7.16%.

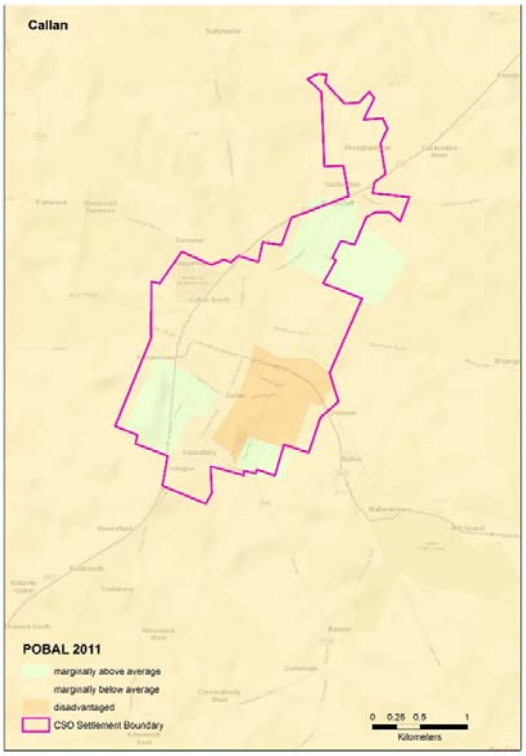


Figure 3.6 Pobal HP Deprivation Score 2011, Callan Town.

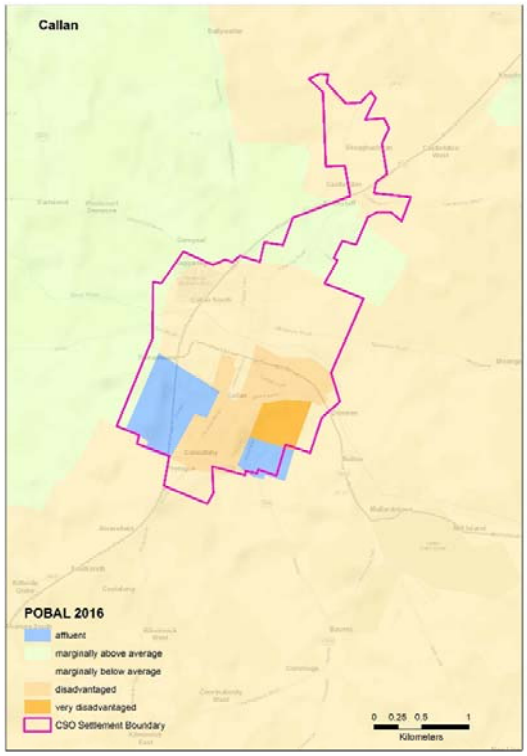


Figure 3.7 Pobal HP Deprivation Score 2016, Callan Town.

3.4.3 Human Health

Availability of spatial data on human health is limited; however a key area for consideration is the interrelationship of human health and water quality to include drinking water, waste water treatment, fisheries and shellfish waters. There will also be interrelationships between human health and air quality and climatic factors, such as flood risk. These are examined under the relevant headings.

3.4.3.1 Major Accidents Directive

The Major Accidents Directive (EU Directive 96/82/EC, known as the Seveso II Directive) seeks to reduce the risk and to limit the consequences to both man and the environment, of accidents at manufacturing and storage facilities involving dangerous substances. There is no Seveso sites within or adjacent to the plan area.

3.4.4 Waste Management

The issue of waste is now dealt with on a regional basis and there are waste management plans for three regions which were published in May 2015, namely:

- Southern region;
- Eastern-midlands region; and
- Connacht-Ulster region.

Callan is located within the Southern Region and 10 local authorities in the Southern Region of Ireland have been set a number of key targets in relation to waste prevention activities under a new plan that was launched on the 14 May 2015 - Southern Region Waste Management Plan 2015-2021.

Waste management is being reviewed at a national level, and the Government recently introduced its new waste management policy for Ireland entitled A Resource Opportunity, Waste Management Policy in Ireland. There is

also a Litter Management Plan in place for the County (2018-2020). More generally at a national level, additional support is required to reduce waste as well as promoting the circular economy.

3.4.4.1 Existing Problems

In terms of population distribution, population growth may cause problems if the associated infrastructural and social services are not provided in tandem with the growth.

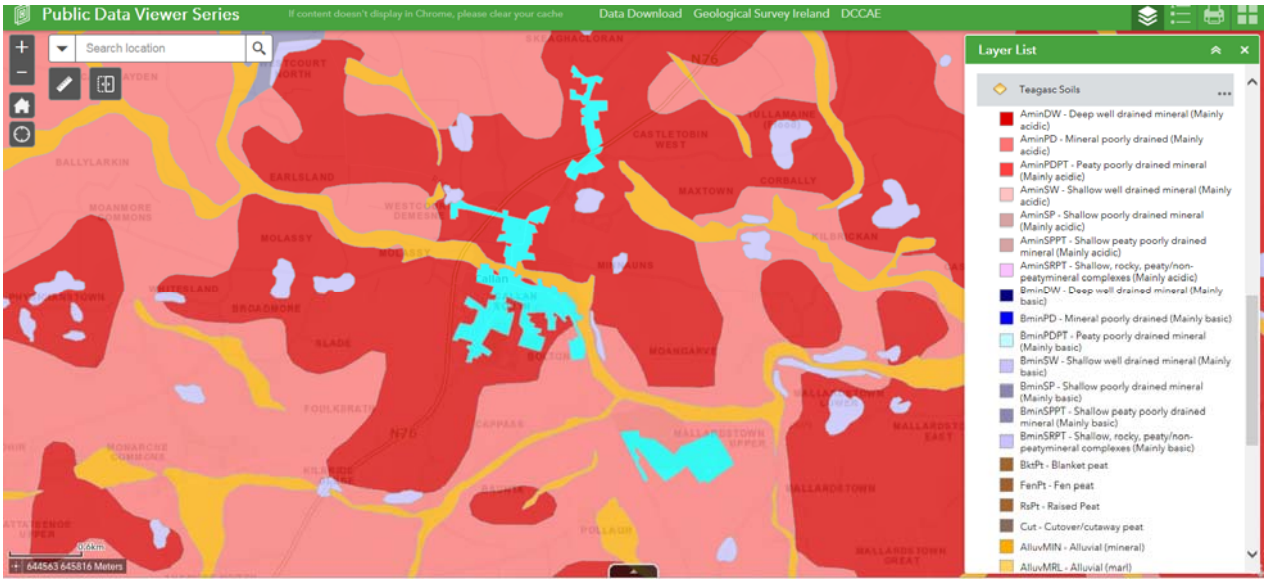
3.4.5 Soil

Soil is described as the top layer of the land surface within the biosphere and is a component of terrestrial ecosystems by providing a growth medium for flora and a habitat for fauna. Soil is also the basis for agricultural and forestry production for food, wood, and textiles.

There are main soil types mineral and organic which include mineral particles, organic matter, water and air. The nature of the organic matter in topsoil's varies according to the vegetation cover and environmental conditions. The proportion of the inorganic component in soil, for example, sand, clay, silt and gravel help to define its texture. The texture of the soil influences the capacity of the soil to retain moisture and its hydraulic conductivity and the ease with which water can percolate through it.

The soils in Callan are predominantly deep well drained mineral soils with Alluvial (mineral) adjacent to the Kings River with Gleys, more poorly drained soils located towards the south east of the town.

Figure 3.8
Teagasc, Soils Data (Source, GSI)



3.4.6 Geology

The basic rock formation of County Kilkenny consists almost completely of limestone with sedimentary rocks of various types and ages commonly found mantling the limestone. The bedrock geology consists of sedimentary rocks including sandstones, slate and conglomerates of different types and ages. The GSI data in relation to bedrock, shows that the bedrock in Callan is part of the Aghmacart Formation, comprising of dark shaly micrite, peloidal limestone (See Figure 3.9, Source GSI). The GSI also identify Callan as being located over a locally important gravel aquifer. A drinking water protection area associated with a borehole is located to the west of the town, close to Westcourt, but doesn't overlap with the development boundary (see Figure 3.10).

Figure 3.9
Bedrock Polygons in the vicinity of the Plan Area (Source GSI)

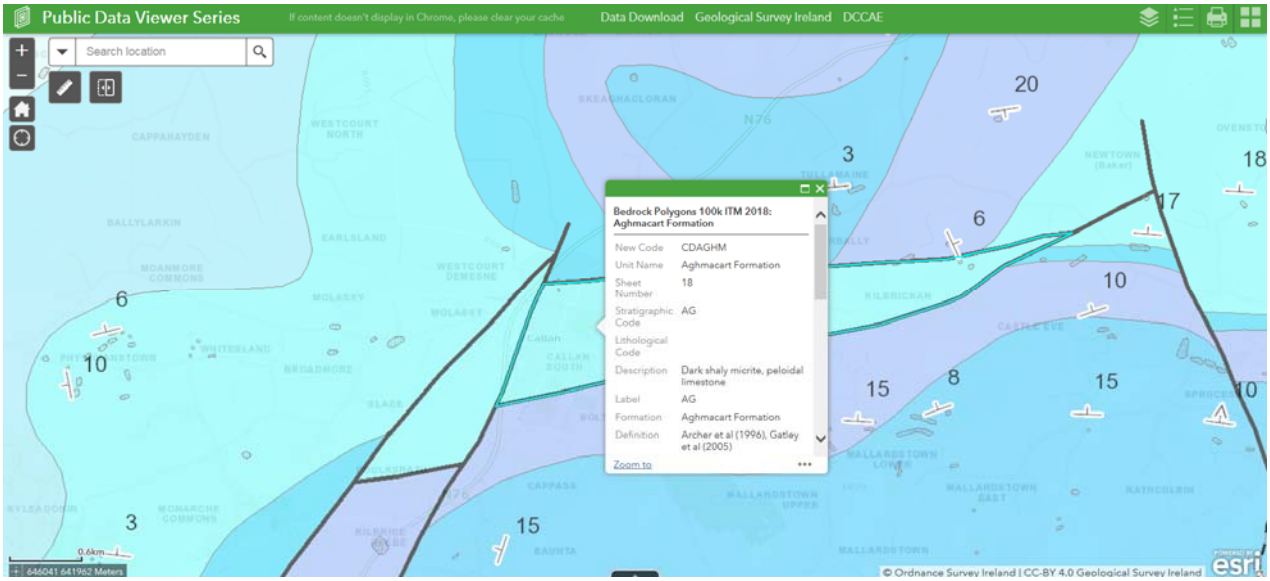
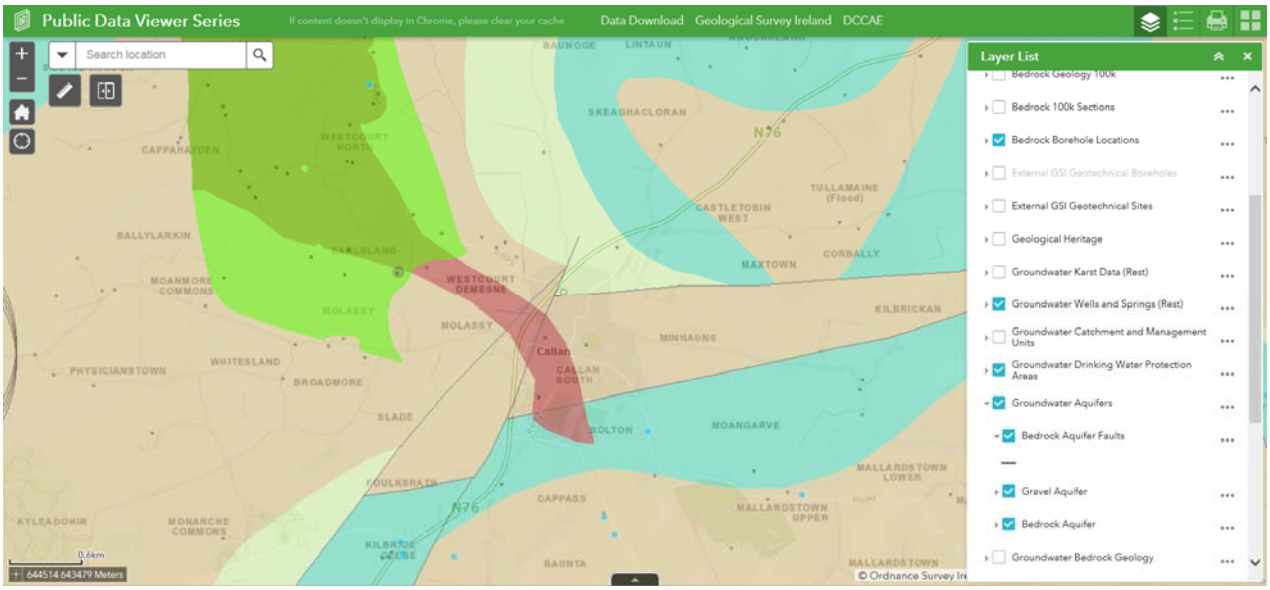


Figure 3.10
Groundwater Aquifers and Drinking Water Protection Areas (Source: GSI)



3.4.7 Corine Land Cover

The Corine Land Cover (CLC) is a map of the European environmental landscape based on interpretation of satellite images. It provides comparable digital maps of land cover for each country for much of Europe. The EU established Corine in 1985 to create pan-European databases on land cover, biotopes (habitats), soil maps and acid rain.

Ireland's Corine Land Cover 2000 was part of the update of Europe's land cover maps. The Irish inventory provides a quantitative dataset of land-use changes during a period of unprecedented economic growth. It is a valuable benchmark which over time it will help to monitor overall changes in our environment.

The study distinguishes between and cover and land use whereby land cover the observed physical cover including natural or planted vegetation and human constructions (buildings, roads, etc.) which cover the earth's surface and land use is defined as a series of activities undertaken to produce one or more goods or services.

In Callan is made up of continuous, discontinuous urban fabric in addition to pastures located in pockets in the north east, east and south east of the town. The CORINE Land Cover datasets from 2000, 2006 and 2012 are shown in Figure 3.11, Figure 3.12 and Figure 3.13 respectively. The most significant extension to the discontinuous urban fabric took place between 2006 and 2012.

Figure 3.11
Corine 2000

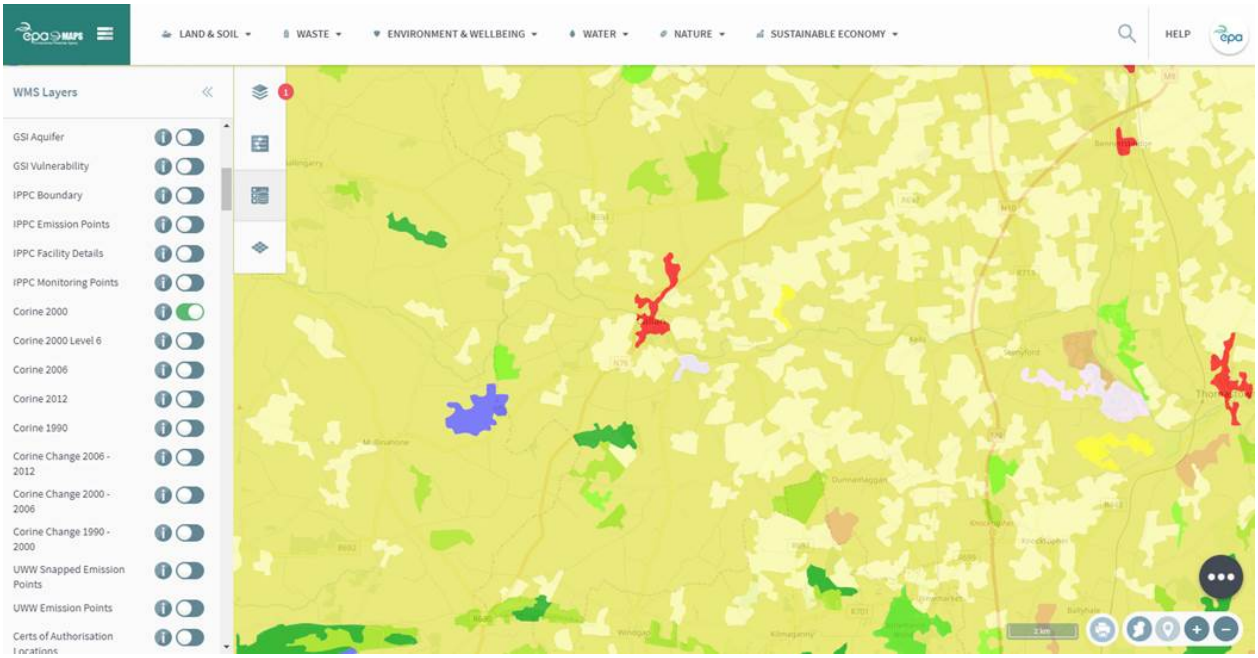


Figure 3.12
Corine 2006

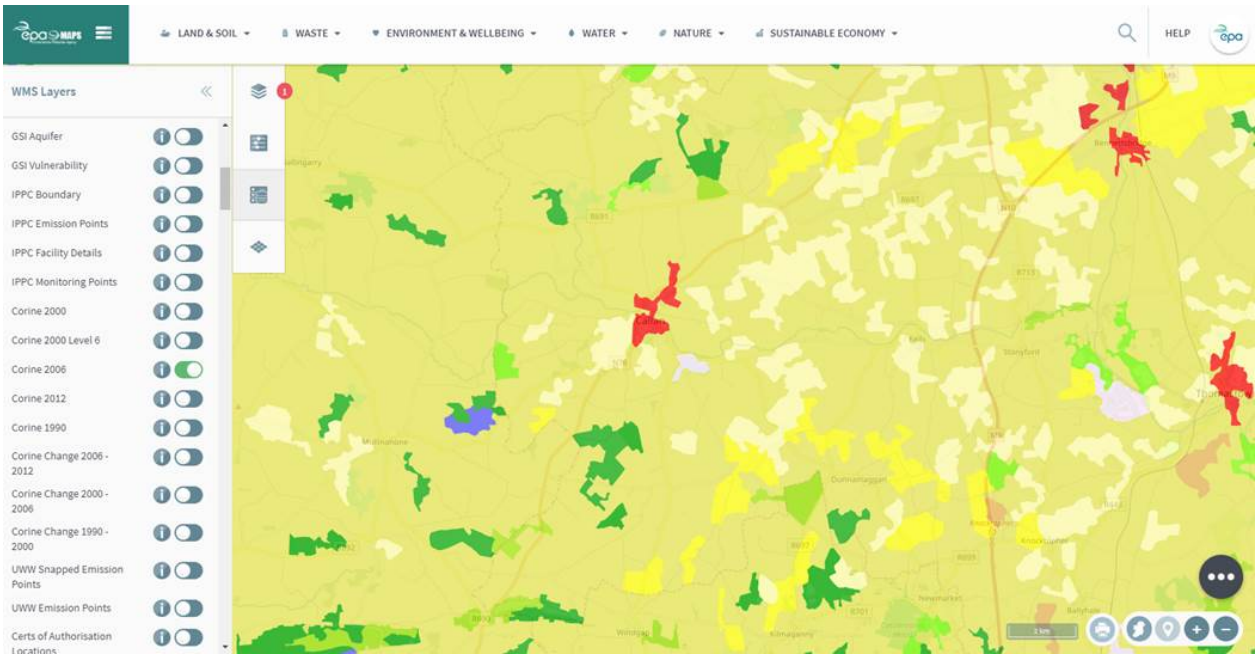
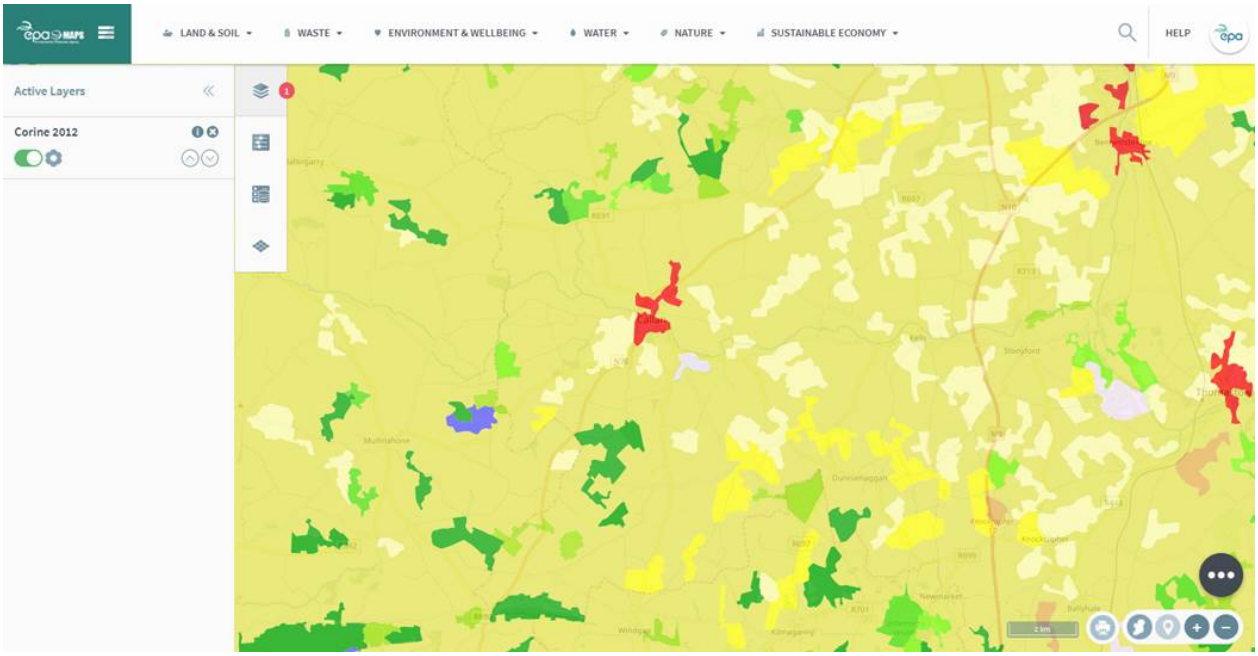


Figure 3.13
Corine 2012



3.5 Water

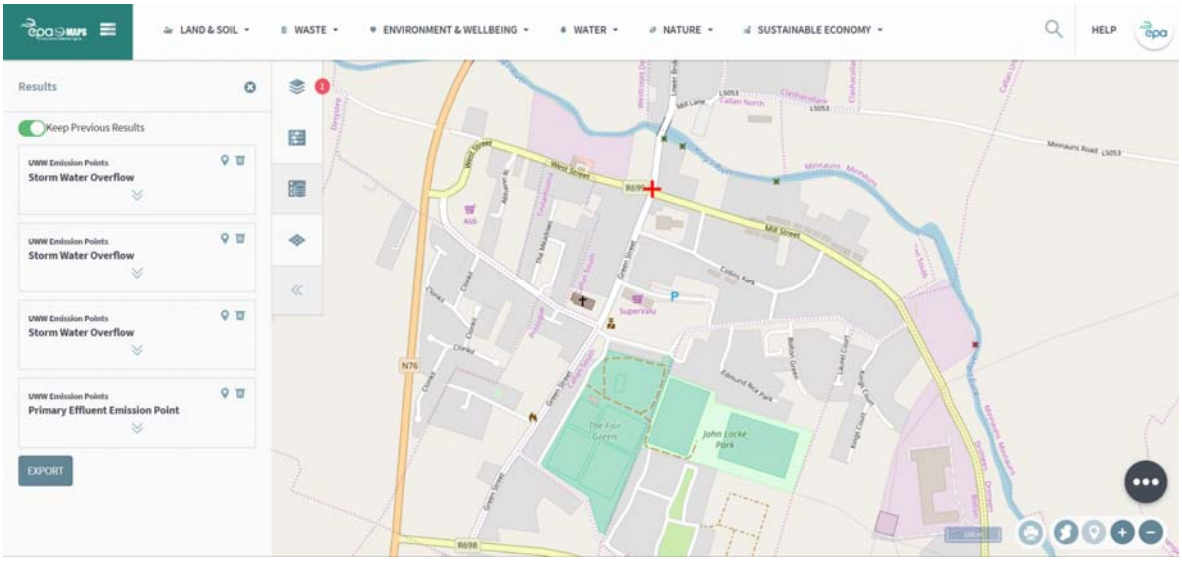
The existing treatment plant in Callan has a capacity for population of 4,000 and all properties within the town are connected. However it's a combined system with mixed storm and foul water which can be problematic when flood events occur. The town also has a proliferation of pumping stations. A strategic assessment of the towns existing network of pumping stations is required and the requirement for additional stations should be limited where possible.

Within Irish Water's Draft Investment Plan a provisional and draft list of projects and programmes is provided. The projects and programmes listed are expected to either commence, progress or be completed during the 2020-2024 period. Callan WWTP is included under this list and Table 3-5 provides an extract from the supplementary capacity register. In relation to headroom (PE), the register states that the available capacity is not confirmed until environmental and asset assessments are completed. In terms of additional comments in relation to the Callan WWTP, it also states that more stringent Emission Limit Values are required from 2020. In terms of emission points, there are three storm water outflows located within the plan boundary. These have the potential to impact on water quality during storm events.

Table 3-5
Existing Capacity of the Callan WWTP

Capacity - today (PE)	Load - in 2017 (PE)	Capability – now or by 2021	Headroom (PE)
4,000	2,227	UWW	1,773

Figure 3.14
Map Identifying Storm Water Outflows and Primary Effluent Emission Point (Source: EPA)



3.5.1 Drinking Water Quality

The supply of water for Callan is met from a local spring source supplemented by a borehole supply. The spring capacity is approximately 30-35 cu/hr which is topped up from the borehole supply. Demand is currently running at 45-48 cu/hr and whilst this capacity is being met at the moment, the capacity of the borehole is unknown. This renders the overall water supply infrastructure functional but tenuous in respect of future development. There is sufficient pressure in the network at present. The key issue is the maintenance of sufficient head at the water tower and pipe restrictions within the network. See also section 3.4.6.

3.5.2 Water Framework Directive

The Water Framework Directive establishes a framework for the protection of all waters including rivers, lakes, estuaries, coastal waters, groundwater, canals and other artificial bodies for the benefit of everyone. For the purposes of implementing the WFD, Ireland has been divided into eight river basin districts that are drained by a large river or number of rivers. County Kilkenny is located in the South Eastern River Basin District. The South East River Basin Management Plan (Water Matters) 2009-2015 was published in 2010. The Draft River Basin Management Plan for Ireland (2018-2021) was published in February 2017.

Water has been divided into groundwater, rivers, lakes, estuarine and coastal waters, which are in turn divided into specific waterbodies. Each waterbody is categorised in terms of its water quality status as follows: High, good, moderate, poor, bad, yet to be determined. The Environmental Protection Agency manages the monitoring of all waterbodies, and the latest information on the status of each waterbody is available from the epa.ie.

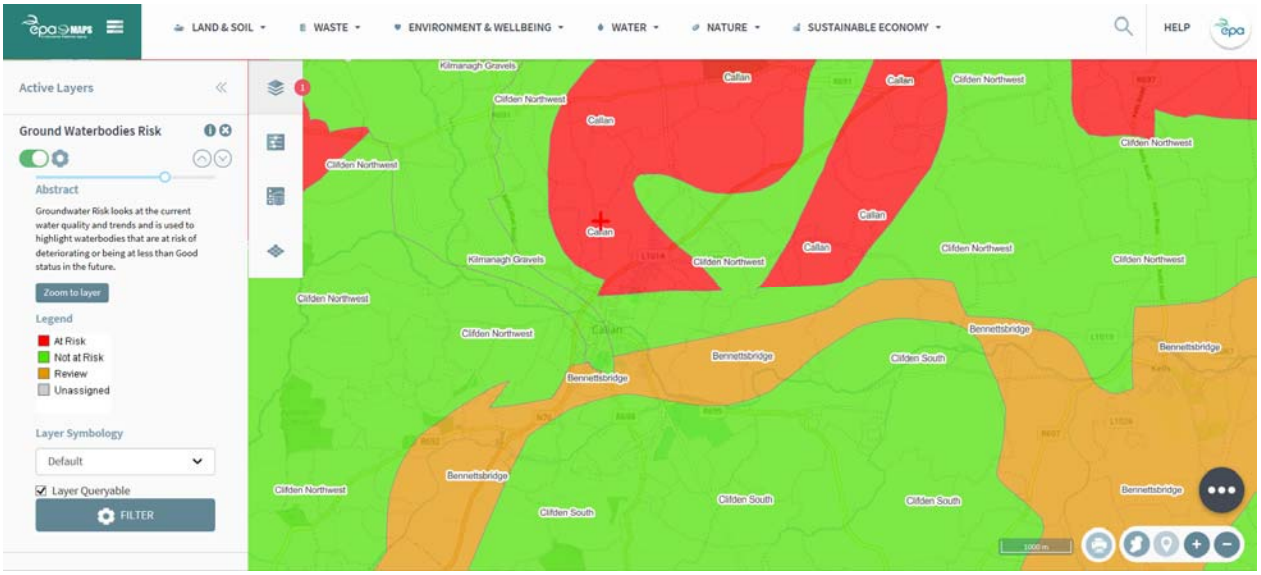
Groundwater Quality

Groundwater is an important source of drinking water but also makes an important contribution to river flows. It is water located beneath the ground surface in pore spaces and fractures of geologic formations. If the geologic formation can yield enough water for a significant water supply then the term aquifer is often used. It is estimated that groundwater contributes about 40% of all the water flowing in the River Nore. There is a local aquifer to the northwest of the town, outside the plan boundary.

Groundwater is categorised as good status throughout the county. Ground Waterbody WFD Status 2010-2015 is considered to be good. Groundwater Risk looks at the current water quality and trends and is used to highlight waterbodies that are at risk of deteriorating or being at less than 'good' status in the future. There are areas to the

north of the town shown in Figure 3.15 that are at risk of deteriorating or being at less than good status in the future.

Figure 3.15
Ground Waterbodies Risk



River Waterbody WFD Status 2010-2015

The River Waterbody Status results are recorded in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) and used for the purpose of River Basin Management Plans. As shown in Figure 3.16, the status of the Kings River during the 2010-2015 assessment cycle is recorded as 'good'. This is an improvement on the overall risk result from 2009 which in that year recorded the Kings River as being at significant risk of failing to meet good status by 2015. Water bodies placed in this 'At Significant Risk' category required improvement to achieve the required status.

Figure 3.17 provides the most recent information and shows River Waterbodies Risk, which looks at the current water quality and trends. This dataset is used to highlight waterbodies that are at risk of deteriorating or being at less than Good status in the future. The Kings River is classified as requiring review under this categorisation.

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Figure 3.16
River Waterbody WFD Status (2010-2015)

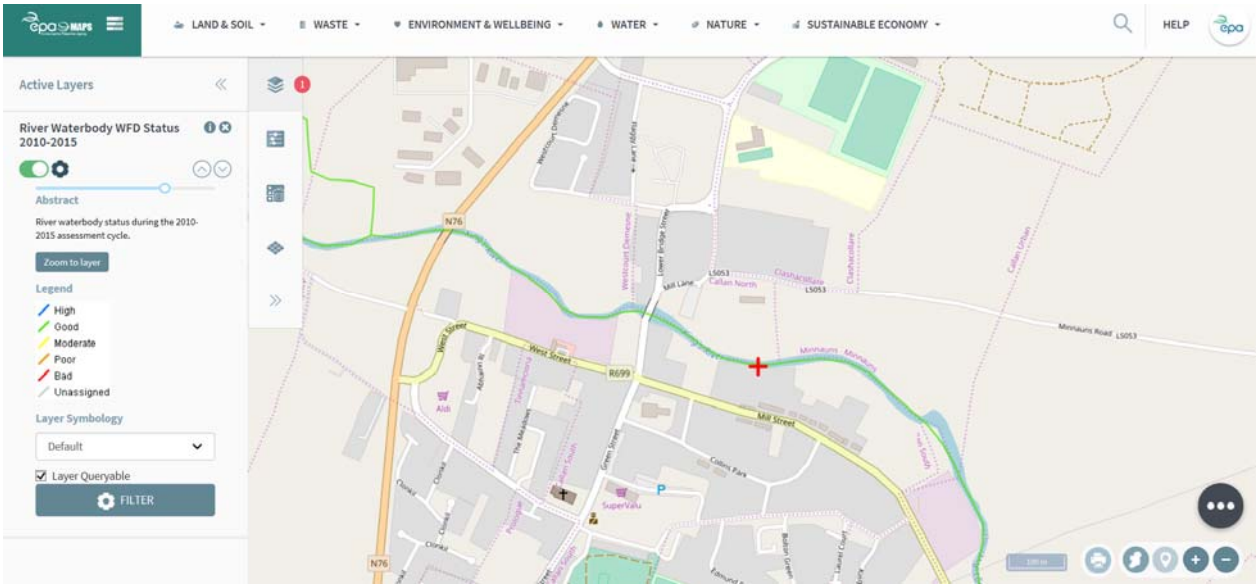
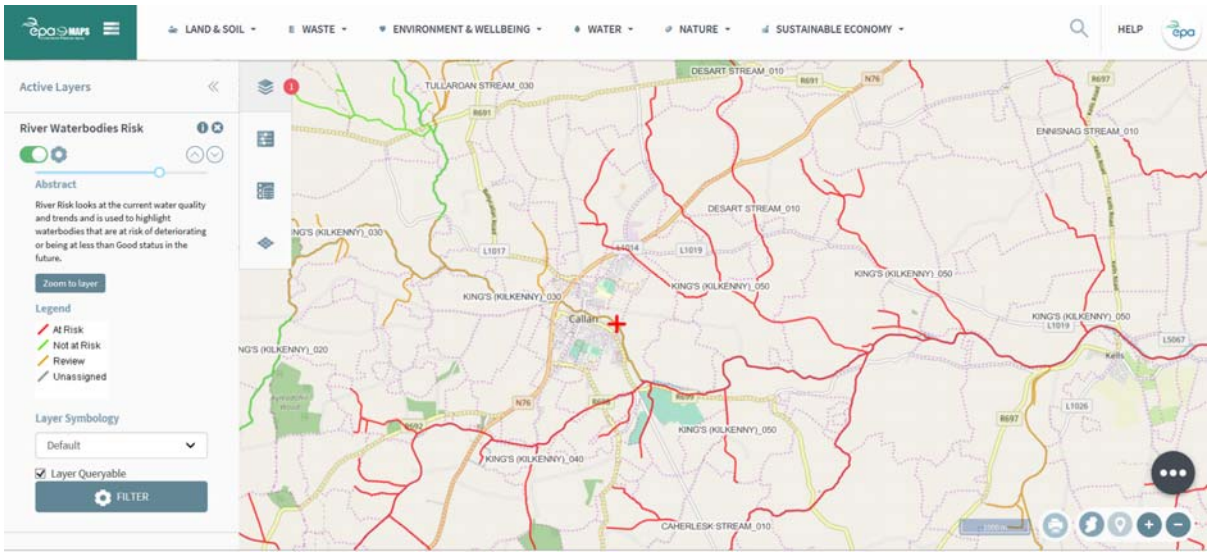


Figure 3.17
River Waterbodies Risk, 2016

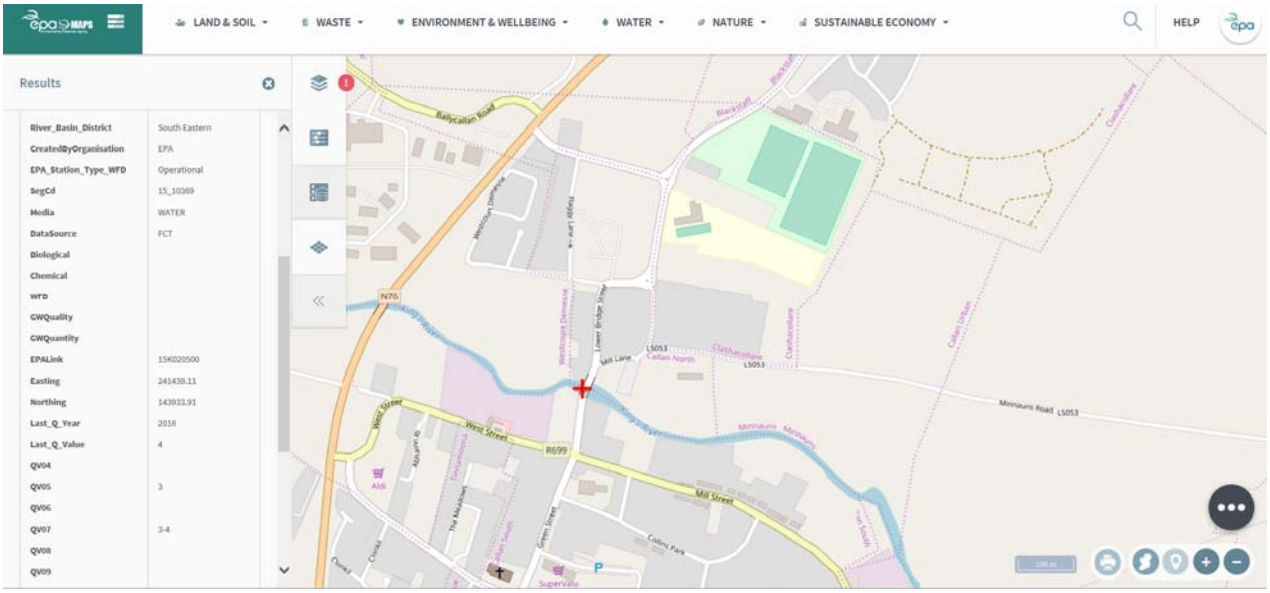


3.5.3 EPA Monitoring

The Environmental Protection Agency (EPA) monitors river and stream water quality through the Q Value system which describes the relationship between water quality and the macro invertebrate community in numerical terms. The presence of pollution causes changes in flora and fauna of rivers. Well documented changes occur in the macro invertebrate community in the presence of organic pollution as sensitive species are progressively replaced by more tolerant forms as pollution increases. Q5 waters have high diversity of macro invertebrates and good water quality, while Q1 have little or no macro invertebrate diversity and bad water quality. Intermediate values, Q1-2, 2-3, 3-4 etc. denote transitional conditions. River Quality in Callan was previously categorised as having poor status

with a Q value of 3, but the latest reading taken in 2016, records the river having a Q value of 4 and a status as good.

Figure 3.18
2016 Surface Water Q Values



3.5.4 Flooding

Background

Flooding is a natural phenomenon and where there is no risk to human life and property it is beneficial, as it provides fertile sediments to farmland, maintains valuable wildlife habitats and reduces flood risk elsewhere in the catchment. The floodplain plays a key role in this process and can be described as the flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding and acts as a temporary store for flood waters and facilitates their conveyance and flood levels downstream. A number of human activities tend to restrict the capacity of rivers to accommodate large storm flows. These include:

- **Greenfield development**: paving over previously permeable areas for roads, housing, car parks, etc. can significantly restrict the potential infiltration rate of the area covered. This activity might have a minor or negligible impact in large river basins (due to flood peak timing and proportion of area developed), but could substantially increase runoff in small river basins (i.e. by more than 100%).
- **Changes in land use or land use practices**: changes in the vegetation cover, the way in which land is used, or measures which impact negatively on natural flood retention areas (wetlands), can have impacts on both interception and infiltration.

Flooding of development such as property or infrastructure generally results in some damage. Development within a flood risk area therefore increases the potential damage when the flooding occurs. Such development can occur inadvertently due to lack of awareness of flood risk which can be a result of long intervals between flood events.

It is recognised that development in a flood risk area is sometimes necessary for economic reasons, but the type of development permitted should be compatible with the existence of the risk. Inappropriate development involves property or contents that have a high potential for flood damage being located in a flood risk area. Inappropriate development might include:

- high-density residential property (economic, social and personal welfare risk), or any residential property in areas subject to flash or deep flooding (risk to life);
- manufacturing or storage property where the cost of flood damage to contents (machinery/products) would be high (economic risk);
- industry or services where flooding could cause leakage of pollutants, such as chemical or sewage plants (risk to personal health and environment); and
- property or infrastructure with particular structural vulnerability to flooding (economic risk and risk to life).

A Strategic Flood Risk Assessment has been carried out as part of the Plan review process and was produced in line with The Planning System and Flood Risk Management Guidelines for Planning Authorities and follows the recommended staged approach to flood risk appraisal and assessment.

The SFRA concludes that the most significant risk of flooding within the study area of the Callan LAP is from fluvial sources. Three water courses have been identified as passing through or adjacent to the study area: King's River, River Tinnamoona and River Tullamaine.

The land within the LAP at greatest risk of flooding is adjacent to the King's River, which has floodplains of approximately 150m north and 50m south of the centre of the watercourse. Flood defences installed in 2011 as part of the Callan Flood Alleviation Scheme provide protection for up to and including the 10% annual exceedance probability (AEP) flood event. However outside of the already developed area, there are no flood defences.

River Tinnamoona, a tributary of King's River, runs adjacent to the north western zone of development. The upstream catchment of this river is small and rural, and therefore anticipated flows are small. Mapping indicates for much of the length flood events up to and including the 1% AEP will remain in channel. However, backwater effects from the confluence with the King's River could result in flooding to the south of this area.

Within the proposed zones of development in the north of the study area, the River Tullamaine is indicated to remain within channel for events up to and including the 0.1% annual exceedance probability. An easement of 8m should be provided to allow access to the channel for maintenance. A blockage of the culvert allowing the River Tullamaine to pass beneath the N76 could result in shallow flooding on N76, Kilkenny Road and Castletobin (road).

There is limited data available for assessing the risk of flooding from sewers, surface water, and overland flow. However, assessment of topographic data indicates that there are several areas that could be vulnerable to surface water flooding. The capacity and condition of drainage infrastructure in Callan has not been available for this SFRA and therefore the magnitude risk of flooding in these locations cannot be assessed. A site specific flood risk assessment should be completed in these zones.

All other sources of flooding including tidal, groundwater, from reservoirs, canals and artificial sources, and infrastructure failure have been assessed and scoped out of this SFRA.

The potential impact of climate change has been considered for all potential sources of flooding in the Callan area. Fluvial and groundwater flood risks are not anticipated to significantly increase as a result of climate change. Increases in high intensity rainfall are anticipated to increase the risk of surface water or overland flowing and the exceedance of surface water drainage networks. New development should include sustainable urban drainage systems (SuDS), which are designed with an uplift for climate change.

Development in all zones located adjacent to any of these watercourses would require a site specific flood risk assessment.

Development close to the King's River should be avoided and the land kept as natural floodplain. Development in these zones may be appropriate outside of the 10% AEP flood extent, however such development must be subject to the justification test and a site specific flood risk assessment would be necessary for any development to demonstrate how flood risk would be controlled.

3.5.5 Existing Problems

- There is no available figure on the availability of drinking water to meet future demand.
- River Water Quality is improving however risks include the presence of combined sewers outflows
- Flood risk affects areas of Upper and Lower Bridge street
- New development should include sustainable urban drainage systems (SuDS), which are designed with an uplift for climate change

3.5.6 Climate

Climate is quite uniform throughout the County. The continental climate type of the County is rather mild and moist with an average annual rainfall of 8001000mm.Mean daily temperatures range from 5.2°C to 13.4°C and the climate is generally fairly stable as it is the area of the country least affected by the sea. Kilkenny experiences an average of 4 days per year with snow lying, 9 days per year with hail, and 5 days per year with thunderstorms. (CASS, 2003).

Observed climate change impacts are most evident in the global temperature record, sea-level rise, loss of glaciers and ice-sheets and changes in the nature and intensity of precipitation events. These have impacted on human health, water resources and management systems, ecosystems, food production and rates and levels of coastal flooding. Global projections indicate that oceans will continue to warm, sea-level rise will continue during this century and sea-ice and glacier volumes will further decrease. Studies have shown that the intensity and frequency of extreme events are increasing and will further increase as a result of climate change (IPCC, 2013a). The character and severity of the impacts of climate extremes depend not only on the extremes themselves but also on exposure and vulnerability to these extremes.

The effects of climate change are projected to further impact on food production systems, water resources, coastal infrastructure, critical services and urban centres, resulting in increased displacement of people, societal stress and loss of land and other assets. Ireland's climate is changing in line with regional and global trends. For Callan, the effects of climate change will have impacts in terms of:

- Agriculture
- Biodiversity
- Critical infrastructure
- Water management
- Human health and wellbeing:

EPA projections indicate that we face challenges to becoming a low-carbon economy. The state of the Environment Report 2016 states that 'Ireland must follow a pathway to decarbonise energy, transport and heating. We must break our dependence on fossil energy infrastructures. In addition, the agriculture, forestry and land use sectors should achieve effective greenhouse gas emissions (GHG) neutrality by 2050. In effect, GHG emissions neutrality is the same amount of emissions being emitted as being sequestered or captured.' This effectively means net-zero emissions.'

Adaptation as well as mitigation, reducing greenhouse gas emissions, is a key element of the policy response. The purpose of adaptation is to reduce vulnerability to climate change, thereby reducing its negative impacts such as increasing average temperature and changes in rainfall patterns and a lengthening of the growing season.

Sectoral Impacts of Climate Change for Ireland

- Agriculture: the main impacts are expected to result from changes in air and soil temperatures, changes in rainfall patterns and extreme events.

- Marine environment: changes in ocean temperature and acidity are projected to continue, resulting in changes to marine ecosystems and species, which will have implications for fisheries.
- Biodiversity: increasing temperatures will impact upon the geographical range and phenology (the timing of life cycle events) of native species. Projected shifts in climate, temperature and precipitation may result in the increased occurrence of invasive species and competitive pressures on Ireland's native species.
- Coastal zones: sea-level rise is projected to increase coastal erosion and flooding, including effects on major coastal cities.
- Critical infrastructure: water, energy, communications, transport and emergency services are at risk from a range of projected changes, including sea-level rise, increasing temperatures, changing rainfall patterns and extreme weather events.
- Water management: the projected changes are expected to impact on water management and will exacerbate existing pressures in terms of water supply, quality and flooding.
- Human health and wellbeing: increasing temperatures are likely to result in the increased incidence of heat-related mortality. However, an overall decrease in temperature-related mortality is expected because of decreases in levels of cold related mortality. Increases in extreme events will have significant impacts on psychological health and wellbeing.

(Source: Climate Ireland)

3.5.7 Cultural Heritage

Callan is a medieval town and its earliest surviving developments include an Anglo-Norman motte and the Augustine Abbey which are located to the north of the King's River. The majority of the town's physical fabric is evidence of its early development and this is recognised by its designation as a zone of potential archaeological interest. Historic map sequences for the years 1848, 1903 and 1948 shows how Callan has changed over a period of 100 years. Of particular significance is the continuity of the built fabric over this period with the exception of change to the Westcourt Demesne.

National Monuments and Record Of Monuments And Places

The continuity in the built fabric has meant that some elements of the town's early history have survived. Monuments, specifically structures pre-dating 1700 AD, are protected under the National Monuments Acts 1930 – 2004 and are protected in a number of ways:

- national monuments in the ownership or guardianship of the Minister or a local authority;
- national monuments which are subject to a preservation order;
- historic monuments or archaeological areas recorded in the Register of Historic Monuments;
- Monuments recorded in the Record of Monuments and Places.

The town has three national monuments:

- St. Mary's Church
- Augustinian Friary
- Motte
- Callan Walled Town

The Archaeological Survey of Ireland holds the inventory of archaeological monuments which contains records of all known or possible monuments predating 1700 AD that have been brought to its attention and also includes a selection of monuments from the post-1700 AD period. These are referred to as Sites and Monuments Records

(SMRs) which formed the basis for the establishment of the statutory Record of Monuments and Places pursuant to Section 12 of the National Monuments (Amendment) Act 1994. The Record of Monuments and Places, consisting of lists of monuments and places for each county in the State.

The survey also produced reports on all historic towns dating to before 1700 AD with a view to delineating zones of archaeological potential within which archaeological deposits may exist. Callan town was subject to this survey and is considered a zone of archaeological potential. The extent of the zone of potential in addition to the register of historic monuments is illustrated in Figure 3.19**.**

Figure 3.19
Zone of Archaeological Potential (Source: Historic Environment Viewer, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.)

3.5.8 The Record of Protected Structures

The Record of Protected Structures lists the structures that are given statutory protection through the current development plan. 77 properties are currently listed under the record of protected structures.

3.5.9 The National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage has also recorded a number of structures within Callan. The purpose of the inventory is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for the Environment, Heritage and Local Government to the planning authorities for the inclusion of particular structures in their Record of Protected Structures.

3.5.10 Callan Architectural Conservation Area

The Planning & Development Act 2000 requires a Planning Authority to include in its Development Plan the objective of preserving the character of areas of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Such areas are designated as Architectural Conservation Areas (ACAs).

The purpose of the designation will be to manage change, affording greater control over the form of development and reducing instances of inappropriate development and demolition. This character is often derived from the

collective value of an area's buildings, their setting, landscape and other locally important features developed gradually over time.

It is an objective of the County Development Plan 'to ensure the preservation of the special character of each ACA particularly with regard to building scale, proportions, historical plot sizes, building lines, height, general land use, building materials, historic street furniture and paving.'

The preservation of the character of the Callan Town ACA is essential to safeguarding the identity of the town and maintaining continuity with its development history.

Statement of Character

The collection of buildings and spaces within the ACA represent a unique assemblage of Callan's built heritage and contribute to its identity, character and attractiveness. The designated area of approximately 10 hectares is located in the historic medieval core of Callan, illustrated in Figure 3.20, and includes portions of Mill Street, Green Street, Market Lane, West Street and Upper Bridge Street.

The boundary of the ACA includes 21 structures on the Record of Protected Structures, a significant percentage of the total entries within the town boundary. In addition, the NIAH identifies 62 structures of interest within the ACA, which acts as further evidence of the architectural merit within the town. Finally the National Monuments Service has designated a large portion of the town of Callan as a zone of archaeological potential, extender over a wider area totalling 54.34 hectares. Two character areas have been identified within the ACA due to their contrasting characteristics.

The Medieval Core

The characteristics of the medieval core accurately reflect the genesis of the town over the past 800 years with dominant features comprising narrow street dimensions and narrow building plots. The second area consists of the 19th C extension to the town which contrasts with the medieval core and encompasses more generous street dimensions, classically styled civic buildings and a market street.

Callan was established circa 800 years ago with the first town charter being signed in 1207. The core of the town developed during this time encompasses Mill Street, Upper and Lower Bridge Streets, Coyne Street, Mill and Clodine Lane. The streets are narrow and winding and centre primarily on Upper and Lower Bridge Street. The town at this time was also concentrated around three focal points, the Augustinian Friary north of the King's River, the Motte and St. Mary's Church, see below, on the south bank, which reinforced the strong north south emphasis of the early town layout.

There are no predetermined grids or angles, but rather an organic layout with layout and building lines responding to natural and historic features and contours. Informal crossing points or fords at the King's River, connecting the north and south of the town are visible at the junction of Clodine Lane and the King's River. The interaction between the built environment and river is limited with structures, as is usual in most towns from this era, turning their back on the river.

Callan's medieval morphology is expressed by the dense arrangement of long narrow plots along its meandering linear street line and narrow laneways. Due to the diminutive street dimensions building heights have been restricted to two to three storeys and limited private open space has been provided to the rear of the buildings that front onto the main thoroughfares.

Although the dereliction of historic properties has become a problem in recent decades the character of the buildings here continue to have significant architectural merit and group value. The majority of the buildings within this area were built in the 19th century, with the associated characteristics of narrow building plots (5 – 7.5 m), vertical emphasis fenestration, smooth render building finishes and traditional shop fronts evident.

There is a distinct cross pattern to the street layout in the centre of Callan, with the four most significant streets converging on one central point offering a focal point for the urban form. Several ancillary streets / laneways adjoin

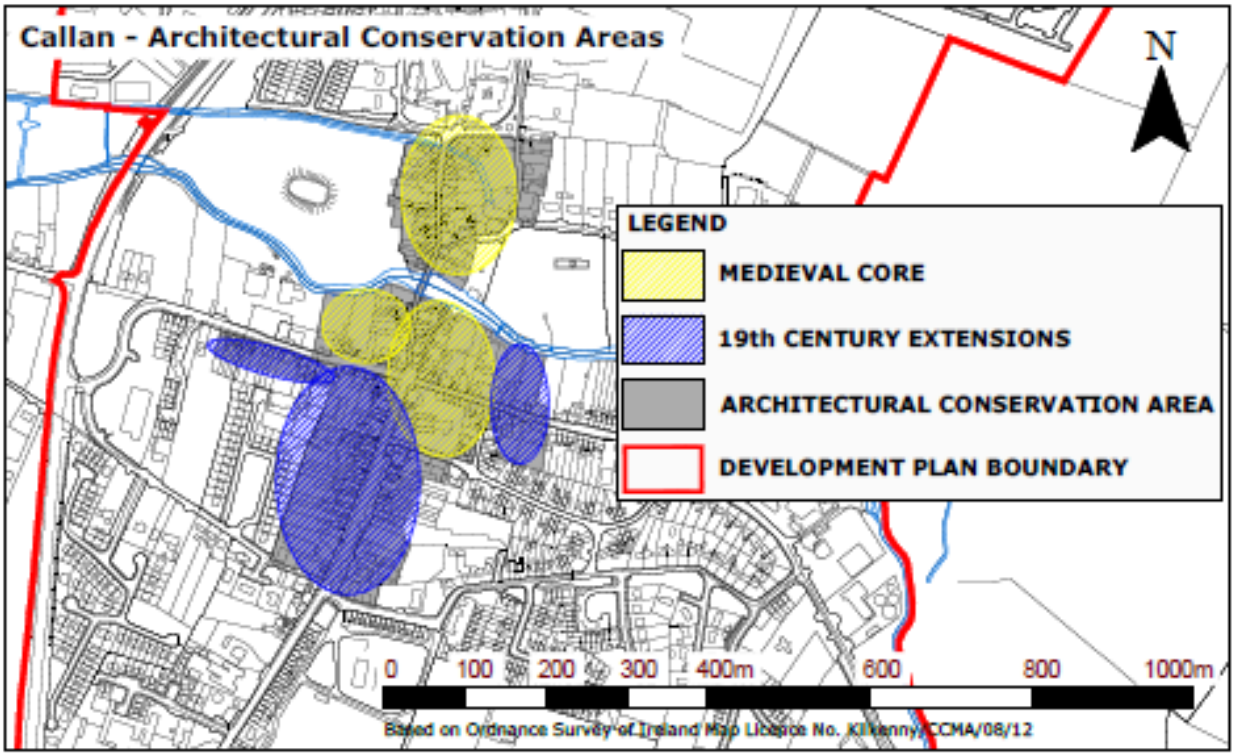
the four primary thoroughfares offering access to private space; such laneways significantly contribute to the character of the space. A contrast between the narrow built environment of the medieval core is offered by the bridging point over King's River affording views of King's River and associated flood plain. The elegantly designed bridge represents an attractive feature of civil engineering heritage, and has historical significance as the central arch was destroyed during the troubles in the early 20th Century.

19th Century Extension

A significant extension to the town was constructed in the 19th Century primarily consisting of Green Street south of the medieval core. The extension offers a contrast to the narrow streets of the central area, with the street dimensions in some places exceeding twenty metres. The resulting streetscape and its generous dimensions have a formal thoroughfare character that has been augmented by the buildings that front onto it. A neat group of landmark public administration buildings offers the street a formal setting, with larger plots and classical style facades, see opposite. The resulting assemblage represents the civic quarter of Callan and the area has been the commercial centre for the town and its environs since its construction.

The designation of the ACA for Callan has taken into account the aforementioned characteristics in defining a spatial boundary within which distinct planning and preservation controls will apply.

Figure 3.20
Callan Architectural Conservation Area



3.5.11 Landscape

A Landscape Character Assessment for the County is contained within the current Development Plan. This divides the County into four landscape character unit types, each with associated policies. This is addressed at the County level, therefore will not be addressed in this Environmental Report. A landscape character appraisal was undertaken by CASS Associates on behalf of Kilkenny County Council in 2003. The Landscape assessment has identified a number of Landscape Character Units within County Kilkenny.

Callan is located with the lowland character unit which contains predominantly fertile lands with intensive land management. The slope and topography of such units is in a shallow/gradual transition. As a result there is a high range of use potential in these areas. Concentrations of tillage lands in this lowland area tend to be characterised by extensive views across large fields with low and highly maintained hedges.

The lowlands are comprised of:

- Kilkenny Northern Basin
- Kilkenny Western Basin
- Kilkenny Eastern Basin

Callan is situation in the Kilkenny Western Basin which is an area characterised by tillage and pastureland uses. Key features such as the gentle topography and low hedging allows for clear open and extensive landscape views. Land parcels within this area are also regular in form and pattern. These landscape actors allow vistas over long distances with the possibility for development to have a disproportionate visual impact. Where shelter vegetation is present, it can have a natural visual barrier and reduce the visual impact of new development.

There is a need to protect and conserve views and prospects adjoining public roads and river valleys throughout the county where these views are of high amenity value. The views and prospects to be protected are contained in Appendix H of the Kilkenny County Development Plan 2014-2020. Landscape character areas and viewpoint are shown in an extract from the CDP.

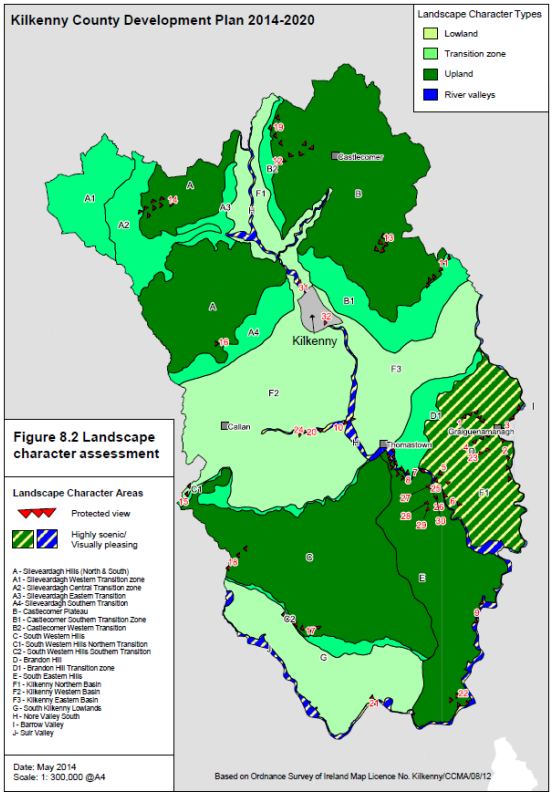


Figure 3.21 Kilkenny Landscape Character Assessment (Source: KCDP 2014-2020)

3.5.12 Green Infrastructure

The emergence of Green Infrastructure planning is a response to the growing recognition of the many benefits which green space provides at a strategic level and of the need to plan for its protection, provision and management in tandem with plans for growth and development. It has a significant role to play in assisting in the protection of Natura 2000 sites and biodiversity and meeting the requirements of the Habitats Directive.

Green infrastructure close to Callan town centre creates an attractive setting for residents and visitors alike. The protection and enhancing these areas as well as the links between them will play a significant role in enhancing biodiversity and providing opportunities for sustainable travel. It will also support any future tourism strategy for the town, thereby setting the stage for future investment in ancillary tourism and other infrastructure which will support the creation of a more diversified economic base.

In Callan the green infrastructure within the plan boundary includes the designated River Barrow/Nore candidate Special Area of Conservation along the Kings River. The Special Area of Conservation along the Kings River is zoned Open Space/Green Infrastructure with a restriction on its use in order to protect the river and its banks as a green corridor for wildlife and biodiversity. The zoning objective in Appendix 01 confirms this commitment.

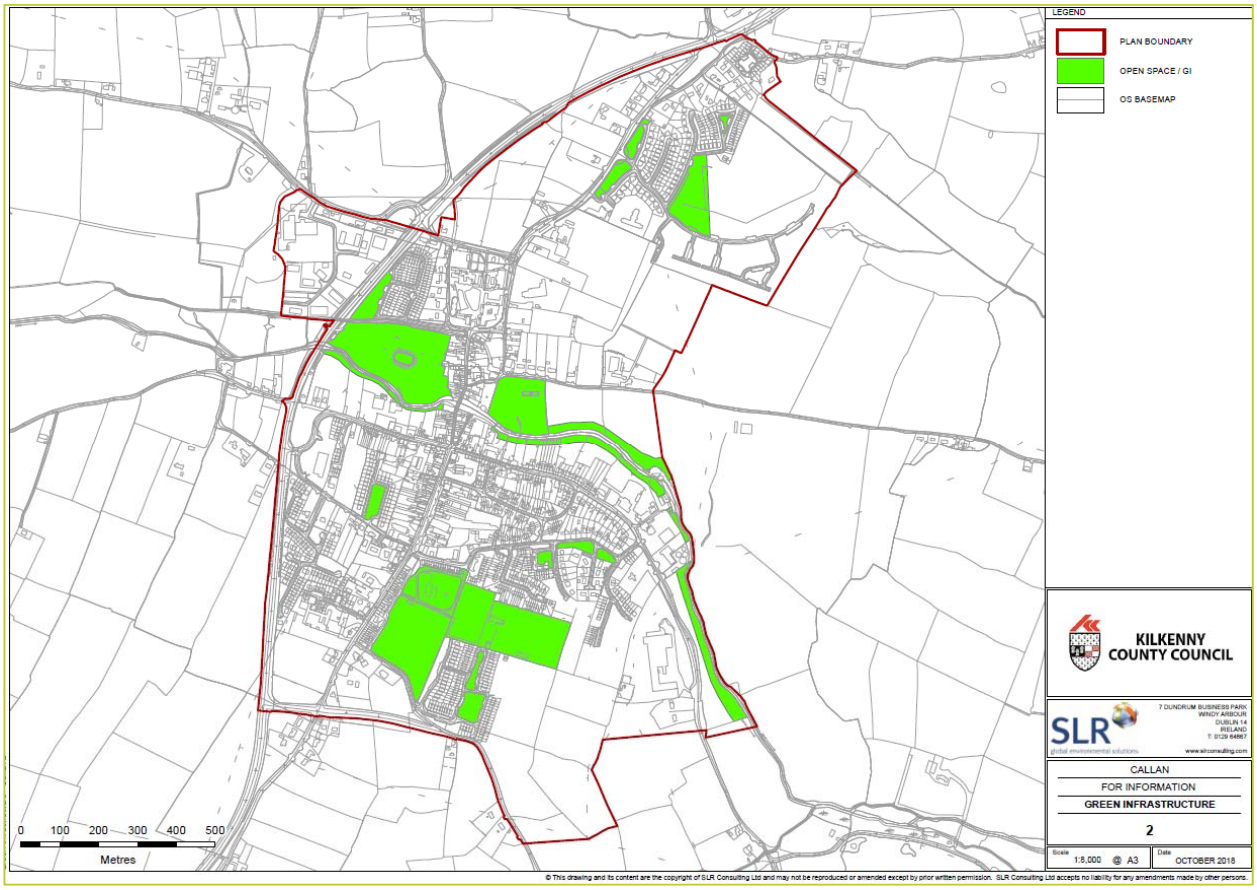
The green infrastructure belt therefore runs primarily along the east west axis, along the river. Walking/cycling is encouraged and several objectives for walking/cycling routes have been included in the plan which encourages better north/south connections across the river.

Green infrastructure also includes the undeveloped areas of Callan which are mainly characterised by agricultural grasslands and pastures bordered by hedgerows and backland areas. These areas contribute to the overall levels of biodiversity in the town. Large mature trees are also found on pasture lands adjacent to the river and are integral the setting of the Motte and Augustinian Friary, both National monuments.

Although green infrastructure is generally accessible to the public, the current exception is the Motte Field, which is the subject of a funding application under the Rural Regeneration and Development Fund. This application outlines proposals for improving access and use.

Flood zones have also been identified in the strategic flood risk assessment for the plan. Areas at risk should be kept clear from vulnerable developments so as to safeguard future developments from the potential impacts of flooding.

Figure 3.22
Green Infrastructure



3.5.13 Hedgerows

Much of Ireland's hedgerow landscape was established between 1750 and 1850 as landlord's enclosed former commonage to form fields. For hedges that are older they were likely be used to delineate townland boundaries which can be seen on the old Ordinance Survey maps as dotted lines. They are usually made up of species such as hawthorn and may have trees of ash, elm, sycamore, beech or willow and can incorporate features such as cut

stone piers or forged wrought iron gates. As both field and townland boundaries they are standing records of the area's history of land ownership and local farming practice. As well as their significance for natural heritage, hedges are therefore important in terms of cultural heritage and give character to the local landscape.

3.6 Air Quality

Air quality is assessed by monitoring the levels of various pollutants and checks whether air quality meets standards that are considered adequate for the protection of human health and the environment. These pollutants include particulate matter (PM10), sulphur dioxide, nitrogen oxides, ground-level ozone and black smoke.

Emissions of pollutants from vehicles, power stations, industry, domestic fuel burning and agriculture can have effects that stretch beyond the local environment. The Framework Directive on Air Quality introduced by the EU in 1996 provides for each member state to:

- Divide the country into zones
- Conduct ambient air quality in these zones
- Report on air quality within these zones

Ambient air quality monitoring and assessment in Ireland is carried out in accordance with the requirements of the Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive37, also known as the CAFE Directive. The CAFE Dir ective has been transposed into national legislation by the Air Quality Standards Regulations 2011.

In Ireland, four zones are identified in the Air Quality Regulations (2002). The main areas defined in each zone are:

- Zone A: Dublin Conurbation
- Zone B: Cork Conurbation
- Zone C: Other cities and large towns comprising Galway, Limerick, Waterford, Clonmel, Kilkenny, Sligo, Drogheda, Wexford, Athlone, Ennis, Bray, Naas, Carlow, Tralee and Dundalk
- Zone D: Rural Ireland

The air quality analysis is based on concentration measurements of the following pollutants: particulate matter, ozone, NOx, SO2, lead, CO and benzene. The pollutants of most concern are fine particulate matter, expressed as PM10, nitrogen dioxide and, to a lesser extent, ozone. Callan is located within Zone D and the annual air quality reports give summary results showing typical concentrations of pollutants in this zone. The 'Air Quality in Ireland 2006 Report concludes that these pollutants are below thresholds in these areas with the exception of PM10.

There is limited baseline information available in relation to air quality at present which is considered to be a deficiency and constraint in terms of this assessment. According to the EPA, emissions from road traffic are the main source of many air pollutants harmful to human health, including nitrogen dioxide, oxides of nitrogen, particulate matter, carbon monoxide, volatile organic compounds (VOC) and heavy metals. As such traffic movements, and specifically diesel cars, can be considered as a likely indicator of air quality. A move towards sustainable modes of transport would reduce emissions from road traffic. According to Census 2011, throughout Co. Kilkenny, a total of 12% of commuters used sustainable means of travel (cycling, walking, bus or train). This compared to 21% nationally. In 2016 in Callan, 23% and 1.6% travel to work, school or college by foot and bicycle respectively.

3.6.1 Existing Problems

- Road traffic is the main source of nitrogen oxides and air pollution generally and there is a need to reduce the level of unsustainable modes of commuting through prioritising sustainable patterns of land use whereby residential areas are located within walking distance of employment, service centres and schools.

3.6.2 Noise

In 2006, the Government made regulations relating to Environmental noise (S.I. 140 of 2006). Environmental noise is defined in the Regulations as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity. The regulations require that a Noise Mapping Action Plan must refer to places near major roads, major railways and major airports, and within any relevant agglomeration. A Draft Noise Action Plan 2019 - 2023 for Kilkenny has recently been published. The Action Plan is designed with the twin aims of;

- Avoiding significant adverse health impacts from noise and
- Preserving environmental noise quality where it is good

In Kilkenny the following areas are within the subject criteria of the Regulations and included in the Strategic noise mapping exercise undertaken in 2017 by the TII:

- The M8 and M9 Motorways within County Kilkenny.
- The N10, N24 and N25 National Primary Routes within County Kilkenny.
- **The Section of the N76 National Secondary Route from the Waterford Road Roundabout on the Kilkenny Ring Road to its junction with the R692 Kilbride Junction south of Callan.**
- The Section of the N77 National Secondary Route from its junction with the N78 at Hennebry's Cross to the Hebron Road Roundabout on the N77 Kilkenny Ring Road.

The strategic noise maps generated by TII give predictions for two noise indicators, Lden and Lnight. The noise levels indicated are attributed only to the specific source of noise being considered, namely the traffic on the roadway and therefore do not consider any other noise source. The next steps with respect to the action plan will be to conduct a cost benefit analysis to prioritise list of actionable works for noise mitigation. In terms of the Draft LAP, the mapping can be used to help avoid, or minimise the adverse impacts of noise. In the scenario where new residential development or other noise sensitive development is proposed in an area with an existing climate of environmental noise, there is currently no clear national guidance on appropriate noise exposure levels. The EPA Guidelines suggest that in the interim that Action Planning Authorities take under consideration the planning policy guidance notes issued by The Scottish Office (The Scottish Office, Planning Advice Note PAN 1/2011: Planning and Noise & Technical Advice Note: Assessment of Noise). This states that

> '*Developments which are likely to generate a significant level of noise do not generally make good neighbours with noise sensitive land uses such as housing, hospitals, educational establishments, offices, places of worship and nursing homes and some livestock farms. Development plans can, where relevant, indicate the range of uses which are likely to be permitted in an area affected by existing or potentially high levels of noise, including Noise Management Areas, as well as the noise mitigation measures the planning authority will expect to be applied to new development.*'

Areas likely to be affected include those adjacent to the N76, shown in Figure 3.23 and Figure 3.24.

Figure 3.23
Strategic Noise Mapping - noise contours for the Lden (day)

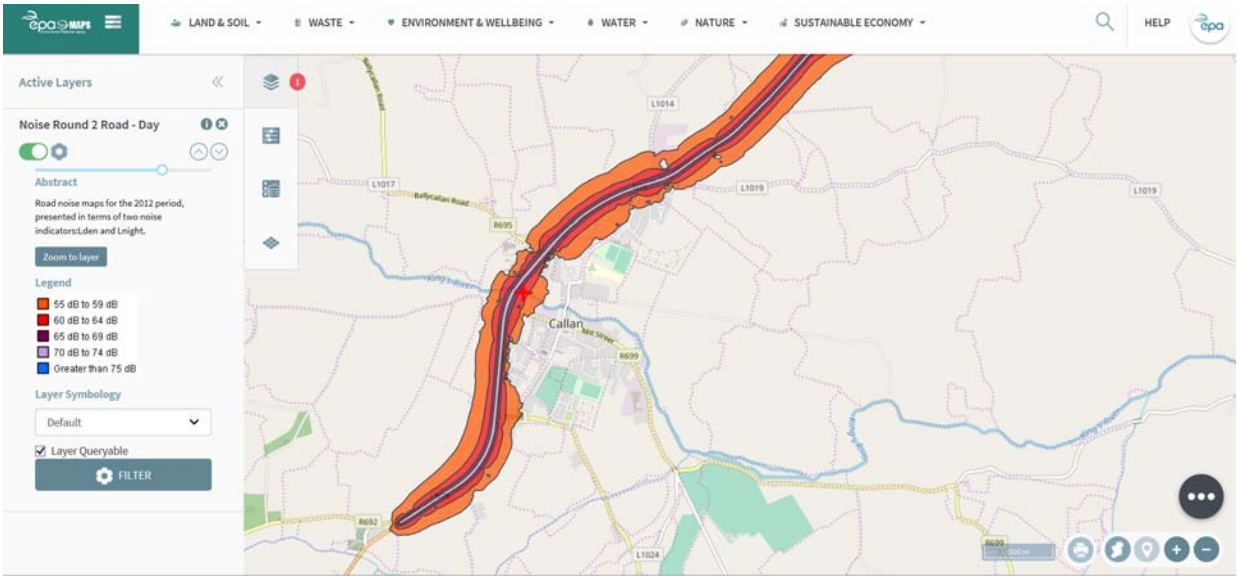
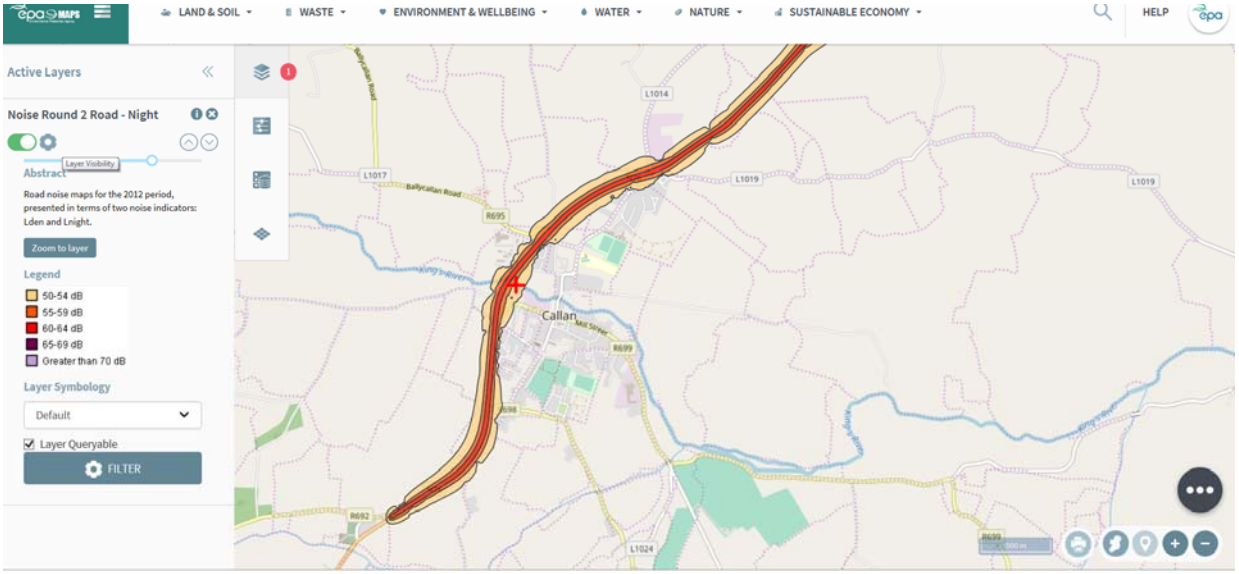


Figure 3.24
Strategic Noise Mapping - noise contours for the Lnight (night) periods



3.6.3 Existing Problems

- Projected impacts of climate change in Ireland include: increasing average temperatures, more extreme weather conditions including rainfall events, increased likelihood of river and coastal flooding, water shortages, changes in the type and distribution of species and the possible extinction of vulnerable species. The main sources of greenhouse gas emissions are Agriculture, Energy and Transport.
- Several locations in the plan area may be affected by environmental noise levels and poor air quality from roads.

3.7 Material Assets

Material assets are taken to include infrastructure and utilities including rail, road and energy/telecommunications infrastructure. It also includes economic/natural assets such as quarries, forests and agriculture.

3.7.1 Transportation

Callan Town is located 10 miles south-west of Kilkenny City, 15 miles from Carrick on Suir, 17 miles from Clonmel and 35 miles from Waterford City. The town enjoys good road connections to employment bases such as Clonmel and Waterford.

Within the town, the principal street, Bridge Street/Green Street, runs north to south with West Street/Mill Street as a secondary axis. The two streets intersect at a cross roads to the south of the bridge. Properties within the historic core are located along narrow streets thus constraining this area of the town in terms of access and physical permeability. Underused backlands coupled with the location of the Kings River also create barriers to movement across the town.

Before the N76 was constructed, Bridge Street and Green Street was the main highway from Clonmel to Dublin, and was heavily trafficked. With the N76 traversing on the west side of town, much of the through traffic has been eliminated. However, traffic on Bridge Street remains an issue, principally due to its narrow size. Frequent local trips which may include school traffic results in continued congestion around Bridge Street. The narrow layout means that this congestion adversely affects the commercial viability of properties along the street as well as presenting a pedestrian safety risk.

In 2006 Census figures confirmed that cars are the dominant means of transport in the town with over 55% using the car to travel to work, school or college. 2006 Census figures approximate that in Callan 24% and 1.25% travel to work, school or college by foot and bicycle respectively. In 2016, 23% and 1.6% travel to work, school or college by foot and bicycle respectively.

In 2016, 47.5% of people in Callan travelling to work, school or college have a journey time of 15 minutes to 45 minutes; remaining roughly the same level since 2011. Census 2016 records that 76%, of households own either one or two cars. This level of car ownership is reflected in that 60% of those travelling to work, school or college are recorded as using a car which is a 5% increase on 2006 figures.

As the predominant mode of transport, overdependence on the car contributes to traffic congestion, noise as well as poor air quality and a lack of physical activity. More generally, locating services and employment opportunities in areas of high accessibility is critically important for those that do not benefit from car ownership.

Callan is served by the bus services that operate from Clonmel and Cork to Dublin, all of which stop in Kilkenny and Dublin city centre. The Department of Education and Science also runs a school bus service for secondary school children and for rural transport services, Callan is among the areas served by the Ring a Link scheme that is funded by the Rural Transport Initiative under Transport 21. Callan is also approximately 45 minutes by bus from Clonmel and 20 minutes from Kilkenny, both of which are served by train from Dublin. With the exception of these services, Callan's public transport is limited particularly with respect to those living in rural locations who are largely dependent on road transport and the use of the car. There are currently two taxi companies located in Callan

3.7.2 Existing Problems

- The number of people travelling to work, school or college by car is increasing.

4.0 Assessment Framework

4.1 Strategic Environmental Objectives and Indicators

4.1.1 Background

SEA uses a combination of objectives, targets and indicators to describe and monitor change and predict impacts of proposed plans and programmes on the environment (Therivel, 2004). Objectives and targets set aims and thresholds that should be taken into account when assessing the impact of proposed plans on the environment. Indicators are used to illustrate and communicate impact in a simple and effective manner.

Indicators can also be used to form the basis of a monitoring programme for the Plan, the results of which will inform the next review. The way in which monitoring will be undertaken, and by who, will be outlined in more detail in the Environmental Report.

It should be noted that there are in effect three types of objectives of relevance to the SEA process:

- Objectives of the Plan, which may overlap with some of the SEA objectives
- External Objectives for which Responsible Authorities need to have regard independently from the Plan objectives
- SEA Objectives, devised to test the environmental effects of the plan or to compare the effects of alternatives.

As part of this SEA exercise two assessments will be carried out:

- Examine the internal compatibility of the SEA objectives to identify potential areas of conflict in relation to each objective in order to highlight conflicts so that subsequent decisions can be well based.
- Examine the compatibility of the SEA objectives and the Plan objectives to identify potential areas of conflict between the Plan and the SEA

4.1.2 Development of SEA environmental objectives

SEA environmental objectives have been developed having regard to the SEA Planning Guidelines, the SEA Directive and the Environmental Report for the Draft Kilkenny County Development Plan 2014 - 20.

The objectives are based on the environmental topics set out in Annex 1 (f) of the SEA Directive, which might be significantly impacted upon by the CDP. These include but are not confined to: biodiversity (flora &fauna), population, human health, geology / soil, water, air / climatic factors, material assets, cultural heritage / landscape and the interrelationship between n these factors.

The effects on these topics should address positive and negative, short, medium and long-term, permanent and temporary, cumulative and synergistic impacts. As the SEA Directive only requires the identification of objectives that are relevant to the Plan this element focused on reducing this indicative list to the more pressing environmental objectives.

SEA environmental objectives have therefore been developed by applying the above documents / policy to the environmental constraints in the baseline assessment.

These environmental constraints were identified through a review of the baseline information for Callan:

- Limited waste water treatment capacity
- Noise and air quality impact relating to the N76 and town centre
- Water bodies in the town that are possibly at risk of not achieving good status.

- Lack of additional capacity exists in terms of water supplies,
- Relatively high levels of deprivation
- Widespread cultural heritage and significant areas of potential archaeological interest
- The presence of designated biodiversity sites which may be sensitive to impacts of future development
- Existing areas of flood risk and future implications of climate change

4.1.3 SEA Objectives

Following on from the identified environmental constraints, SEA Objectives have been formulated as follows:

1. Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development
2. Improve the socio-economic profile of Callan and protect material assets
3. Prevent pollution and contamination of groundwater
4. Protect and improve river water quality in Callan
5. Protect and improve water quality and supply
6. Reduce vulnerability to effects of climate change, including water management
7. Protect and conserve Callan's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows
8. Protect and enhance valued natural and historic landscapes and features within them
9. Protect and enhance soil and/or air quality

4.1.4 Development of SEA Indicators

The purpose of indicators is to monitor the effectiveness of the Plan in meeting the SEA environmental objectives and targets. The development and selection of the SEA indicators will be based on:

- Ensuring consistency, where appropriate, with the indicators proposed within the Environmental Report of the Draft Kilkenny County Development Plan
- Identifying existing environmental problems, which will inform the development of SEA objectives and indicators
- A limited number of objectives and indicators will be used, which will keep the assessment and monitoring manageable and strategic

Ultimately they will also be determined by the availability of data and monitoring of this data that takes place.

4.1.5 SEA Objectives and Indicators

Table 4-1 matches SEA objectives to suitable indicators for the measurement and monitoring of the effectiveness of the plan. Where appropriate, indicators have been taken from the Environmental Report for the Draft Kilkenny County Development Plan 2008 – 2014 in order to avoid duplication.

Table 4-1
SEA Objectives

Ref	Environmental Objective	Indicator	SEA Topic Area
1 BIO	Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development	Loss of habitats and species (CDP)	Biodiversity, flora and fauna
2 HEA	Improve the health and wellbeing of the population in Callan including relevant environmental health issues re air quality and noise	Deprivation index No. of complaints re noise Air quality.	Population and Human Health
3 WAT	Prevent pollution and contamination of groundwater	Faecal Coliform counts per 100ml of groundwater (CDP) New developments granted permission which cannot be adequately served by the current wastewater treatment plant	Water
4 WAT	Protect and improve river water quality in Callan	Biotic Quality Rating (Q value) (CDP)	Water
5 WAT	Protect and improve water supply	Levels of E-Coli present in drinking water Developments granted permission which cannot be adequately service by current water supply	Water and Human Health
6 CLI	Adapt and mitigate the effects of climate change, including flood risk	Developments granted permission on flood plain / unauthorised development on floodplain Recorded flooding episodes No. of developments where energy supplied by renewable energy sources % of those travelling to work, school or college using a car	Climatic factors / Material Assets
7 HER	Protect and conserve Callan's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows	Number of unauthorised developments resulting in full or partial loss of cultural heritage (CDP) No. of vacant structures on	Cultural Heritage

Ref	Environmental Objective	Indicator	SEA Topic Area
		the RPS	
8 LAN	Protect and enhance valued natural and historic landscapes and features within them.	Number of developments granted / unauthorised conspicuous developments located within sensitive landscapes (CDP)	Landscape
9 SOIL	Protect and enhance soil	% of development on brownfield land	Soil

5.0 Assessment of Plan Alternatives

The assessment of development options and alternatives is a legal requirement under the SEA Directive. Under Article 5 of the SEA Directive, the Environmental Report should consider reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme and the significant environmental effects of the alternatives selected.

Alternatives must be reasonable, realistic and capable of implementation, and should represent a range of different approaches within the statutory and operational requirements of a plan. However, the position of the plan within the decision making hierarchy predetermines the scope of strategic alternatives available. The Callan Local Area Plan is framed by the policy context set by the higher more strategic levels of plan making, such as the South East Regional Planning Guidelines and the Kilkenny County Development Plan. Despite this, rational choices need to be made and demonstrated at the level of each plan.

This chapter provides a brief description of each scenario, compares each scenario against the environmental objectives and outline the reasons for selecting the preferred alternative.

5.1.1 Plan Scenarios

Taking in account the higher level policy constraints, the following strategic options for the future development of Callan have been considered:

- Alternative 1: Continued consolidation. Concentrated growth mainly into the existing urban centre of Callan, with little growth being allocated to rural areas. Access to existing infrastructure is a guiding principle of this approach.
- Alternative 2: Dispersed Growth or 'Unlimited development' sets out a scenario where the future growth in Callan reflects requests for additional zoning.
- Alternative 3: Selection of new growth areas. This alternative prioritises areas outside the existing urban centre of Callan, such as Windgap and Tullamaine.

Alternative 1: Continued consolidation

Alternative 1 concentrates growth mainly into the existing urban centre of Callan, with little growth being allocated to rural areas. Access to existing infrastructure is a guiding principle of this approach.

This alternative concentrates populations into the existing centre of Callan, 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. This alternative does not support the rural population, which may lead to a population decline in rural areas.

Alternative 2: Dispersed growth

This scenario is one which places very few restrictions on development throughout the Plan area. The zoned land requirement 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 outside the existing urban centre.

Alternative 2 envisages uncoordinated and potentially inappropriate lands zoned for development. Significant levels of incremental development i.e. ribbon development along roads within the plan area would result. Development would occur in unserviced or in insufficiently serviced areas and it would more than likely lead to a highly dispersed settlement pattern.

This would undermine the vibrancy of Callan town centre and would lead to a significant shift towards rural rather than urban development. Ultimately it could lead to a loss of population base within Callan and consequently a loss of critical mass for the development of key services and facilities. Dispersed development patterns would have negative effects on water quality (which is identified as a key Environmental Objectives 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.

The environmental consequences of this alternative are potentially significant. 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.

The provision of key services such as water supply and wastewater treatment would also become costly in both financial and environmental quality terms. The population base in Callan would gradually weaken.

Alternative 3: Selection of new growth areas

This alternative prioritises areas outside the existing urban centre of Callan, such as Windgap and Tullamaine. Both these small places would be subject to large levels of 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.

In this alternative, large growth areas would be formed around both Windgap and Tullamaine. Directing growth into these smaller centres would detract from the emphasis on Callan as a district town, and would result in an increase in unsustainable travel patterns and a negative effect on air quality. As Windgap and Tullamaine 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 that is unserviced. This would have negative environmental effects through the increased replacement of agricultural land by artificial surfaces. From a social and economic perspective, the viability of existing services in Callan would be undermined by the dispersal of population.

5.1.2 Comparison of Alternatives

The current Plan includes provision for employment lands, e.g. industrial , general business, and residential zoning however the other alternatives do not provide for the review of zoning objectives in line with changing needs and requirements for the town. This approach may not serve to make adequate provisions for future investment and thus hinder the town's prospects of improving its socio-economic indicators.

The location of new development is likely to have a range of effects which have been evaluated and compared with respect to the environmental objectives. This assessment has primarily focused the general location of new development rather than any detailed policy objectives which may be reasonably be expected to be included within a Local Area Plan.

The evaluation concludes that there are a number of potential effects associated with all development alternatives which are summarised below:

- Reduction in water quality (this will depend on the provision of additional waste water treatment facilities);
- Potential lack of drinking water capacity may constrain new development and indirectly impact on the health and wellbeing of the population in the town;
- Development on greenfield sites will result in the replacement of natural and semi-natural habitats with artificial surfaces and the loss of trees and hedgerows;

- Where development in close proximity to the Kings River it may result in increased flood risk, subsequent damage to material assets and impact on designated biodiversity sites;
- Reduced quality of groundwater and river quality;
- A higher reliance on private transport with subsequent impacts on air quality and emissions;
- New development resulting in the loss of soil;
- Cultural heritage with reference to the area of archaeological potential, structures recorded on the record of protected structures, national inventory of architectural development and national monuments; and
- Continued dereliction in areas of the town centre contributing to underuse of historic buildings.

Proposed Plan Strategy

The significance of a number of the effects outlined above is more likely as quantum of development increases. As Alternative 1 closely reflects population projections and local need as well as concentrating development where existing infrastructure is available, this alternative is considered more sustainable and performs best again environmental objectives. See also Table 5-1 for an assessment of these alternatives against SEA objectives.

Table 5-1
Assessment of Alternatives against SEA objectives.

	Alternative		
	1. Continued Consolidation	2. Dispersed Growth	3. Selection of New Growth areas
Biodiversity, forna and flora			
Conserve and enhance the diversity of habitats and species, including designated sites which may be sensitive to development			
Population and Human Health			
Improve the health and wellbeing of the population in Callan including relevant environmental health issues re air quality and noise			
Water			
Prevent pollution and contamination of groundwater			
Protect and improve river water quality in Callan			
Protect and improve water supply			
Climate Factors / Material Assets			
Adapt and mitigate the effects of climate change, including flood risk			
Cultural Heritage			
Protect and conserve Callan's cultural heritage, including areas of archaeological interest, protected structures, important monuments and sites and hedgerows			
Landscape			
Protect and enhance valued natural and historic landscapes and features within them.			
Soil			
Protect and enhance soil			

6.0 Evaluation of the Likely Significant Effects of the Draft LAP

6.1.1 Introduction

Reasons For Selecting The Preferred Strategy

The evaluation of draft LAP policies involves identifying potential changes to the baseline environment as a result of the implementation of the LAP, and describing these changes in terms of their magnitude, geographic scale, timing, duration, permanence and positive or negative effect.

The assessment has been informed by the baseline information and associated GIS mapping which has highlighted areas of vulnerability. GIS has also been useful in identifying where cumulative impacts may occur as a result of the plan. Conclusions resulting from these matrices have been set out in the Non-Technical Summary.

The preferred plan strategy sets out specific development objectives, which are subject to assessment in the context of each of the environmental protection objectives. An assessment has also been carried out on the detailed policies which flow from the strategic objectives. This has been completed through the use of matrices set out in Table 6.3.

The table includes a column headed comments which indicate the mitigation measures, any changes to the wording of the development objective which may be required and any assumptions used in making judgements on the significance of effects.

Significance of the Effects

Significance have been assessed in terms of the type (secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects) and scale (local / regional national) of development envisaged by the plan and the sensitivity of the receiving environment. Detailed information on the type and scale of the effect have informed conclusions as to whether the effect envisaged is considered to be 'significant' or 'insignificant'.

6.2 Development Strategy

The Draft Callan Local Area Plan includes the following vision for the town in 2025:

'By 2025, Callan will be a vibrant low carbon district town approaching a population of 2,800 people supported by a consolidated town centre and employment centred on retail, creative industries, arts, tourism and community service sectors as well as a strong local industrial sector. Enhanced north – south connections for pedestrians and cyclists will be provided. Focusing on Bridge Street, these measures will be combined with a range of traffic management proposals including additional off street parking which will improve vitality of the town centre and Bridge Street in particular as well as supporting healthy living. Historic landmarks and a series of improved public spaces will provide a focus for new activities. A masterplanning approach to design will create high quality sustainable low carbon and adaptable residential areas that are well integrated with existing neighbourhoods. All new development will respect and enhance the character and quality of the existing built and natural environment in Callan.'

6.3 Proposed Zoning

The Draft LAP includes a Zoning Objectives Map and Development Objectives Map which sets out Kilkenny County Council's objectives for the use and development of land within Callan in accordance with local need, the vision and population projections of the Draft Plan.

Recent national policy provisions set out in the National Planning Framework have been taken on board in formulating the vision, policy and objectives in the draft plan. The close alignment of residential zoning

requirements to the projected population increase has resulted in the proposed level of residential zoning in the Zoning and Objectives Map (Figure 6.1).

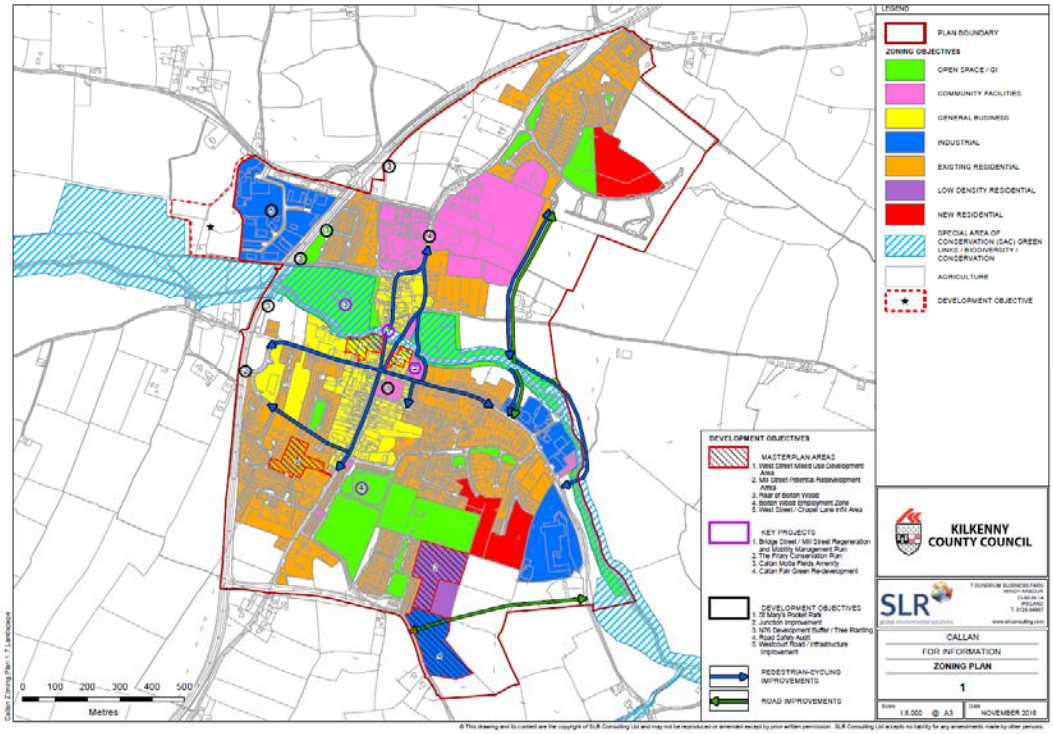


Figure 6.1
Draft Plan - Zoning and Development Objectives Map

6.4 Population Projections

The proportion of the County Kilkenny population living in urban areas is gradually increasing. Callan is designated as a district town and its population is growing in line with this trend. The population of Callan town in 2016 was 2,475, which represents 2.49% of the overall County population.

The population allocation for Callan was derived by requiring it to at least maintain this proportionate share of the County's population as established by the 2016 census. On this basis and as outlined in Table 6.1 Callan's population is projected to increase by 275 and the LAP 2019-2025 requires zoning for 98 households. As set out in Table 6.2, 4.91 hectares of residential development land is required. This is based on residential density of 20 units to the hectare as referred to in Chapter 12: Requirements for Development of the Kilkenny County Development Plan 2014 -2020.

Table 6.1
Census Records from 1996-2016 & Population Projection to 2026

Population	1996	2002	2006	2011	2016	Population Projection - 2026
Callan	1,224	1,325	1,771	2,330	2,475	2,750
Kilkenny County	75,336	80,399	87,558	95,419	99,118	110,000

Table 6.2
Land Requirement

Projections	Population Increase	Units Required (2019-2025)	Area Required
2026	275	98 (household size 2.8)	4.91 ha
Social Housing		57 units	
Requirement		**117**	

6.5 LAP Objectives Appraisal

Table 6.3
Evaluation of the Likely Significant Effects of the Draft LAP

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent, temporary, positive and negative effects and scale (local / regional / national)
	1 BIO	2 HEA	3 WAT	4 WAT	5 WAT	6 CLI	7 HER	8 LAN	9 SOIL	
Strategic Objectives										
Strategic Objective 1: It is an objective of Kilkenny County Council to identify the individual vacant sites in the town for regeneration and housing and establish and maintain a register of vacant sites (entitled the vacant sites register) in the plan area for the purpose of the Vacant Site Levy (Urban Regeneration and Housing Act 2015).	✓	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective will have positive impacts generally in that it will reduce greenfield development thus protecting habitats and species. In encouraging the re use of brownfield land, it will also have a positive impact on built heritage and the historic landscape (7) (8). However, some vacant sites and buildings are located in areas of flood risk. (6) Recommendation: A flood risk assessment will be required at some locations and at these locations vulnerable uses may not be appropriate.
Strategic Objective 2: It is an objective of Kilkenny County Council to support the	×/O	✓	O	O	O	×/O	O	O	O	2) Improving the town centre will have a positive impact on the local

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
delivery of projects submitted as funding applications to the Rural Regeneration and Development Fund.										economy, however some projects are located in close proximity of the Kings River (River Nore & River Barrow SAC) and in areas of flood risk. Recommendation: Projects located close to the Kings River will require screening for appropriate assessment and flood risk assessment.
Strategic Objective 3: It is an objective of Kilkenny County Council to support the development and implementation of the Town Centre Living – Pilot Project.	O	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective will have a positive impact on health and wellbeing. However, some areas of the town centre are subject to flood risk. (6) Recommendation: This project should be informed by a flood risk assessment. At some locations vulnerable uses, including residential uses may not be appropriate.
Strategic Objective 4: It is an objective of Kilkenny County Council to implement land use zoning objectives for the plan area as set out in Map 01 and Appendix 1 of the Draft Plan.	×/O	✓	×/O	×/O	×/O	O	O	O	O	An increase in population will improve economic performance within the town centre (2). This will result in an increased demand for water, waste water treatment and other waste services (3,4,5). It may also increase the number of people using the open space close to the Kings River (River

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										Nore & River Barrow SAC) as a recreational resource, which may in turn increase disturbance. (1) Recommendation: Ensure adequate infrastructure is in place prior to development. The issue of disturbance has been considered by the Natura Impact Statement.
The core strategy for Callan LAP is to: To provide for the proportionate growth of Callan maintaining its 2.5% of the County's population allocation to 2026 in accordance with the National Planning Framework and the County Development Plan Settlement Strategy.	×/O	✓	×/O	×/O	×/O	O	O	O	O	An increase in population will improve economic performance within the town centre (2). This will result in an increased demand for water, waste water treatment and other waste services (3,4,5). It may also increase the number of people using the open space close to the Kings River (River Nore & River Barrow SAC) as a recreational resource, which may in turn increase disturbance. (1) Recommendation: Ensure adequate infrastructure is in place prior to development. The issue of disturbance has been considered by the Natura Impact Statement.
Residential Development Objectives										

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
RD1: It is a policy of the Council to ensure that sufficient zoned land is available at appropriate locations in Callan to satisfy the housing needs of the town over the period of the plan.	×/O	✓	×/O	×/O	×/O	O	O	O	O	An increase in population will improve economic performance within the town centre (2). This will result in an increased demand for water, waste water treatment and other waste services (3,4,5). It may also increase the number of people using the open space close to the Kings River (River Nore & River Barrow SAC) as a recreational resource, which may in turn increase disturbance. (1) Recommendation: Ensure adequate infrastructure is in place prior to development. The issue of disturbance has been considered by the Natura Impact Statement.
RD2: To make provision for serviced sites with appropriate infrastructure to enable people build their own homes.	×/O	✓	×/O	×/O	×/O	O	O	O	O	An increase in population will improve economic performance within the town centre (2). This will result in an increased demand for water, waste water treatment and other waste services (3,4,5). It may also increase the number of people using the open space close to the Kings River (River Nore & River Barrow SAC) as a recreational resource, which may in turn increase disturbance. (1)

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										Recommendation: Ensure adequate infrastructure is in place prior to development. The issue of disturbance has been considered by the Natura Impact Statement.
RD3: To implement the Vacant Sites provisions of the Urban Regeneration and Housing Act 2015 as amended.	✓	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective will have positive impacts generally in that it will reduce vacancy in the town centre discourage greenfield development thus protecting habitats and species. In encouraging the re use of brownfield land, it will also have a positive impact on built heritage and the historic landscape (7) (8). However, some vacant sites and buildings are located in areas of flood risk. (6) Recommendation: A flood risk assessment may be required at some locations.
Residential Development Management Objectives										
RD DMO 1: In accordance with policies set out in the National Planning Framework, it is an objective of Kilkenny County Council to encourage the appropriate redevelopment of brownfield and infill	×/O	✓	×/O	×/O	×/O	O	O	O	O	(1) (2) (9) This objective will have positive impacts generally in that it will reduce greenfield development thus protecting habitats and species. In encouraging the re use of

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
sites for residential uses within the LAP boundary subject to compliance with the relevant development management standards as set out in the County Development Plan.										brownfield land, it will also have a positive impact on built heritage and the historic landscape (7) (8). However, some vacant sites and buildings are located in areas of flood risk. (6) Recommendation: A flood risk assessment may be required at some locations.
RD DMO 2: To ensure that a good mix of housing types and sizes is provided to meet the future needs of the population of the town.	O	✓	O	O	O	O	O	O	O	Providing a mix of housing types will be beneficial for health and wellbeing. Recommendation: Ensure development adheres to development management objectives
Employment - Objectives										
EO1: It is an objective of this Local Area Plan to facilitate an increase in employment locally in tandem with the population growth rate.	O	✓	×/O	×/O	×/O	O	O	O	O	An increase in employment will improve economic performance within the town centre (2). This increase will also require an uplift in terms of water supply, waste water treatment and other waste services (3,4,5). Recommendation: Ensure adequate infrastructure is in place prior to development.

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
EO2: To support the sustainable development of Callan and enhance its capacity to attract new investment in employment, services and public transport for the benefit of the town and its hinterland.	O	✓	×/O	×/O	×/O	✓	O	O	O	An increase in employment in the town will improve economic performance within the town centre (2) and maintain low levels of commuting. The increase will also require an uplift in terms of water supply, waste water treatment and other waste services (3,4,5). Recommendation: Ensure adequate infrastructure is in place prior to development.
EO3: To promote a diverse and sustainable local economy through the designation of sufficient lands for the promotion of employment related uses including facilities to assist SME growth	O	✓	×/O	×/O	×/O	O	O	O	O	An increase in employment in the town will improve economic performance within the town centre (2) and maintain low levels of commuting. The increase will also require an uplift in terms of water supply, waste water treatment and other waste services (3,4,5). Recommendation: Ensure adequate infrastructure is in place prior to development.
EO4: To identify the individual vacant sites in the town for regeneration and housing and establish and maintain a register of vacant sites (entitled the vacant sites	✓	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective should have positive impacts generally in that it will reduce greenfield development thus protecting habitats and species.

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
register) in the plan area.										In encouraging the re use of brownfield land, this objective will also have a positive impact on built heritage and the historic landscape (7) (8). Some vacant sites and buildings are located in areas of flood risk. (6) Recommendation: A flood risk assessment may be required at some locations.
EO5: To encourage the continued improvement of road infrastructure at the Westcourt Industrial Estate to a level that is sufficient to allow the taking in charge of roads and associated infrastructure.	O	✓	O	O	O	O	O	O	O	Improving existing employment areas will attract investment to the town. (2) Recommendation: Ensure development adheres to development management objectives.
EO6: Encourage a diversity of uses in the town centre throughout the day and evening.	O	✓	O	O	O	O	O	O	O	Improving the evening economy will attract more people to the town centre and improve the sense of community. (2) Recommendation: Ensure an appropriate balance of uses is maintained.
Town Centre/ Retail Objectives										
TCO1: Vitality and Viability It is an objective of the County Retail	×/O	✓	O	O	O	×/O	O	O	O	2) Improving the town centre should have a positive impact on the local

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
Strategy and the Local Area Plan to ensure that the vitality and viability of district towns is maintained and enhanced. To achieve this, the Plan will support: • Callan town as the focus of all new retail development in appropriate scale and location; • development that encourages the appropriate re-use, regeneration of derelict, vacant and underutilised sites and in particular vacancies and underused sites on Green Street, Bridge Street and Mill Street; • the sensitive redevelopment of a number of historic landmark buildings in the town; and • the sequential approach and the assessment criteria, outlined in the County Development Plan, which will be applied to any proposals for retail development within Callan.										economy. Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment. In areas of flood risk, a flood risk assessment will also be necessary.

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
TCO2: The County Retail Strategy sets out the role and function of Callan within the retail hierarchy providing guidance on the distribution of new floorspace. The Retail Strategy defines Callan as a Tier 1 Level 2 Sub County Town. The distribution of new floorspace should be linked to Callan's role in the retail hierarchy for the county and should be appropriate in scale and character to the hierarchical role of the centre. The type of shopping that is appropriate to this level of the hierarchy includes middle convenience and (tourism related) comparison. For retail proposals above the 500m² gross floorspace threshold a retail impact assessment will be required in accordance with County Retail Strategy.	×/O	✓	O	O	O	×/O	O	O	O	2) Improving the town centre will have a positive impact on the local economy. Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment. In areas of flood risk, a flood risk assessment will also be necessary.
TCO3: Addressing town centre dereliction and vacancy, on upper bridge street in particular will be supported by the preparation of the Bridge Street/Mill Street Regeneration and Mobility Management Plan.	✓	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective will have positive impacts generally in that it will reduce greenfield development thus protecting habitats and species. In encouraging the re use of brownfield land, this objective will also have a positive impact on built heritage and the historic landscape (7) (8). Recommendation: Projects that are

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment. In areas of flood risk, a flood risk assessment will also be necessary.
TCO4: It is an objective of Kilkenny County Council to support the work of the town team and assist with the implementation of the town renewal plan and the town centre living pilot project.	O	✓	O	O	O	O	O	O	O	Support for community based town centre renewal will have a positive impact on health and wellbeing. Recommendation: n/a
TCO5: It is an objective of Kilkenny County Council to prepare an up-to-date retail strategy during the lifetime of the plan. The strategy will include current figures on footfall, shopping patterns and expenditure capacity.	O	✓	O	O	O	O	O	O	O	2) Improving the town centre will have a positive impact on the local economy. Recommendation: n/a
TCO6: The delivery of projects/recommendations identified within the town centre health check, where these are compatible with the proper planning and sustainable development of the town.	O	✓	O	O	O	O	O	O	O	2) Improving the town centre will have a positive impact on the local economy as well as health and wellbeing. Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment. In areas of flood risk, a

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										flood risk assessment will also be necessary.
TCO7: To support the delivery of projects submitted under the Rural Regeneration and Development Fund, where details are compatible with the proper planning and sustainable development of the town. Projects include: • Bridge Street/Mill Street Regeneration and Mobility Management Plan • The Friary Conservation Plan • Callan Motte Fields Amenity • Callan Fair Green Re-development	O	✓	O	O	O	O	O	O	O	2) Improving the town centre will have a positive impact on the local economy as well as health and wellbeing. Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment. In areas of flood risk, a flood risk assessment will also be necessary.
TCO8: Ensuring accessibility of the retail area by a range of transport modes.	O	✓	O	O	O	✓	O	O	O	(1) Improving access for all modes of transport will have a positive impact on the town centre and will help to (6) mitigate against the effects of climate change where walking and cycling is successfully encouraged. Recommendation: n/a
TCO9: Prepare a car parking strategy, focusing on the management of existing on street Car Parking on Green Street and the provision of additional off street car	O	✓	O	O	O	O	×	O	O	(1) Improving access for all modes of transport will have a positive impact on the town centre. Design measures will be required to ensure that any

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
parking in and around the town centre.										adverse effects on the setting of national monuments or protected structures is avoided. Recommendation: In preparing this strategy urban design and conservation input should be sought.
TCO10: Create an attractive and safe town centre for pedestrians/cyclists.	O	✓	O	O	O	✓	O	O	O	(1) Improving access for pedestrians/cyclists will have a positive impact on the town centre and will help to (6) mitigate against the effects of climate change. Recommendation: n/a
TCO11: Provide better pedestrian connections along Chapel Lane, which is the main pedestrian route linking Aldi and Green Street.	O	✓	O	O	O	✓	O	O	O	(1) Improving pedestrian access will have a positive impact on the town centre and will help to (6) mitigate against the effects of climate change by reducing car use. Recommendation: n/a
Local Food Economy Objectives										
LFEO1: It is an objective of Kilkenny County Council to encourage and support • strong reciprocal relationships between local producers and the local	✓	✓	✓	✓	✓	✓	O	O	✓	Growing and sourcing food locally has a number of potential benefits. From supporting the local economy, to reducing food miles and improving resilience to the effects of climate change. If care is taken in relation to

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• retail/ catering enterprises, • growth of local shops and restaurants, coffee/ tea shops both opening and offering local food and beverages. • the integration of the 'Callan's' food culture into the tourism offerings of the County as a whole.										the use of pesticides and impact on soil, further benefits accrue for water and soil quality. (1) (2) (3) (4) (5) (6) (9) Recommendation: n/a
LFEO2: It is an objective of Kilkenny County Council to consider the potential of this sector as part of any emerging regeneration strategy for the town centre, particular where this involves the re use of historic landmark structures.	O	✓	O	O	O	O	✓	✓	O	Improving the evening economy will attract more people to the town centre improving footfall as well as the sense of community. (2) Recommendation: Ensure an appropriate balance of uses.
LFE03: It is an objective of Kilkenny County Council to investigate the feasibility of developing a local food hub on Bridge Street	O	✓	O	O	O	O	✓	✓	O	Improving the food economy and active uses on Bridge Street will attract more people to the town centre improving footfall as well as the sense of community. (2) Recommendation: n/a
Health Facilities										
HFO1: It is an objective of Kilkenny County Council to support and implement proposals that will benefit public health,	O	✓	O	O	O	✓	O	O	O	Supporting public health and improving health and wellbeing are mutually supporting objectives.

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particularly where this meets a defined local need and does not involve displacement of existing services.										Recommendation: n/a
Housing and Community Objectives										
HC1: It is an objective of this LAP to consolidate residential development within the town boundary, linking delivery of new development to the provision of required services and where appropriate applying the sequential approach to the development of housing land.	✓	✓	O	O	O	×	✓	✓	✓	(1) (2) (9) This objective will have positive impacts generally in that it will reduce greenfield development thus protecting habitats and species. In encouraging the re use of brownfield land, this objective will also have a positive impact on built heritage and the historic landscape (7) (8). Linking delivery of new development to the provision of required services will protect river and groundwater quality and will also help to maintain an adequate supply of water. Recommendation: Ensure adequate infrastructure is in place prior to development.
HC2: Proposals for residential development should have regard to the Guidelines on Sustainable Residential Development in Urban Areas, and in particular, the objective of limiting the size	O	O	✓	✓	✓	O	✓	O	O	Controlling/minimising the size of singular developments will help to maintain a sense of character and community as well as minimising any adverse effect on water supply and

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
of individual proposals to 10% - 15% of the existing housing stock. In Callan, the existing housing stock is approximately 1,032 units, which provides a basis for an indicative maximum range of 103 – 155 units, for development proposals.										waste water services. (3) (4) (5) (7) Recommendation: n/a
HC3: Housing on Lands Zoned for Agriculture Land within the agricultural zone will not be considered for intensive commercial or residential development during the lifetime of this LAP. This is to allow for the strategic expansion of the plan area, and to prevent urban generated development which would interfere with the operation of farming and prejudice the future planning and development of the area. On lands zoned for agriculture within the development boundary of the Callan LAP, housing will be restricted (for their own housing need) to the following categories of persons: • Persons whose primary employment is in agriculture, horticulture, forestry or bloodstock, or other rural based activity, in the area	O	✓	O	O	O	✓	O	O	O	Supporting the agricultural sector locally is of benefit to the wider economy (2) and improves resilience to climate change. Recommendation: Ensure developments are adequately serviced.

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which they wish to build, • Sons and daughters of the landowner, all of whom are long standing residents of the "Agricultural" zoned rural area, providing for their first home, • Persons who are long standing residents in the "Agricultural" zoned area, providing for their first home.										
HC4: The Local Area Plan will ensure that sites are reserved for community facilities as appropriate and to seek to remedy the deficiency in existing developed areas. Where possible, the provision of community facilities will be linked to the increases in the residential population.	O	✓	O	O	O	O	O	O	O	Improving the availability of community facilities is of benefit to health and wellbeing. (2) Recommendation: n/a
HC5: It is an objective of Kilkenny County Council to facilitate the amalgamation of secondary schools St. Brigid's College and Colaiste Eamonn Ris.	O	✓/ ×	O	O	O	O	O	O	O	Improving the availability of community facilities is of benefit to health and wellbeing. (2) Schools also have the potential to generate significant levels of traffic. Recommendation: Measures to enhance walking and cycling as well as road safety are required.

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HC6: It is an objective of this Local Area Plan to support the provision of a centrally located library space alongside the emergent creative hub of Callan within the landmark building of the Friary Complex.	×/O	✓	O	O	O	O	✓	✓	O	Providing a centrally located library space is of benefit to health and wellbeing. (2) The reuse of a protected structure is also of benefit to Callan's cultural heritage and historic landscape. The Friary complex is located in close proximity to the Kings River (River Nore and River Barrow SAC). Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate assessment and flood risk assessment.
HC7: It is an objective of the Plan to promote the sustainable development of vacant residential and regeneration sites in Callan through the application of the Urban Regeneration and Housing Act 2015, Vacant Site Levy, on lands zoned 'General Business' and 'Residential'.	✓	✓	O	O	O	O	✓	✓	✓	(1) (2) (9) This objective will have positive impacts generally in that it will reduce greenfield development thus protecting soil as well as habitats and species. In encouraging the re use of brownfield land, this objective will also have a positive impact on built heritage assets and the historic landscape (7) (8). Some vacant sites and buildings are located in areas of flood risk. (6) Recommendation: Projects that are located in close proximity of the Kings

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										River (River Nore & River Barrow SAC) will require screening for appropriate assessment and flood risk assessment.
HC8: It is an objective of the Plan to support the actions set out in Kilkenny Age Friendly County Strategy 2017 – 2022 where practicable.	O	✓	O	O	O	O	O	O	O	Improving the functionality and usability of buildings and public spaces for all members of society results in adaptable and sustainable design. It improves health and wellbeing for older people in particular. (2) Recommendation: n/a
HC9: It is an objective of the Plan to allow for the development of 10 community housing units at Westcourt.	O	✓	O	O	O	O	O	O	O	Improving the availability of community based housing is of benefit to health and wellbeing. (2) Recommendation: This proposal is located in close proximity of the Kings River (River Nore & River Barrow SAC) and will require screening for appropriate assessment.
Housing and Community Development Management Objectives										
HCDMO 1: To promote Universal Design and Lifetime Housing in accordance with best practice and the policies and principles contained in Building for Everyone: A Universal Approach and	O	✓	O	O	O	O	O	O	O	Promoting universal design and availability of lifetime homes creates adaptable and sustainable design. It improves health and wellbeing. (2)

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Sustainable Residential Development in Urban Areas and its associated document Urban Design Manual: A Best Practice Guide.										Recommendation: n/a
HCDMO2: In terms of design and layout, new residential developments of over 3-4 units should submit design statements in conjunction with applications for permission, explaining the principles and concept behind the design, demonstrating how the proposal relates to the wider context and meets urban design objectives and principles.	✓	✓	✓	✓	O	✓	✓	✓	O	Improving design has multiple benefits and creates adaptable and sustainable design and successful place. It also improves health and wellbeing. (1) (2) (3) (4) (6) (7) (8) Recommendation: n/a
HCDMO 3: To facilitate the development of housing for older people in order to improve the quality of living for our ageing population. Any new residential development should focus on complying with the Universal Design approach, so as to facilitate older persons' living.	O	✓	O	O	O	O	O	O	O	Promoting housing for older people creates adaptable and sustainable design. It improves health and wellbeing. (2) Recommendation: n/a
Built Heritage Development –Objectives										
BNH1: To encourage and apply flexibility in order to secure the appropriate reuse, renovation and rehabilitation of a Protected Structure.	O	✓	O	O	O	O	✓	✓	O	Promoting the re use of the historic landscape will be of benefit to cultural heritage. (7) (8) Recommendation: A flood risk

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										assessment may be required at some locations and vulnerable uses may not be appropriate in areas of high risk.
BNH2: To protect and enhance the historic landscape and character of Callan.	O	✓	O	O	O	O	✓	✓	O	Promoting the re use of the historic landscape will be of benefit to cultural heritage. (7) (8) Recommendation: A flood risk assessment may be required at some locations and vulnerable uses may not be appropriate in areas of high risk.
BNH3: To make additions to the Record of Protected Structures as appropriate using the provisions of Part IV of the Planning and Development Act 2000 as amended..	O	✓	O	O	O	O	✓	✓	O	Protecting the historic buildings will be of benefit to cultural heritage and health and wellbeing. (2) (7) (8) Recommendation: n/a
BNH 4: Kilkenny County Council considers that the historic core of Callan town comprises an area of special architectural, archaeological, historic interest, presents an attractive townscape and is worthy of protection. It is therefore proposed to continue to designate the area indicated in Figure 3 of the Draft Plan, as an Architectural Conservation Area.	O	O	O	O	O	O	✓	✓	O	Protecting the historic buildings will be of benefit to cultural heritage and health and wellbeing. (2) (7) (8) Recommendation: n/a
BNH5: It is the policy of the Council to support the protection of archaeological	O	O	O	O	O	O	✓	✓	O	Promoting the re use of the historic buildings will be of benefit to the

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
heritage through preservation in situ of, or preservation by record of recorded monuments and any other archaeological features in Callan.										historic landscape and cultural heritage. (7) (8) Recommendation: n/a
BNH6: It is an objective of Kilkenny County Council to support the National Policy on Town Defences which sets out national policy for the protection, preservation and conservation of the defences of towns and cities.	O	O	O	O	O	O	✓	✓	O	Promoting the re use of the historic buildings will be of benefit to the historic landscape and cultural heritage. (7) (8) Recommendation: n/a
Built Heritage Development – Development Management Objectives										
BHDM1: It is an objective of Kilkenny County Council to require an architectural heritage assessment/architectural impact assessment report to be submitted with all applications related to Protected Structures. This should be prepared in accordance with Appendix B of the "Architectural Heritage Protection, Guidelines for Planning Authorities".	O	O	O	O	O	O	✓	✓	O	Protecting historic buildings will be of benefit to the historic landscape and cultural heritage. (7) (8) Recommendation: n/a
BHDM2: It is an objective of Kilkenny County Council to encourage the retention and restoration of in a manner which respects its special character and improves that character with appropriate new developments when opportunities	O	✓	O	O	O	✓	✓	✓	O	Protecting historic buildings will be of benefit to the historic landscape and cultural heritage. (7) (8) There are also wider benefits for the economy and for mitigating against climate change as it involves the use of

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
arise.										existing buildings. Recommendation: n/a
BHDM 3: It is an objective of Kilkenny County Council to require an assessment of the archaeological implications of all development proposals within the zone of archaeological potential.	O	O	O	O	O	O	✓	✓	O	Protecting and preserving archaeological assets will be of benefit to the historic landscape and cultural heritage. (7) (8) Recommendation: n/a
BHDM 4: To support the sensitive restoration of protected structures and their attendant grounds and operate flexibly as regards facilitating the ongoing use of these buildings subject to good conservation principles.	O	✓	O	O	O	✓	✓	✓	O	Protecting historic buildings will be of benefit to the historic landscape and cultural heritage. (7) (8) There are also wider benefits for the economy and for mitigating against climate change as it involves the use of existing buildings. Recommendation: n/a
BHDM 5: To protect and preserve items of both architectural and archaeological heritage from inappropriate development that would adversely affect and/or detract from the interpretation and setting of these sites. These include recorded monuments, structures contained in the Record of Protected Structures, the National Inventory of Architectural Heritage and structures within the	O	O	O	O	O	O	✓	✓	O	Protecting architectural and archaeological heritage from inappropriate development will be of benefit to the historic landscape and cultural heritage. (7) (8) Recommendation: n/a

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Architectural Conservation Area.										
BHDM 6: Require consultation with the Council's Heritage and Conservation Officers to ensure the protection of archaeological heritage of the town and the associated historic landscape. This includes terrestrial archaeology and underwater archaeology for in river works.	O	O	O	O	O	O	✓	✓	O	This objective will be of benefit to the historic landscape and cultural heritage. (7) (8) Recommendation: n/a
BHDM 7: The recognition of embodied energy found within the historic buildings within the town, as an energy saving source.	O	O	O	O	O	✓	✓	✓	O	The reuse of existing buildings will reduce the requirement for resources. This will help mitigate against climate change. Recommendation: n/a
Natural Heritage and Biodiversity - Objectives										
NHB1: In seeking to protect and enhance the natural environment, Kilkenny County Council will seek to; • Protect natural heritage sites designated in National and European legislation, specifically the River Barrow and Rivers Nore SAC (See also NH2); • Provide for an appropriate riverside buffer of circa 20m that protects the integrity of the SAC	✓	O	O	O	O	O	O	O	O	This objective will protect and enhance biodiversity. (1) Recommendation: n/a

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and assists in the management of flood risk; • Protect and conserve non-designated habitats and species; and • Protect and incorporate existing biodiversity features such as trees, hedgerows and surface water features into the design and construction of new development and public realm and enhancing the biodiversity value of existing open spaces. • Where development proposals are made along the riparian corridor, ensure that a condition of consent is to establish a vegetated strip along the river in consultation with the National Parks and Wildlife Service.										
NHB2: It is an objective of Kilkenny County Council to protect and incorporate existing biodiversity features such as hedgerows and surface water features into the design and construction of new development and public realm. Where the loss of the existing features is unavoidable new biodiversity features should incorporate	✓	O	O	O	O	O	O	O	O	This objective will protect and enhance biodiversity. (1) Recommendation: n/a

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native species, and species of local provenance to replace the existing hedgerow.										
NHB3:It is an objective of Kilkenny County Council to retain the character the Motte Field and Abbey Meadow as high value locally important areas for nature conservation and to enhance biodiversity value within these areas where possible.	✓	O	O	O	O	O	O	✓	O	This objective will enhance biodiversity. (1) (8) Recommendation: n/a
NHB4: It is an objective of Kilkenny County Council to ensure best practice is followed as regards tree retention and replacement.	✓	O	O	O	O	O	O	✓	O	This objective will protect and enhance biodiversity. (1) (8) Recommendation: n/a
NHB5: It is an objective of Kilkenny County Council to support the implementation of the Callan River Project under the Town and Village Renewal Scheme. The project will consist of the removal of sediment deposits and associated vegetation that has developed within the river channel in recent years.	×/O	O	O	O	O	O	O	✓	O	This objective has the potential to impact on the Kings River (will be subject of screening for appropriate assessment. (1) (8) Recommendation: Screening for appropriate assessment will be required.
Natural Heritage and Biodiversity - Development Management Standards										
NHB - DM1: The King's River which forms part of the River Barrow and River Nore SAC has considerable potential for to be	✓	O	O	O	O	O	O	✓	O	This objective will protect and enhance biodiversity. (1) (8)

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
used as a recreational asset for the town and the Local Area Plan will seek to promote the natural amenity potential of this site subject to: 10. Protection of this site in accordance with National and European legislation ensuring that any development in or near the SAC will avoid any significant adverse impact on the features for which the site has been designated; 11. Consultation with the prescribed bodies and relevant government agencies when assessing developments which are likely to impact on designated natural heritage sites or those sites proposed to be designated; and 12. The requirement for an appropriate assessment in respect of any proposed development likely to have an impact on a designated natural heritage site, or those sites proposed to be designated.										Recommendation: n/a
NHB – DM2: New development should ensure, including where necessary	✓	O	O	O	O	O	O	✓	O	This objective will protect and

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
through appropriate developer contributions, the efficient and effective use of environmental resources by: 13. Having regard to sustainable energy considerations set out in Department Guidelines on Quality Housing for Sustainable Communities (2007) and Chapter 10 of the County Development Plan; and 14. Through the use of sustainable drainage methods.										enhance biodiversity. (1) (8) Recommendation: n/a
NHB – DM3: It is an objective of Kilkenny County Council to require all new development to be designed in such a way as to maximise energy efficiency. All new development must consider the potential for decentralised energy systems and renewable or low/zero carbon energy. Planning applications should be accompanied by a 'low and zero carbon energy statement' outlining approach to energy efficiency and the use of low and zero carbon technologies.	✓	O	O	O	O	✓	O	O	O	This objective will help to mitigate against climate change. (1) (8) Recommendation: n/a
NHB – DM4: To support and facilitate the development of pedestrian/cycle routes along suitable routes subject to relevant	O	✓	O	O	O	✓	O	O	O	This objective will help to mitigate against climate change and support

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environmental assessments.										healthy lifestyles. (1) (8) Recommendation: n/a
NHB – DM5: To support the development of outdoor leisure activities on lands designated as open space, subject to the protection of landscape character and natural heritage.	O	✓	O	O	O	✓	O	O	O	This objective will help to mitigate against climate change and support healthy lifestyles. (1) (8) Recommendation: n/a
NHB – DM6: Require the incorporation of natural features where appropriate and to protect existing trees and hedgerows which are of amenity or biodiversity value and/or contribute to landscape character, and to ensure that proper provision is made for their protection and management or replacement, when undertaking, approving or authorising development.	✓	O	O	O	O	O	O	✓	O	This objective will protect and enhance biodiversity. (1) (8) Recommendation: n/a
NHB – DM7: To ensure that when approving or authorising development that sufficient information is provided to enable an assessment of impacts on woodlands, trees and hedgerows.	✓	O	O	O	O	O	O	✓	O	This objective will protect and enhance biodiversity. (1) (8) Recommendation: n/a
NHB – DM8: All lighting within the Plan area will be required to be directional lighting designed specifically to minimise	✓	O	O	O	O	O	O	O	O	This objective will protect and enhance biodiversity. (1) (8) Recommendation: n/a

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impact in relation to biodiversity.										
Green Infrastructure										
GI1: It is an objective of Kilkenny County Council to develop a Green Infrastructure Strategy for the town, linked to its urban regeneration.	✓	✓	✓	✓	✓	✓	O	✓	O	Improving and enhancing strategic infrastructure and linkages between strategic open spaces creates more adaptable and sustainable places that are resilient to the effects of climate change. This objective will also improve health and wellbeing. (1) (2) (3) (4) (5) (6) (8) Recommendation: n/a
Open Space										
OS1: It is an objective of Kilkenny County Council to improve the quality of these strategic open spaces through improved linkages and support for active uses surrounding these sites.	✓	✓	O	O	O	O	O	O	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing and could also enhance biodiversity. (1) (2) Recommendation: n/a
Open Space– Development Management Objectives										
OSDM1: According to quantitative standards, sufficient quantity of open space is currently in place. A qualitative assessment is now required to understand the scope for improvements with respect	✓	✓	O	O	O	O	O	O	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing and

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
to each green space both in terms of its usability together with its value for biodiversity.										could also enhance biodiversity. (1) (2) Recommendation: n/a
OSDM2: In terms of future enhancement, together with the improvements identified as part of the qualitative open space assessment, it is an objective of Kilkenny County Council to; • Protect and enhance the strategic role of areas likely to flood, through the identification of a flood risk buffer and linear park, where appropriate, alongside the Kings River and elsewhere where surface water features are present; • Protect and enhance these areas in terms of their biodiversity value particularly in areas close to River Barrow and River Nore SAC; • Improve access to and management of public spaces and pockets parks in the town centre; • Achieve design principles set out in the County Development Plan and specifically designing for active frontages and natural	✓	✓	O	O	O	✓	O	O	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing and could also enhance biodiversity. (1) (2) Recommendation: n/a

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
surveillance; and • Improve management of these space though natural means, avoiding the use of the herbicide glyphosate										
Open Space - Special Development Objectives										
SDO- OS1: To implement the Fair Green Regeneration Scheme in line with a recently approved part 8 application.	O	✓	O	O	O	O	O	O	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing. (2) Recommendation: Vehicular traffic should be managed to prioritise pedestrian movement and safety.
SDO- OS2: To develop the Motte Field as part of the Green infrastructure Strategy for the town with all stakeholders.	×/O	✓	O	O	O	O	O	O	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing. (2) Measures should be considered to avoid any adverse effects on biodiversity. (1) Recommendation: n/a
SDO- OS3: To allow for a potential public space /pocket park at St. Mary's Church and graveyard through development of a joint proposal by key stakeholders that	O	✓	O	O	O	O	✓	✓	O	Improving the quality of existing open space creates active and safe environments. This objective will improve health and wellbeing and

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
takes into account built heritage constraints and management requirements.										improve access and use of cultural assets. Improving access to St. Mary's Church would also be beneficial to the visitor economy. (2 (7) (8). Recommendation: n/a
Play Space – Development Management Objectives										
PSDM1: New residential development is required to be consistent with standards set out in the County Development Plan where playable space is to be provided as an integral part of each new development. This playable space can form part of the overall open space provision of a development but must be dedicated to play and must be accessible in accordance with the standards in the County Development Plan.	O	✓	O	O	O	O	O	O	O	Ensuring play space is provided as part of new development will have a direct impact on health and wellbeing. (2) Recommendation: n/a
Sports Facility Objective										
SF1: It is an objective of Kilkenny County Council to support/advance the provision of a district level indoor sports facility in Callan.	O	✓	O	O	O	O	O	O	O	Improving the availability of sports facilities is of benefit to health and wellbeing. (2) Recommendation: Ensure the proposal meets defined local need and avoids displacement of existing

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										facilities.
SF2: It is an objective of Kilkenny County Council to support the development of facilities at John Lockes GAA.	O	✓	O	O	O	O	O	O	O	Improving sports facilities in the town centre is of benefit to health and wellbeing. (2) Recommendation: Ensure residential amenity is maintained in the surrounding area.
SF3: It is an objective of Kilkenny County Council to retain sports and recreational facilities in the town for the benefit of the town inhabitants and the wider catchment area.	O	✓	O	O	O	O	O	O	O	Retaining sports facilities in the town centre ensures access for all, avoids unnecessary car travel and benefits health and wellbeing. (2) Recommendation: Ensure residential amenity is maintained in the surrounding area.
Tourism Objectives										
TO1: It is an objective of Kilkenny County Council to carry out an asset mapping exercise for Callan.	O	✓	O	O	O	O	✓	✓	O	Exploring ways to maximise the potential of Callan's tourism assets will enhance economic development (2) and would encourage the use of historic buildings that are currently underutilised (7) (8). Recommendation: n/a
TO2: It is an objective of Kilkenny County Council in conjunction with the Town	O	✓/×/O	O	O	O	O	O	O	O	Increasing visitor numbers will improve economic development but is

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
Team to prepare a marketing and communications strategy aimed at increasing visitor numbers.										also likely to increase traffic. This will have an adverse effect on air quality. So there is potential for both positive and negative effects on health and wellbeing. (2) Recommendation: n/a
TO3: To facilitate tourism activities such as eco-tourism, niche retailing, food markets, local and other craft type activities so as to diversify the tourism product in Callan, subject to relevant environmental assessments.	O	✓	O	O	O	O	O	O	O	Ensuring visitors have access to locally produced food and services will have a positive effect on economic development and therefore health and wellbeing. (2) Recommendation: n/a
TO4: To support the development of standardised signage and interpretation for tourism facilities and tourist attractions throughout Callan.	O	✓	O	O	O	O	×/O	×/O	O	Improving the visitor experience and spreading the benefit of the tourism economy will have a positive effect on economic development and therefore health and wellbeing. (2) Recommendation: Appropriate design and location of signage should be considered to avoid any adverse effects on the historic environment. (7) (8)
TO5: To support the development of linkages between historical sites within	O	✓	O	O	O	O	O	O	O	Ensuring visitors have access to locally produced food and services will have a positive effect on economic

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
and around Callan.										development and therefore health and wellbeing. (2) Recommendation: n/a
Tourism – Development Management Objectives										
TDMO1: All new tourism development should be designed to ensure that assets and features are universally accessible with a view to promoting inclusive tourism.	O	✓	O	O	O	O	O	O	O	Inclusive access to visitor attractions will be of benefit to the local economy and health and wellbeing. Where a protected structure or national monument is involved professional design input and conservation expertise will be required to avoid impacts on the historic fabric of the building. Recommendation: Professional design input and conservation expertise will be required to avoid impacts on the historic fabric of the building.
Arts, Culture & the Creative Economy Objectives										
ACCE1: It is an objective of Kilkenny County Council to support festivals and cultural events across the County.	O	✓/×/O	O	O	O	O	O	O	O	Increasing visitor numbers will improve economic development but is also likely to increase traffic. This will have an adverse effect road capacity and on air quality. So there is potential for both positive and negative effects on health and wellbeing. (2) Festivals

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										and events also generate a significant amount of waste. Recommendation: Develop and implement a county wide strategy to avoid the use of single use plastics within Council buildings and during festivals and cultural events. (2)
ACCE2: It is an objective of Kilkenny County Council to enhance the role of venues within district towns to facilitate satellite events associated with some of the County's signature festivals.	O	✓	O	O	O	O	O	O	O	Improving the visitor experience and spreading the benefit of the tourism economy will have a positive effect on economic development and therefore health and wellbeing. (2) Recommendation: n/a
ACCE3: It is an objective of Kilkenny County Council to support the Friary Conservation Plan and the development of the Friary Complex as a cultural and creative hub with a modern library service at its centre.	×/O	✓	O	O	O	O	✓	✓	O	Providing a centrally located library space is of benefit to health and wellbeing. (2) The reuse of a protected structure is also of benefit to Callan's cultural heritage and historic landscape. The Friary complex is located in close proximity to the Kings River (River Nore and River Barrow SAC). Recommendation: Projects that are located in close proximity of the Kings River (River Nore & River Barrow SAC) will require screening for appropriate

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										assessment.
ACCE4: It is an objective of Kilkenny County Council to investigate the feasibility of providing additional cultural facilities in Callan.	O	✓	O	O	O	O	O	O	O	Better cultural facilities that meet local need will have a positive effect on economic development, health and wellbeing and community cohesion. (2) Recommendation: n/a
Infrastructure – Development Objectives										
IN1: Kilkenny County Council will support the completion of an Irish Water survey over the next 2-3 years to assess the constraints on the waste water network in Callan. This will include an assessment of existing overflows, (one of which is located at the Clodeen pump station).	O	O	✓	✓	✓	O	O	O	O	Assessing constraints and capacity will help to protect water quality from the impact of new development (3) (4) (5). Recommendation: n/a
IN2: To ensure that any significant additional development in Callan is only allowed once the necessary water and wastewater capacity is in place.	O	O	✓	✓	✓	O	O	O	O	Assessing constraints and capacity will help to protect water quality from the impact of new development (3) (4) (5). Recommendation: n/a
IN3: It is an objective of Kilkenny County Council to align future development with capacity at the Callan Waste Water	O	O	✓	✓	✓	O	O	O	O	Assessing constraints and capacity will help to protect water quality from the

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
Treatment Plant to ensure that improvements are sufficient to meet standards required to avoid significant adverse effects on the River Nore and River Barrow SAC.										impact of new development (3) (4) (5). Recommendation: n/a
IN4: In conjunction with Irish Water, the Council will endeavour to maintain an adequate water supply sufficient for the development needs of the Plan.	O	O	✓	✓	✓	✓	O	O	O	Maintain an adequate water supply with sufficient headroom will help to protect sustainability of supply including groundwater and surface water levels (3) (4) (5) and improve resilience to climate change. Recommendation: n/a
IN5: To support optimal utilisation of existing pumping stations and limit the number of additional / future pumping stations to a minimum.	O	O	✓	✓	✓	O	O	O	O	Optimal use of existing infrastructure as well as good infrastructure design will help to protect water quality/levels from the impact of new development (3) (4) (5) Recommendation: n/a
Flooding – Development Management Objectives										
FDM1: To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the	O	✓/×	O	O	O	✓	✓/×	✓	O	Avoiding development in flood risk zones will have beneficial effects for health and wellbeing and will protect material assets. The SFRA completed

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
Planning System and Flood Risk Management – Guidelines for Planning Authorities, the avoidance of development in areas where flood risk has been identified shall be the primary response.										for the Draft LAP has also considered the potential impact of climate change for all potential sources of flooding. The draft plan identifies regeneration objectives for some areas that are risk of flooding in the town centre. The issue of flood risk will be subject to further consideration at masterplan / planning application stage and may prevent vulnerable uses from locating in these areas. Recommendation: highlight constraints for consideration at the more detailed design stage.
FDM2: In areas at risk from flooding, (particularly at riverside locations) a precautionary approach will apply and the methodology set out in the Planning Guidelines 'The Planning System and Flood Risk Management' will be applied to development proposals.	O	✓	O	O	O	✓	✓/×	✓	O	Avoiding development in flood risk zones will have beneficial effects for health and wellbeing and will protect material assets. The SFRA completed for the Draft LAP has also considered the potential impact of climate change for all potential sources of flooding. The draft plan identifies regeneration objectives for some areas that are risk of flooding in the town centre. The issue of flood risk will be subject to further consideration at masterplan / planning application stage and may prevent vulnerable uses from locating

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										in these areas. Recommendation: highlight constraints for consideration at the more detailed design stage.
FDM3: Where flood risk may be an issue for any proposed development, including pluvial flood risk, a flood risk assessment shall be carried out that is appropriate to the scale and nature of the development and the risks arising. This shall be undertaken in accordance with the Flood Risk Assessment Guidelines. Proposals for mitigation and management of flood risk will only be considered where avoidance is not possible and where development can be clearly justified with the Guidelines' Justification Test.	O	✓	O	O	O	✓	✓/×	✓	O	Avoiding development in flood risk zones will have beneficial effects for health and wellbeing and will protect material assets. The SFRA completed for the Draft LAP has also considered the potential impact of climate change for all potential sources of flooding. The draft plan identifies regeneration objectives for some areas that are risk of flooding in the town centre. The issue of flood risk will be subject to further consideration at masterplan / planning application stage and may prevent vulnerable uses from locating in these areas. Recommendation: highlight constraints for consideration at the more detailed design stage.
FDM4: The Council will support the introduction of attenuation measures that would reduce levels of surface water discharge into the main water course,	O	✓	O	O	O	✓	✓/×	✓	O	Avoiding development in flood risk zones will have beneficial effects for health and wellbeing and will protect material assets. The SFRA completed

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
thereby reducing the risk of flooding and supporting improvements to the quality of water. To do this, the Council will encourage surface water management for all green-field developments, whereby surface water run-off will be limited to pre-development levels.										for the Draft LAP has also considered the potential impact of climate change for all potential sources of flooding. The draft plan identifies regeneration objectives for some areas that are risk of flooding in the town centre. The issue of flood risk will be subject to further consideration at masterplan / planning application stage and may prevent vulnerable uses from locating in these areas. Recommendation: highlight constraints for consideration at the more detailed design stage.
Energy Objectives										
EO1: It is an objective of Kilkenny County Council to require all new development to design in such a way as to maximise energy efficiency.	O	✓	O	O	O	✓	O	O	O	Improving energy efficiency in all new development as well as redevelopment proposals for existing buildings will reduce the use and dependence on fossil fuel and as a consequence greenhouse gas emissions. This will help reduce energy costs and mitigate against climate change (2) (5). Recommendation: n/a

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
EO2: It is an objective of Kilkenny County Council to require all development to consider the potential for decentralised energy systems and for renewable energy to be integrated into the design of new development. Proposals should be accompanied by a 'low and zero carbon energy statement' outlining proposals for energy efficiency as well as the use low and zero carbon technologies.	O	✓	O	O	O	✓	O	O	O	Improving energy efficiency in all new development as well as redevelopment proposals for existing buildings will reduce the use and dependence on fossil fuel and as a consequence greenhouse gas emissions. This will help reduce energy costs and mitigate against climate change (2) (5). Recommendation: Potential for localised adverse effects in terms of visual impact should be addressed as part of the detailed design stage.
Transport Objectives										
TSDO1: It is an objective of Kilkenny County Council to carry out a Bridge Street / Mill Street Regeneration and Mobility Management Plan.	O	✓	O	O	O	✓	×/O/✓	×/O?/✓	O	Promoting sustainable modes of transport such as walking and cycling will improve health and wellbeing as well as pedestrian safety and air quality (2) it will also help to reduce the level of transport related greenhouse gas emissions (6). Recommendation: n/a
TSDO2: Safety improvements on the National Road at the junction of the N76 and R699 are required to address general	O	✓	O	O	O	O	O	O	O	This objective will improve traffic safety and therefore health and wellbeing (2)

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
safety issues and sight lines in particular.										Recommendation: n/a
TSDO3: Improve Pedestrian crossing facilities on the N76 at the R695 and L1020 junctions.	O	✓	O	O	O	O	O	O	O	This objective will improve pedestrian safety and therefore health and wellbeing (2) Recommendation: n/a
TSDO4: to implement the Fair Green Regeneration Scheme in line with a recently approved part 8 application.	O	✓	O	O	O	O	O	O	O	This objective will improve opportunities for physical activity and therefore health and wellbeing (2) Recommendation: n/a
TSDO5: It is an objective of Kilkenny County Council to carry out a car parking strategy for the town centre as part of the mobility management plan that identifies an improved and managed approach to parking on Green Street and provide more opportunities for off street parking elsewhere in the town.	O	✓	O	O	O	O	O	O	O	A parking strategy for the town would improve commercial activity within the town centre (2) Recommendation: Potential for localised adverse effects should be addressed as part of the strategy.
TSDO6: It is an objective of Kilkenny County Council to support the provision of pedestrian / cycle access, through provision of bridge infrastructure in order to enhance connectivity between the	O	✓	O	O	O	✓	×/O/✓	×/O?/✓	O	Promoting sustainable modes of transport such as walking and cycling will improve health and wellbeing as well as pedestrian safety and air quality (2) it will also help to reduce

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
town and the Motte Field.										the level of transport related greenhouse gas emissions (6). The proposal also has the potential to result in localised adverse effects which will be addressed at the route selection / design stage. (2) (7) (8) Recommendation: Localised adverse effects should be addressed at the route selection / design stage.
TSDO7: It is an objective of Kilkenny County Council to provide a walking and cycling route from Clodeen Lane to the car park at Mill lane / friary meadow through provision of bridge infrastructure.	O	✓	O	O	O	✓	×/O/✓	×/O/✓	O	Promoting sustainable modes of transport such as walking and cycling will improve health and wellbeing as well as pedestrian safety and air quality (2) it will also help to reduce the level of transport related greenhouse gas emissions (6). The proposal also has the potential to result in localised adverse effects which will be addressed at the route selection / design stage. (2) (7) (8) Recommendation: Localised adverse effects should be addressed at the route selection / design stage.
TSDO8: it is a long term objective to make a road connection between the Windgap road and Mill Street .	O	×/O/✓	O	O	O	×/O	×/O/✓	×/O/✓	O	This proposal is likely to reduce the volume of traffic in the town centre and HGVs in particular. This will

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										improve environmental quality (2) but also has the potential to result in localised adverse effects. that will be addressed at the route selection / design stage. (2) (7) (8) Recommendation: Localised adverse effects should be addressed at the route selection / design stage.
TSDO9: it is a long term objective to improve road connections between north and south Callan over the King's River.	O	×/O/✓	O	O	O	×/O	×/O/✓	×/O/✓	O	This proposal is likely to improve access to development land. It has the potential to result in localised adverse effects. (2) (7) (8) Recommendation: Localised adverse effects should be addressed at the route selection / design stage.
Development Management Objectives										
DMO1: It is an objective of Kilkenny County Council to implement land use zoning objectives for the plan area asset out in Appendix 1.	×/O	✓	×/O	×/O	×/O	O	O	O	O	An increase in population will improve economic performance within the town centre (2). This will result in an increased demand for water, waste water treatment and other waste services (3,4,5). It may also increase the number of people using the open space close to the Kings River (River Nore & River Barrow SAC) as a recreational resource, which may in

LAP Objective	SEA Objective ✓✓- Significant beneficial effect ✓ - beneficial effect O – neutral × - Adverse effect / uncertain ×× Significant adverse effect									Comments (Including reference to secondary, cumulative, synergistic, short, medium, long-term, permanent,
										turn increase disturbance. (1) Recommendation: Ensure adequate infrastructure is in place prior to development. The issue of disturbance has been considered by the Natura Impact Statement.

6.6 Inter-relationship between these issues

Environmental factors as outlined above cannot be considered in isolation from each other. Many of the topics as outlined above have inter-relationships, such as that between human health and drinking water quality and waste water treatment and water quality.

This environmental report has approached each of the environmental receptors on an individual basis, at a 'root' level. Where interactions are likely, they have been identified under each topic.

To highlight the extent of the relationship between the various elements of the environment Table 6-4 provides an indication of the interactions present between environmental receptors.

Table 6-4
Indication of the interactions present between environmental receptors

Is this aspect of the environment likely to interact with other aspects of the environment?	Biodiversity -Flora and Fauna	Population and Human Health	Soil	Water	Air	Climatic factors	Material Assets	Culture Heritage	Landscape
Biodiversity -Flora and Fauna		Y	Y	Y	Y	Y	Y	Y	Y
Population and Human Health	Y		Y	Y	Y	Y	Y	Y	Y
Soil	Y	Y		Y			Y	Y	
Water	Y	Y	Y			Y	Y		
Air	Y	Y							
Climatic Factors	Y	Y		Y			Y	Y	Y
Material Assets	Y	Y	Y	Y		Y		Y	Y
Cultural Heritage	Y	Y	Y			Y	Y		Y
Landscape	Y	Y				Y	Y	Y	

6.7 Evolution of Environment Without Implementation of The Plan

Problems have been outlined under each heading and historical trends presented where possible. There are many plans and guidance documents at European, National and local level, which aim to guide development in order to ensure that the environment is protected. It is acknowledged that some areas of environmental sensitivity, such as the Natura sites, are protected under EU law and this protection would continue in the absence of a Plan. However, there are many areas and issues for which the Local Area Plan provides the main guidance document. Such areas include undesignated habitats such as hedgerows and protected views, other than those identified in the County Development Plan.

In the absence of a Plan, environmental protection for these components would be reduced and the occurrence and magnitude of adverse impacts would likely increase. In the absence of the new Plan there would be no long term framework or guidance for development within this specific area. As a result, each planning application in the plan area would be determined in isolation and there would be no assessment of long term, cumulative or causal impacts on sensitive areas. In general, future investment in key infrastructure would not be targeted appropriately to key development areas. The result would be a haphazard, un-coordinated delivery of service, resulting in negative environmental impacts.

Specifically, the following could occur:

1. Biodiversity, Flora and Fauna

Although some areas of sensitivity, such as the Natura 2000 sites would continue to be protected under EU law, undesignated habitats such as hedgerows would suffer from a lack of protection.

2. Population and Human Health

In the absence of a Core Strategy and appropriate settlement policies there would be no framework for managing and directing development away from the most environmentally sensitive areas.

3. Soil

There would be no framework for directing development and growth to appropriate brownfield sites and therefore greenfield development would occur on an increased basis, resulting in a loss of non-renewable soil resources.

4. Water

Water supplies and wastewater treatment would continue to be governed by the Water Framework Directive. However development provided for in the Core Strategy will increase the demand for these services.

5. Air

In the absence of detailed Smarter Travel objectives and a settlement hierarchy, development would occur in a dispersed pattern, leading to an increase in unsustainable travel patterns and a subsequent increase in travel related greenhouse gas emissions and air pollution.

6. Climatic factors

With no Strategic Flood Risk Assessment, inappropriate development could take place in areas of flood risk.

7. Material Assets

There would be no framework to provide the infrastructure that the area requires.

8. Cultural Heritage (architectural and archaeological)

The Plan includes detail on the Record of Protected Structures in the area, and considers them and their settings in the land use plan. If this were not to occur, cultural heritage would not be protected to the fullest extent possible.

9. Landscape

The Plan includes a review of historic landscapes and considers them in the land use plan and policies. In the absence of this, there would be no framework guiding developments to avoid areas of highest sensitivity. Summary of Assessment

It is worth reiterating that the process of SEA and Plan formulation is an iterative one and as such environmental considerations have informed all stages of plan preparation carried out to date in order for the potential for significant adverse effects arising from implementation of the development objectives to be minimised.

Therefore, as can be seen, no development objectives are predicted to have a significant adverse impact. However, a number of development objectives are predicted to have an uncertain impact. Mitigation measures to lessen any possible impacts are outlined in Chapter 7 of this report.

6.8 Summary of Likely significant effects on the Environment

The preferred Plan strategy was selected based on an assessment of the three alternatives. This section summaries the likely the preferred Plan strategy in detail. It would be unworkable to evaluate every line of text in the Plan; therefore, to provide an overview, this evaluation focuses on the objectives of each chapter.

In order to distinguish between the SEA objectives, as outlined in Chapter 4, and the Plan objectives, the Plan objectives are referred to as 'Development objectives'. All development objectives are subjected to assessment in the context of each of the SEA Objectives as selected in Chapter 4.

The purpose of this section of the Environmental Report is to highlight any potential conflicts between the development objectives contained in the Plan and the SEA Objectives. Furthermore, the assessment examines the potential impact arising from the implementation of the development objectives on sensitive environmental receptors.

In accordance with the Guidelines, the potential effects of the Plan are categorised as follows:

- Significant beneficial impact
- Uncertain impact (the impact will need mitigation to ensure that no significant adverse impacts occur.)
- Significant adverse impact
- No relationship, or insignificant impact

No development objectives have been identified as having significant adverse impacts, and given this, the requirement for specific mitigation measures is largely unnecessary. However, a number of development objectives are predicted to have uncertain impacts. Uncertain impacts require mitigation to ensure that significant adverse impacts do not occur.

The following section of the Environmental Report will focus on and discuss how the SEA objectives will be protected through mitigation of any uncertain effects.

7.0 Mitigation Measures

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the development objectives. Mitigation has taken place throughout the plan-making process.

Mitigation took place through the consideration of alternatives, as environmental considerations (as outlined in Chapter 3) were communicated to the Planning team to enable them to make an informed choice as to which alternative was put before the Members of the Council. Mitigation also took place through the Strategic Flood Risk Assessment where recommendations were identified to ensure no inappropriate uses would be considered on land which was subject to flood risk.

Environmental considerations were also 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. A key decision from the outset was for the most part, that mitigation measures would be incorporated into each section of the Plan as "Development Management Objectives".

The two main exceptions to this are the Objectives in relation to the Habitats Directive and Flooding. The objective for European sites is set out in Section 1.4 Appropriate Assessment of the Plan. This objective ensures that any plan or project is subject to appropriate assessment in order to avoid adverse impacts on any European sites. The objectives in relation to flooding is set out in Chapter 9 of the Plan and this ensures that a comprehensive risk-based planning approach to flood management will take place to prevent or minimise flood risk.

As outlined in Chapter 6, no development objectives have been identified as having significant adverse impacts, and given this, the requirement for specific mitigation measures is largely unnecessary. However, a number of development objectives are predicted to have uncertain impacts. Uncertain impacts require mitigation to ensure that significant adverse impacts do not occur. Therefore this section of the Environmental Report will focus on and discuss how the SEA objectives will be protected through mitigation of any uncertain effects.

7.1.1 Summary of Mitigation Measures Proposed

Table 6.3 which appraises the policies in the LAP also sets out a number of suggested mitigation measures. Where practicable, similar mitigation measures have been used for a number of policies, in order to provide for ease of application. Mitigation measures proposed include:

Biodiversity, Fauna and Flora

- Require the preservation of hedgerows within new development
- Avoid development on and establish a buffer around designated ecological sites, the size of which will be dependent on local ecological and drainage conditions established through appropriate assessment.
- There will be no development of sites within the 20 m buffer zone either side of the King's River.
- Contractors appointed to undertake the works will be informed of the sensitivities of the King's River and will be expected to provide site specific method statements detailing measures taken to protect the environment during all phases of works.
- If it is proposed to abstract water from the river or where drawdown from abstraction may affect the hydrological regime of the river and the features of interest of the SAC a suitably qualified hydrogeologist must be appointed to assess the zone of influence.
- Commissioning a study to establish baseline air quality levels within Callan town in advance of further development. Air quality monitoring will continue over the lifetime of the LAP to determine if air quality is affected by the development objectives of the LAP.

Material Assets

- Applications for development within or adjacent to a Site on the Sites and Monument Register or the zone of archaeological potential should submit an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area.
- Development on the floodplain should be restricted. In regeneration areas, redevelopment proposals should exclude vulnerable uses.
- A wider strategy for festivals and events should perhaps include a strategy to reduce the level of waste generated.

Cultural Heritage

- Include policies to ensure that new development has a minimal impact on protected structures, important archaeological features, and structure on the national inventory of architectural heritage
- Development in or close to the high street and particularly for buildings that may be visually prominent should require visual impact assessments.

Landscape

- Appropriate screening and planting should be incorporated on visually prominent sites
- Reduce or minimise light pollution through appropriate design solutions e.g. full cut off lighting
- Development to be restricted on the floodplain
- New pedestrian/cycle bridge infrastructure should consider the need for project level Appropriate Assessment in order to avoid impacts on designated biodiversity sites.

Water and Soil

- Ensure that adequate capacity in the waste water treatment plant is available to serve all new development
- Ensure that adequate capacity in water supply is available to serve new development
- Focus development where possible initially on brownfield land
- To encourage the reuse of topsoil generated from housing and other development
- Incorporate SuDS and attenuation measures to reduce level of surface water discharge into the main watercourses.

Population and Human Health

- The Plan should identify measures to support sustainable forms of transport;
- The Plan should seek to improve accessibility to employment, education, healthcare, local food and to a range of housing types and community and recreation facilities
- The plan should discourage new residential development adjacent to the N76.

Air

- Support for sustainable forms of transport would have a beneficial effect as well as slower speeds

Climatic Factors

- The Plan should promoting sustainable modes of travel
- The Plan should encourage use of sustainable design and construction methods

- The Plan should require energy efficiency in new development
- The Plan should require the inclusion of decentralised / renewable energy systems

8.0 Plan Monitoring

The SEA Directive requires Member states to monitor the significant environmental effects of the implementation of plans. This section puts forward proposals for monitoring the Plan. Monitoring of the Plan enables the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. Existing monitoring arrangements may be used if appropriate, to avoid duplication of monitoring. The Council is responsible for monitoring and if necessary, the carrying out of corrective action.

The SEA Guidelines state that monitoring must be linked to earlier stages in the SEA process, in particular to the environmental objectives and issues identified during the preparation of the Environmental Report. It is proposed to base monitoring on a series of indicators which measure changes in the environment, especially changes which are critical in terms of environmental quality, for example water or air pollution levels.

The indicators aim to simplify complex interrelationships and provide information about environmental issues which is easy to understand. A list of environmental indicators and targets is provided in Table 8.1. The indicators are based on the Strategic Environmental Objectives presented in Chapter 4. Measurements for indicators generally come from existing monitoring sources. Existing monitoring sources include those maintained by the Council and the relevant authorities e.g. the Environmental Protection Agency, the National Parks and Wildlife Service and the Central Statistics Office. The sources of information are also identified in Table 8.1.

Environmental indicator assessment during monitoring can show positive/neutral impacts or negative impacts on the environment. Where an indicator value highlights a positive/neutral impact on the environment, it is likely that the objectives of the Plan are well defined with regard to the environment. Conversely where the objectives of the Plan have a negative impact on the environment, it may be necessary to review the objectives of the Plan or to take some other form of intervention. For example, if an objective is having a significant adverse impact, an amendment may be considered during the lifetime of the Plan.

Table 8.1
Monitoring proposals for environmental categories

Environmental Category	Targets	Selected indicators	Data Sources	Monitoring frequency
Biodiversity -Flora and Fauna	No loss of important and/or designated habitats	Number of sites.	Kilkenny 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	The NPWS; For all European sites:	No deterioration in the quality of protected areas
	No loss of protected species	Overall conservation status of species in Co. Kilkenny, distribution of protected species in Co. Kilkenny	NPWS, The Status of EU protected Habitats and Species in Ireland. 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.
Population and Human health	No loss of population within Plan area	Total population within settlement boundary	Census	Next Census
	Improve the deprivation Index score	Pobal Deprivation Index Score	Census	Next Census
	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
Water	No decline in river water quality; no increase in percentage of sample stations in seriously polluted	Percentage of sample stations in seriously polluted rivers.	EPA Reports on River water quality	Ongoing depending on available information

Environmental Category	Targets	Selected indicators	Data Sources	Monitoring frequency
	rivers.			
	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 Belview plant in EPA reports.	Pass or Fail status of Belview plant in EPA reports on Urban Waste Water Treatment.	EPA	Ongoing depending on available information
	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	Periodic review

Environmental Category	Targets	Selected indicators	Data Sources	Monitoring frequency
Air	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
Cultural Heritage (architectural and archaeological)	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 Plan.	Number of protected structures.	Kilkenny County Council	Periodic review

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