

# Strategic Environmental Assessment of Kilkenny Draft County Development Plan 2014-2020



Kilkenny County Council

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**Appendix 1: Strategic Flood Risk Assessment (separate document)**

## Non-technical Summary

### Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Environmental Report (ER) of the Kilkenny Draft County Development Plan. The purpose of the ER is to provide a clear understanding of the likely environmental consequences of decisions regarding the future development of Kilkenny.

What is an SEA?

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 within Kilkenny. The output of the process is an ER and SEA Statement, both of which should be read in conjunction with the Development Plan.

How does it work?

All of the main environmental issues in Kilkenny 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. 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 are 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?

On 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

### 2.1 Content of the Plan

The Plan has been prepared by Kilkenny County Council and comprises a written document with maps, and appendices. The contents of the Plan (as set out in its chapter headings) are as follows;

1. Introduction
2. Demographic and Socio-Economic Trends
3. Core Strategy
4. Economic Development
5. Housing and Community
6. Rural Development
7. Recreation, Tourism & the Arts
8. Heritage
9. Infrastructure & Environment
10. Renewable Energy Strategy
11. Transport
12. Requirements for Developments

### 2.2 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 and may, in turn, guide lower level strategic plans. The higher level plans include the following:

- [National Climate Change Adaptation Framework](#)<sup>1</sup>
- [National Spatial Strategy \(NSS\)](#)<sup>2</sup>
- [National Recovery Plan 2011-2014](#)<sup>3</sup>
- [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#)<sup>4</sup>
- [Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 \(2009\)](#)
- Ministerial Guidelines on [Architectural Heritage Protection](#), [Childcare Facilities, Development Plans, Landscapes, The Planning System and Flood Risk Management](#), [Retail Planning](#), [Strategic Environmental Assessment](#), [Sustainable Residential Development in Urban Areas](#) and [Sustainable Rural Housing](#)
- [Food Harvest 2020, A vision for Irish agri-food and fisheries](#)<sup>5</sup>
- [South East River Basin Management Plan](#)<sup>6</sup>
- Waterford Planning and Land Use Transportation Study (PLUTS)<sup>7</sup>
- [Kilkenny 2002-2012, A Strategy for Economic, Social and Cultural Development](#)<sup>8</sup>

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<sup>1</sup> Department of Environment, Community and Local Government, [National Climate Change Adaptation Framework](#), 2012

<sup>2</sup> Department of the Environment and Local Government, [The National Spatial Strategy 2002-2020, People, Places and Potential](#), 2002

<sup>3</sup> Stationery Office Dublin, [The National Recovery Plan 2011-2014](#), 2011

<sup>4</sup> Government of Ireland, [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#), 2012

<sup>5</sup> Department of Agriculture, Food and the Marine, [Food Harvest 2020, A vision for Irish agri-food and fisheries](#), 2010

<sup>6</sup> South Eastern River Basin District, [South East River Basin Management Plan](#), 2010

<sup>7</sup> Atkins, [Waterford Planning and Land Use Transportation Study 2004-2020](#), 2004

- The [South East Regional Planning Guidelines](#)<sup>9</sup> (RPGs)

The Plan will set the strategic context for any lower-tier plans, such as Local Area Plans (LAPs) to be prepared in the county. LAPs are in place for Callan, Castlecomer, Fiddown, Ferrybank/Belview, Gowran, Graiguenamanagh, Piltown, Thomastown and Woodstock. The LAPs for Ferrybank and the District Towns will be reviewed following on from adoption of the Plan. LAPs are also in place for Bennettsbridge and Kilmacow and these LAPs are being superseded by the provisions contained in the Plan.

## Section 3 The Environmental Baseline

### 3.1 Introduction

The environmental baseline of Kilkenny is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified in Section 3.3, is 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

### 3.2 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 framework or guidance for development within Kilkenny. 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.

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<sup>8</sup> Kilkenny County Development Board, [Kilkenny 2002-2012, A Strategy for Economic, Social and Cultural Development](#), 2002

<sup>9</sup> South East Regional Authority, *Regional Planning Guidelines for the South East Region 2010-2022*, 2010



### 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 Groundwater Protection Scheme would not be implemented and therefore applications would proceed on an ad-hoc basis, without due regard to the potential for affecting a particular aquifer or source.

### 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 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 framework to provide the infrastructure, such as energy infrastructure, that the county requires.

### 8. Cultural Heritage (architectural and archaeological)

The Plan includes a review of the Record of Protected Structures and Architectural Conservation Areas. If this were not to occur, cultural heritage would not be protected to the fullest extent possible, as additions to either the RPS or ACAs would not be carried out.

### 9. Landscape

In the absence of a Landscape Character Assessment, which forms part of the Plan, there would be no framework guiding developments to avoid areas of highest sensitivity. There would be no Wind Energy Development Strategy and new wind farm developments would be assessed on an individual basis, with no clear strategy.

## 3.3 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 result in an environmentally neutral impact from implementation of the Planning Scheme.

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.

Environmental Parameter	International, European, National policy documents/strategies /guidelines	No.	Objective (EPO)	Broad Planning Policy Objective (PPO)
Biodiversity, fauna and flora	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity <a href="#">Actions for Biodiversity 2011-2016, Ireland's National Biodiversity Plan</a> (2011)	B1	Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species.	Protect designated sites: SACs, NHAs and SPAs from development. Identify locally important habitats for protection. Provide for green infrastructure. Concentrate development in areas with least sensitivities.
Population and Human Health	Agenda 21 (1992) <a href="#">Our Sustainable Future: A framework for sustainable development for Ireland</a> (2012) The National Spatial Strategy (2002) <a href="#">Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020</a> (2009)	P1	Improve people's quality of life based on high-quality residential, working and recreational environments and on sustainable travel patterns.	Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, and Regional Planning Guidelines. Promote higher density residential development in suitable locations. Sustain the viability of services in smaller towns and villages. Promote sustainable transport patterns through appropriate zoning and provision for public transport. Require appropriate levels of recreational areas with any residential application.
	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	P2	Minimise noise, vibration and emissions from traffic	Require noise controls with all relevant applications. Promote sustainable transport patterns through appropriate zoning and provision for public transport.
Soil	<a href="#">A Resource Opportunity, Waste Management Policy in Ireland</a> <sup>10</sup> .	S1 S2	Maintain the quality of soils Maximise the sustainable re-use of brownfield lands, and maximise the	Direct development to brownfield lands in preference to developing greenfield lands.

<sup>10</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

			use of the existing built environment rather than developing greenfield lands.	
		S3	Minimise the consumption of non-renewable sand, gravel and rock deposits	Encourage rehabilitation of existing housing stock where appropriate.
		S4	Minimise the amount of waste to landfill	Provide appropriate waste disposal facilities, including for composting and recycling in all developments.
Water	EU Water Framework Directive (2000/60/EC) <a href="#">EU Directive on the assessment and management of flood risks</a> [2007/60/EC], <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a> (2009)	W1	Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.	Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks. Provide sufficient capacity in water services to serve zoned land. Include Strategic Flood Risk Assessment as part of the Plan.
		W2	Promote sustainable water use based on a long-term protection of available water resources.	
		W3	Reduce progressively discharges of polluting substances to waters	
		W4	To comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG, 2009)	
Air	<a href="#">Ambient Air Quality and Cleaner Air for Europe</a> (CAFE) Directive (2008/50/EC)	A1	Reduce all forms of air pollution	Promote energy efficient developments. Promote sustainable transport patterns through appropriate zoning and provision for public transport.
Climatic factors	<a href="#">National Climate Change Adaptation Framework</a> (2012)	C1	Reduce waste of energy, and maximise use of	Promote energy efficient developments. Promote sustainable transport

			renewable energy sources	patterns through appropriate zoning and provision for public transport.
		C2	Minimise emissions of greenhouse gases to contribute to a reduction and avoidance of human-induced global climate change	Include a climate change adaptation strategy.
		C3	Reduce the need to travel	
		C4	Assess, plan and manage adaptation to climate change impacts	
Material Assets	<a href="#">Our Sustainable Future: A framework for sustainable development for Ireland</a> (2012)	M1	Make best of use of existing infrastructure and promote the sustainable development of new infrastructure.	Direct development to brownfield lands in preference to developing greenfield lands. Encourage rehabilitation of existing housing stock/buildings where appropriate. Sustain the viability of services in smaller towns and villages.
Cultural Heritage (architectural and archaeological)	<a href="#">European Convention on the Protection of Archaeological Heritage</a> (1992) <a href="#">Framework and Principles for the Protection of the Archaeological Heritage</a> (1999) <a href="#">Architectural Heritage Protection Guidelines</a> (2004)	H1	Promote the protection and conservation of the cultural heritage, including architectural and archaeological heritage	To conserve and protect the archaeological heritage with regard to entries on the RMP. To conserve and protect the special interest and character of the architectural heritage with regard to the RPS, the NIAH and ACAs.
Landscape	The European Convention on Landscape, 2000 <a href="#">A National Landscape Strategy for Ireland Strategy Issues paper for consultation</a> (2011)	L1	Conserve and enhance valued natural and historic landscapes, their character and features within them.	Avoid the loss of designated views. Protect designated landscapes.

**Section 4 Alternative Scenarios**

**4.1 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 Kilkenny. The

[Regional Planning Guidelines](#) have allocated a projected population growth figure for the county, 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 county. Three alternatives were considered, each focusing on a different distribution of the growth as allocated by the [RPGs](#). One other element that was included in the alternatives was the development of wind energy. National policy and guidelines recommend that a Strategy is undertaken, but the form this strategy takes is determined at local level through the plan process.

#### Alternative 1: Continued consolidation

Alternative 1 concentrates growth mainly into the seven main settlements of Kilkenny, Ferrybank, the Environs of New Ross, the District Towns of Callan, Castlecomer, Graiguenamanagh and Thomastown, with little growth being allocated to the smaller level settlements or to rural areas. Access to public transport is a guiding principle of this approach, and Thomastown, as the only District Town served by rail, is prioritised above the level of the other three District towns. Wind energy developments are concentrated only where they exist at present, with no allowance made for new locations.

#### Alternative 2: Dispersed growth

This scenario is one which places very few restrictions on development throughout the Plan area. No specific targets or limitations on growth would be set in the core strategy of the Plan for settlements within the county at a level lower than the hub and gateway. The 'pot' of zoned land, would be distributed amongst all remaining settlements without prioritisation. Development would be allowed to proceed in an ad hoc manner and would follow market forces to a great extent. Developments such as quarries and wind energy developments would be located where demand is greatest. Most development would occur on greenfield sites.

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

This alternative acknowledges the designation of Kilkenny as a hub, and Waterford as a gateway within the National Spatial Strategy, but redesignates the 'District Towns'. The 2008 District Towns were designated on the basis of the [Regional Planning Guidelines](#), which categorised towns of between 1,500 and 5,000 as 'District Towns'. The 2011 Census shows that Castlecomer and Graiguenamanagh's populations did not reach the 1,500 mark. In this alternative, Piltown and Mooncoin, which have the next highest populations, are designated as District Towns in place of Castlecomer and Graiguenamanagh.

As part of this alternative, new areas for wind energy development would be selected on the basis of viability alone. Only those areas with highest wind speeds would be selected for wind farm development, regardless of landscape sensitivities or the presence or absence of existing wind farms.

## 4.2 Evaluation of Alternative Scenarios

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

### Alternative 1: Continued consolidation - Likely significant effects

#### Environmental impacts

This alternative concentrates populations into locations with existing services and facilities, and access to public transport. Investment in key infrastructure can be concentrated into a very small number of settlements. Sustainable travel is promoted. Valuable natural resources such as water

quality are protected through targeted infrastructural measures. No allowance is made for additional wind energy developments, which would result in less use of renewable energy sources.

#### Planning impacts

This alternative does not support the rural population, which may lead to a population decline in rural areas and in smaller settlements.

#### Alternative 2: Dispersed growth - Likely significant effects

##### Environmental impacts

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

##### Planning impacts

The provision of key services such as water supply and wastewater treatment would become costly in both financial and environmental quality terms.

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

##### Environmental impacts

In this alternative, a large growth area would be formed around Ferrybank, Piltown and Mooncoin in the south of the county. As Piltown's wastewater treatment plant is currently overloaded, any additional loading would negatively affect water quality in Piltown. This may have a resulting negative effect on the conservation status of the Lower River Suir cSAC which is located in close proximity to both settlements. Directing growth into the smaller centres of Piltown and Mooncoin would detract from the emphasis on Ferrybank as part of the Waterford Gateway, and would result in an increase in unsustainable travel patterns and a negative effect on air quality. As Piltown and Mooncoin were not historically large service centres, there are very few opportunities for brownfield redevelopment, and most development in both would take place on the edges of the centres, on greenfield land. This would have negative environmental effects through the increased replacement of agricultural land by artificial surfaces.

As part of this alternative, new areas for wind energy development would be selected on the basis of viability alone. Only those areas with highest wind speeds would be selected for wind farm development, regardless of landscape sensitivities or the presence or absence of existing wind farms.

##### Planning impacts

From a social and economic perspective, existing services in Castlecomer and Graiguenamanagh would suffer with the removal of their District Town designation.

### **4.3 Selection of Preferred Alternative**

The preferred alternative which emerged from the evaluation process is Alternative 1, Continued Consolidation, with an element of Alternative 2, Dispersed Growth to encourage some level of growth of the smaller settlements to ensure that these smaller settlements are sustained. In relation to wind energy, the best solution is the recognition of areas of highest viability (Alternative 3) whilst taking account of landscape sensitivities (Alternative 1).

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

By complying with 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.

#### **4.4 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**

#### **5.1 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.

#### **5.2 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. A monitoring report will be prepared as part of the Manager's Report on the implementation of the Development Plan, which must be carried out within two years of the making of the Plan.





## 1 Introduction

A review of the County Development Plan for Kilkenny (2008-2014) is being carried out by Kilkenny County Council. This Plan will cover the county as a whole and also a number of settlements in detail (Ballyhale, Ballyragget, Bennettsbridge, Freshford, Goresbridge, Inistioge, Kells, Kilmacow, Knocktopher, Mooncoin, Mullinavat, Slieverue, Stoneyford, New Ross Environs and Urlingford). A separate Development Plan will cover Kilkenny City & Environs. To satisfy the requirements of [European Directive 2001/42/EC](#)<sup>11</sup>, the Planning and Development (Strategic Environmental Assessment) (SEA) Regulations 2004 (as amended) require that an SEA is carried out on any development plan where the population (or target population) is more than 10,000 persons. The population of Kilkenny County is 95,419<sup>12</sup> therefore an SEA is required.

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](#)<sup>13</sup>.

### 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.

Requirements of <a href="#">SEA Directive</a>	Section of Environmental Report
A. 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
B. 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
C. the environmental characteristics of areas likely to be significantly affected;	Chapter 3: Current state of the environment
D. 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
E. the environmental protection objectives, established at international, European Union	Chapter 4: Policy objectives

<sup>11</sup> EU, [Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment](#), Article 1

<sup>12</sup> CSO, Census 2011 Population Classified by Area

<sup>13</sup> [Implementation of SEA Directive \(2001/42/EC\): Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional and Planning Authorities](#) November 2004

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;

F. the likely significant effects<sup>14</sup> on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

G. the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;

H. 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;

I. a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan;

J. a non-technical summary of the information provided under the above headings.

Chapter 6: Likely significant effects on the environment

Chapter 7: Mitigation measures

Chapter 5: Assessment of Alternatives

Chapter 8: Development Plan Monitoring

Non-technical Summary

## 1.2 Methodology

### 1.2.1 Screening

Screening was not carried out, as SEA is mandatory for the preparation or review of a County Development Plan.

### 1.2.2 Scoping

A brief scoping report was prepared in July 2012 in accordance with the [SEA Guidelines for Regional and Planning Authorities](#)<sup>15</sup>. The purpose of the scoping report was to ensure the identification of relevant environmental issues so they could be addressed appropriately in the Environmental Report. The scoping report also indicated the level of detail necessary for the SEA of the Development Plan.

<sup>14</sup> These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.

<sup>15</sup> Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional and Planning Authorities November 2004

### 1.2.2.1 Consultation

In line with the Planning and Development (SEA) Regulations 2004 as amended<sup>16</sup>, the Environmental and Planning Authorities were given notice on the 15<sup>th</sup> June 2012 of the intention of Kilkenny County Council to carry out an environmental assessment.

A response was received from the EPA on the 12<sup>th</sup> July 2012, which included an SEA pack for all Local Authorities to incorporate in carrying out the Environmental Report. The letter listed general topics to be considered, covering issues such as water quality and flooding. In addition, one specific comment related to the Waterford Harbour Shellfish Growing Area and the recommendations of the Pollution Reduction Programme and Characterisation Report.

A response was received from the Department of Arts, Heritage and the Gaeltacht on the 13<sup>th</sup> July 2012 in relation to underwater archaeological heritage and to nature conservation.

The comments from both bodies were incorporated within the Scoping Report and are taken into account in the content of this Environmental Report in accordance with the Regulations. (See Section 3.6 for the Waterford Harbour Shellfish growing area and Section 3.10 for reference to underwater archaeology.)

### 1.2.3 Public Consultation

Public consultation regarding the Plan commenced in March 2012 with the publication of “*Our Plan – A Guide to having your say*” which detailed the review process of the Plans. The full pre-draft consultation process is outlined in the *Manager’s Report on the Pre-draft Stage* (November 2012).

Submissions from the public were invited between the 15<sup>th</sup> June and 24<sup>th</sup> August 2012. Two submissions were received in relation to the SEA, from An Taisce, ref. P18 and the Heritage Council, ref. P38. These submissions were addressed in the Manager’s Report, and the relevant extracts are summarised below.

Submission ref.	Summary	Manager’s Opinion and Recommendation
An Taisce, Declan Murphy P18	1) Implement the policies related to heritage & environment which are not fully completed. 2) All policies must be proofed against climate change and biodiversity loss. 3) Proof plans against all national and EU laws & policies. 4) Subject plans to SEA & AA.	1) All policies will be reviewed as part of the new Plans and will be retained where appropriate. 2) This will be done as part of the Strategic Environmental Assessment. 3) This is required by law and will be done as part of SEA. 4) Plans will be subject to SEA & AA.
Heritage Council c/o Colm Murray	3) The Strategic Environmental Assessment (SEA) process could be improved by involving stakeholders and including a reporting format which	3) An SEA will be undertaken in line with the requirements of legislation and the Guidelines, which includes for consultation with the environmental

<sup>16</sup> Planning and Development Strategic Environmental Assessment (Amendment) Regulations 2011 S.I. 201 of 2011

P38	reflects open dialogue. 4) An audit of the environmental performance of the previous development plan should be made available.	authorities and for public consultation. Every effort will be made to ensure that this is a readable, accessible document. 4) The environmental indicators as included in the previous SEA were generally indicators that are regularly published, such as water quality indicators. Information on these indicators is available from a variety of sources. A review of how the Plan functioned will be carried out as part of the Environmental Report on the Draft.
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Taking on board both submissions, this Report aims to be clear and easily accessible. It was found that it was difficult to obtain information on, and therefore monitor the indicators as selected in the previous SEA. In this SEA the indicators are selected with regard their relevance, and also to how practical it is to obtain the information.

#### 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. In previous Environmental Reports, threats were included in this discussion, however, in this report, only actual problems are listed in order to present a more accurate picture of environmental quality in the county. 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 (PPOs) 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.

### 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 Development Plan

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.

In accordance with SEA [Guidelines](#) the assessment categorised the potential effects of the Plan on the SEOs as follows:

- Significant beneficial impact
- Uncertain impact
- Significant adverse impact
- No relationship, or insignificant impact

### 1.2.8 Changes to the Plan as a result of SEA

The formulation of the Plan and the preparation of the SEA is an iterative process that takes place over many months (this stage is from March 2012 to May 2013) 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 used a combination of ‘policies’, ‘objectives’, ‘actions’ and ‘development assessment/management criteria’. This 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. One example from Chapter 8 Heritage is: *“To preserve and improve places or areas from which views or prospects of special amenity value exist.”*

This made the assessment clearer, and should lead to greater clarity in monitoring the effects of the Plan. ‘Development management standards’ were used to clearly set out what would be required to be satisfied as part of any planning application, so for the most part these were used as mitigation measures. An example of one of these from Chapter 8, related to views, is:

*“To ensure that development in upland areas or on steep slopes will not have a disproportionate or dominating visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere or detract from protected views, see Section 8.2.9.6.”*

Another overall change, related to the structure of the Plan, is the use of ‘strategic aims’ to set out the overarching aim of each chapter. These strategic aims provide a standard against which every objective within the chapter is measured against.

Furthermore, specific changes to the text were introduced as a result of the SEA process. This includes sections on Conservation Management Plans for Natura 2000 sites, the National Survey of Native Woodlands and Ancient Woodlands and peatlands, and also the incorporation of a number of protected views from Local Area Plans.

#### **1.2.8.1 Strategic Flood Risk Assessment**

A Strategic Flood Risk Assessment (SFRA) has been carried out as part of the SEA process. The SFRA is included as an appendix to this SEA. As outlined in that SFRA, the three zoning maps for Bennettsbridge, Kilmacow and New Ross Environs were subjected to various changes as a result of the SFRA’s justification test. In addition, the development boundaries for a number of settlements were modified as a result of the SFRA. These changes, and the changes to the text in Section 9.2.9 Flooding, are all documented in detail in the SFRA.

#### **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 lack of a centralised data source that could make all environmental baseline data for the County available in a consistent format posed a significant difficulty to the SEA process. Each aspect had to be examined in detail individually.

Also, there are some gaps in information available, for instance in relation to complete ecological coverage, e.g. habitats, trees, hedgerows etc. Other gaps include a lack of availability of detailed conservation management plans for most of the Natura 2000 sites within the County. Gaps are referenced under each relevant heading in Chapter 3.

#### **1.2.12 Report Preparation**

This report has been prepared by the Forward Planning Section of Kilkenny County Council.

## 2 Contents and Description of the Plan

### 2.1 Contents

Kilkenny County Council is currently preparing the Kilkenny County Development Plan 2014-2020 (hereafter referred to as the Plan) which will replace the existing Development Plan for 2008-2014. This Plan is being prepared under the provisions of the Planning and Development Acts 2000-2010 to develop and improve the county in a sustainable manner.

The Plan will cover the county as a whole, and also a number of settlements in detail. Twelve settlements will be subject to a development boundary with associated policies: Ballyhale, Ballyragget, Freshford, Goresbridge, Inistioge, Kells, Knocktopher, Mooncoin, Mullinavat, Slieverue, Stoneyford, and Urlingford. Three settlements will be subject to a zoning map under this Plan: Bennettsbridge, Kilmacow and New Ross Environs. A separate Development Plan will cover Kilkenny City & Environs. The areas to be included in this Plan are shown on Figure 2.1.

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

13. Introduction
14. Demographic and Socio-Economic Trends
15. Core Strategy
16. Economic Development
17. Housing and Community
18. Rural Development
19. Recreation, Tourism & the Arts
20. Heritage
21. Infrastructure & Environment
22. Renewable Energy Strategy
23. Transport
24. Requirements for Developments

As the Core Strategy included in Chapter 3 of the Plan outlines, the focus for new development will be in the main settlements of Kilkenny City, Ferrybank (as part of the Waterford Gateway) and the four District Towns (Callan, Castlecomer, Graiguenamanagh and Thomastown). The estimated population increase amongst those settlements is 4,136. The estimated population increase for the remainder of the county (all other settlements plus rural areas) is 5,885.

### 2.2 Objectives

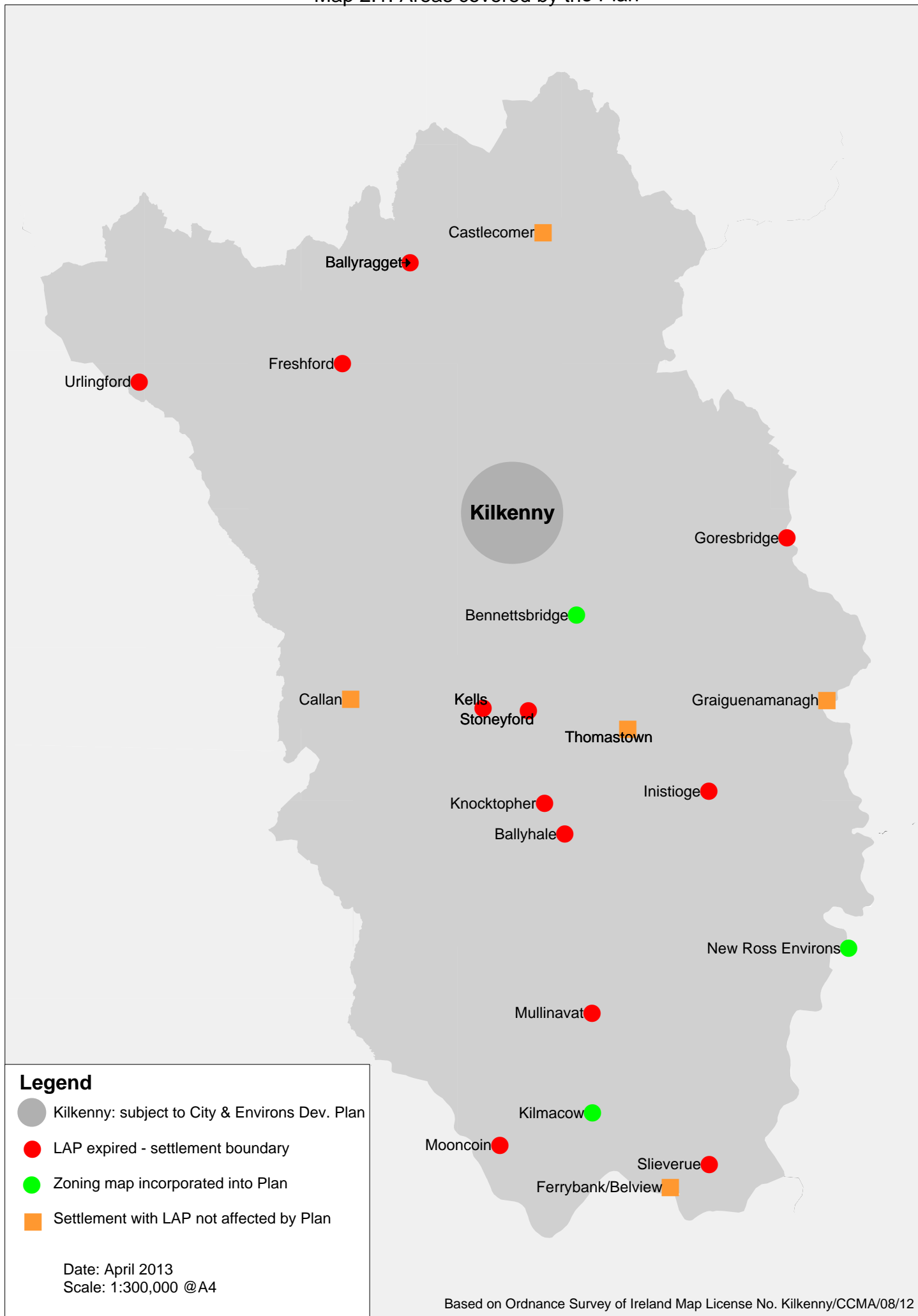
The main objectives and ethos of the Plan can be summarised in its Mission Statement (section 1.7) as follows:

***“Kilkenny Local Authorities aim to work in partnership with the people of Kilkenny and relevant agencies to deliver quality services and to promote sustainable economic, social and cultural development for current and future generations.”***

### 2.3 Relationship with other relevant plans and programmes

The Plan provides a land use framework for the sustainable development of County Kilkenny. 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:

Kilkenny Draft County Development Plan - Strategic Environmental Assessment  
Map 2.1: Areas covered by the Plan





- [National Climate Change Adaptation Framework](#)<sup>17</sup>
- [National Spatial Strategy \(NSS\)](#)<sup>18</sup>
- [National Recovery Plan 2011-2014](#)<sup>19</sup>
- [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#)<sup>20</sup>
- [Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 \(2009\)](#)
- Ministerial Guidelines on [Architectural Heritage Protection](#), [Childcare Facilities](#), [Development Plans](#), [Landscapes](#), [The Planning System and Flood Risk Management](#), [Retail Planning](#), [Strategic Environmental Assessment](#), [Sustainable Residential Development in Urban Areas](#) and [Sustainable Rural Housing](#)
- [Food Harvest 2020, A vision for Irish agri-food and fisheries](#)<sup>21</sup>
- [South East River Basin Management Plan](#)<sup>22</sup>
- Waterford Planning and Land Use Transportation Study (PLUTS)<sup>23</sup>
- [Kilkenny 2002-2012, A Strategy for Economic, Social and Cultural Development](#)<sup>24</sup>

In particular, the [South East Regional Planning Guidelines](#)<sup>25</sup> (RPGs) provide a context for the making of this Plan. The [RPGs](#) allocated a projected population growth figure for the county, 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 county. The [RPGs](#) have specified what allocation must be directed to Kilkenny as a hub and Ferrybank as part of the Waterford gateway, but other than that the Council has discretion to distribute the remainder. The Core Strategy of the Plan sets out how all of the population allocation is distributed.

The Plan will set the strategic context for any lower-tier plans, such as Local Area Plans (LAPs) to be prepared in the county. LAPs are in place for Callan, Castlecomer, Fiddown, Ferrybank/Belview, Gowran, Graiguenamanagh, Piltown, Thomastown and Woodstock. The LAPs for Ferrybank and the District Towns will be reviewed following on from adoption of the Plan. LAPs are also in place for Bennettsbridge and Kilmacow and these LAPs are being superseded by the provisions contained in the Plan.

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<sup>17</sup> Department of Environment, Community and Local Government, [National Climate Change Adaptation Framework](#), 2012

<sup>18</sup> Department of the Environment and Local Government, [The National Spatial Strategy 2002-2020, People, Places and Potential](#), 2002

<sup>19</sup> Stationery Office Dublin, [The National Recovery Plan 2011-2014](#), 2011

<sup>20</sup> Government of Ireland, [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#), 2012

<sup>21</sup> Department of Agriculture, Food and the Marine, [Food Harvest 2020, A vision for Irish agri-food and fisheries](#), 2010

<sup>22</sup> South Eastern River Basin District, [South East River Basin Management Plan](#), 2010

<sup>23</sup> Atkins, [Waterford Planning and Land Use Transportation Study 2004-2020](#), 2004

<sup>24</sup> Kilkenny County Development Board, [Kilkenny 2002-2012, A Strategy for Economic, Social and Cultural Development](#), 2002

<sup>25</sup> South East Regional Authority, [Regional Planning Guidelines for the South East Region 2010-2022](#), 2010

### 3 Current state of the environment and do nothing scenario

#### 3.1 Statistical overview of the area

County Kilkenny has a land area of 206,300 hectares. Its population in 2011 was 95,419 and this is projected to increase to 109,802 during the period of this Plan. The populations of the settlements being included in this Plan are as follows:

**Table 3.1 Population 2011**

Settlement	Population 2011
Ballyhale	137
Ballyragget	1,089
Freshford	685
Goresbridge	361
Inistioge	260
Kells	281
Knocktopher	144
Mooncoin	1,166
Mullinavat	259
Slieverue	499
Stoneyford	355
Urlingford	973
Bennettsbridge	729
Kilmacow	627
New Ross	264

#### 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.

11. Biodiversity, Flora and Fauna
12. Population and Human Health
13. Soil
14. Water
15. Air
16. Climatic factors
17. Material Assets
18. Cultural Heritage (architectural and archaeological)
19. Landscape
20. 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

Information on habitats and biodiversity is available from the National Biodiversity Data Centre<sup>26</sup>. Kilkenny also has a Biodiversity Plan which gives details on the types of habitats and species found in Kilkenny.

#### 3.3.1 Designated sites

Habitats in the county, of international and national importance, are designated under EU and national legislation. The five categories of designated site in effect in County Kilkenny are:

- I. Special Areas of Conservation (SAC)  
SAC's have been, and are being, designated under the EU Habitats Directive to conserve habitats and species of European importance.
- II. Special Protection Area (SPA)  
SPAs have been, and are being, designated under the EU Habitats Directive to protect birds which are rare, in danger of extinction or vulnerable to changes in habitat and which need protection.
- III. Natural Heritage Areas (NHA)  
NHA's have been, and are being, designated to conserve habitats and species of national importance and sites of geological interest, under the Wildlife (Amendment) Act, 2000.
- IV. Statutory Nature Reserve  
Nature reserves, designated under the Wildlife Act 1976 and Wildlife (Amendment) Act, 2000, are wildlife habitats which meet certain scientific criteria, are worthy of conservation, and where nature conservation is the primary objective and takes precedence over all other activities.
- V. Wildfowl Sanctuary  
Wildfowl Sanctuaries are designated under the Wildlife Act 1976 and Wildlife (Amendment) Act, 2000 to protect ducks, geese and waders from hunting.

At present there are 36 designated natural heritage sites of international and national importance in County Kilkenny, covering approximately 4.5% of the county. Data is available on all of these sites from the National Parks and Wildlife Service (NPWS), to varying degrees.

All cSAC sites are mapped and have a Site Synopsis, which includes a section on potential threats to the SAC. Threats are outlined in the various Site Synopses as follows:

- Cullahill Mountain: Abandonment of traditional agricultural practices or land reclamation, Intensive or very low grazing levels, use of artificial fertiliser.
- Hugginstown Fen: Draining for cropland, Infilling, Fertiliser pollution, Eutrophication.
- Galmoy Fen: Peat mining, Draining for cropland, Infilling, Fertiliser pollution, Eutrophication
- Spa Hill & Clomantagh Hill: Abandonment of traditional agricultural practices or land reclamation, Intensive or very low grazing levels, use of artificial fertiliser.

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<sup>26</sup> <http://www.biodiversityireland.ie/>

- The Loughans: Nutrient enrichment, Inappropriate grazing regimes.
- Thomastown Quarry: Land reclamation, Drainage, Abandonment
- Lower River Suir: Fragmentation, abundance of alien invasive species, grazing regimes, drainage, eutrophication, infilling and reclamation, weirs, water pollution.
- River Barrow and River Nore: Fragmentation, abundance of alien invasive species, grazing regimes, fishing, water pollution, Eutrophication, Land reclamation, Afforestation, drainage, sea-level rise, weirs, channel maintenance.

SPAs - River Nore Site Code 4233 – threats are outlined as follows: Disturbance, Water Quality, Invasive Species.

Conservation management plans (CMPs) have been devised by the NPWS for some of SACs. For Kilkenny, only one CMP has been completed, for Cullahill Mountain<sup>27</sup>.

All sites are identified on Figure 3.1 (which is the same as Figure 8.1 from the Plan).

Every six years, the NPWS publish a report on the conservation status of habitats and species protected under the Habitats Directive. The last report was published in 2008, as *The Status of EU Protected Habitats and Species in Ireland*. The third assessment report is due for submission in June 2013, and covers the period (2007 – 2012). This report has not been published to date, but some of the information has been released, and this has been incorporated here where available. Table 3.2 sets out the conservation status of each SAC and the SPA by habitats and species.

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<sup>27</sup> NPWS, [Conservation Plan for 2005-2010, Cullahill Mountain cSAC, Site Code 831](#), 2005

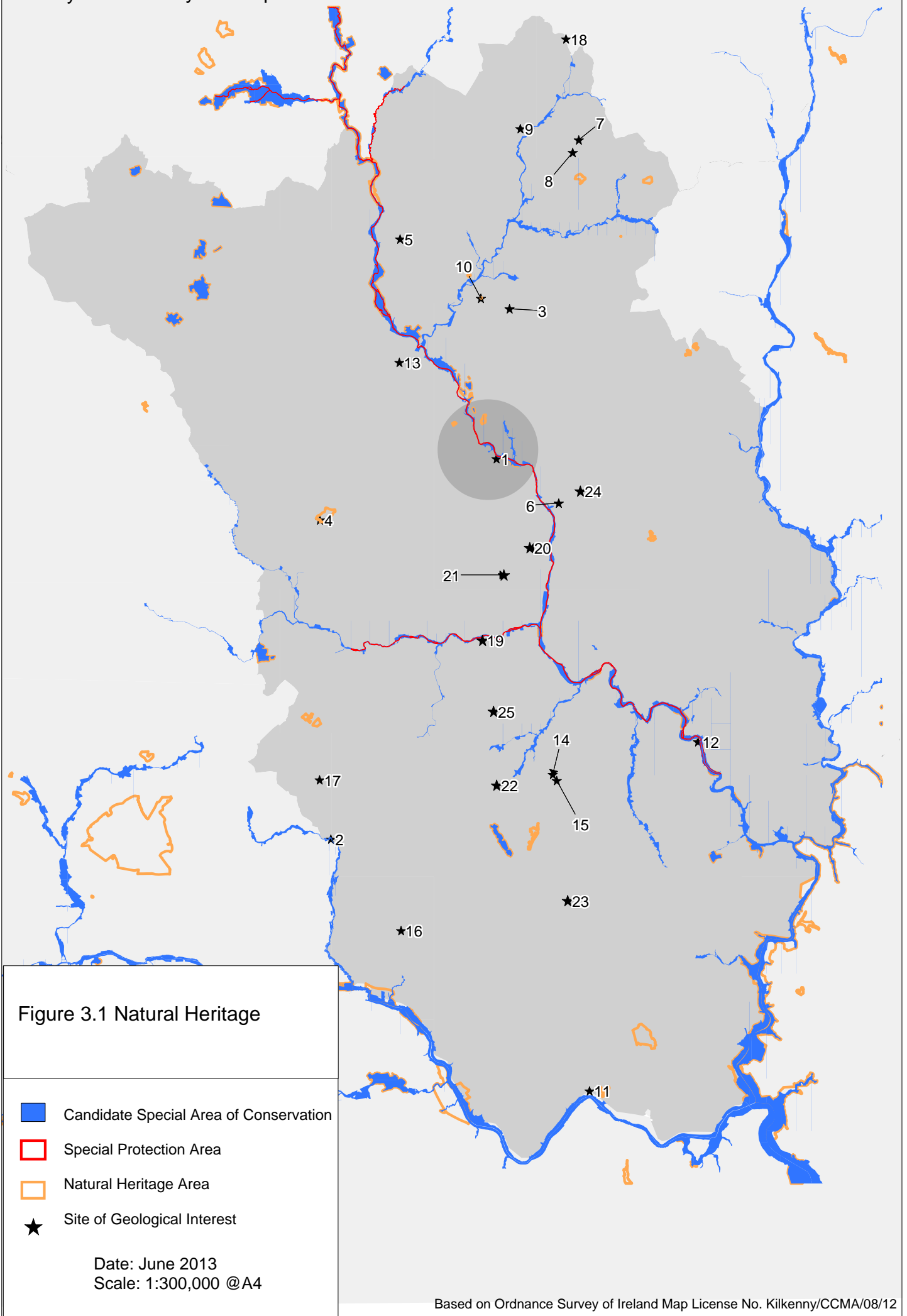


Table 3.2 Conservation status of Natura 2000 sites in Co. Kilkenny							
Site Name	Site Code/Ref	Habitats	Conservation Status		Species	Conservation Status	
			2008	2013		2008	2013
Cullahill Mountain cSAC	000831	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia)(* important orchid sites) [6210]	Bad				
Hugginstown Fen cSAC	000404	Alkaline fens [7230]	Bad				
Galmoy Fen cSAC	001858	Alkaline fens [7230]	Bad				
Lower River Suir cSAC	002137	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	Poor		Margaritifera margaritifera [1029]	Bad	
		Mediterranean salt meadows (Juncetalia maritimi) [1410]	Poor		Austropotamobius pallipes [1092]	Poor	
		Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]	Bad		Petromyzon marinus [1095]	Poor	
		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]	Poor		Lampetra planeri [1096]	Good	
		Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	Bad	If current levels of planting and non-native species removal are maintained, the	Lampetra fluviatilis [1099]	Good	

				overall condition of sessile oak woodlands will continue to improve.				
		Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> )[91E0]	Bad		<i>Alosa fallax</i> [1103]	Bad		
		* <i>Taxus baccata</i> woods of the British Isles [91J0]	Bad		<i>Salmo salar</i> (only in fresh water) [1106]	Bad		
					<i>Lutra lutra</i> [1355]	Poor	Good	
River Barrow & River Nore/ Barrow Estuary/ Abbeyleix Wood Complex cSAC	002162	Estuaries [1130]	Poor		<i>Vertigo moulinsiana</i> [1016]	Bad		
		Mudflats and sandflats not covered by seawater at low tide [1140]	Poor		<i>Margaritifera margaritifera</i> [1029]	Bad		
		<i>Salicornia</i> and other annuals colonizing mud and sand [1310]	Poor		<i>Austropotamobius pallipes</i> [1092]	Poor		
		Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1330]	Poor		<i>Petromyzon marinus</i> [1095]	Poor		
		Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]	Poor			<i>Lampetra planeri</i> [1096]	Good	
						<i>Lampetra fluviatilis</i> [1099]	Good	
						<i>Alosa fallax</i> [1103]	Bad	
						<i>Salmo salar</i> (only in fresh water) [1106]	Bad	
						<i>Lutra lutra</i> [1355]	Poor	Good
						<i>Trichomanes speciosum</i> [1421]	Good	
				<i>Margaritifera durrovensis</i> ( <i>Margaritifera margaritifera</i> ) [1990]	Bad			

River Nore SPA	004233				<i>Alcedo atthis</i> [breeding ] Kingfisher	Amber <sup>28</sup>	
Spa Hill & Clomantagh Hill cSAC	000849	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia)(* important orchid sites) [6210]	Bad				
The Loughans cSAC	000407	Turloughs [3180]	Poor				
Thomastown Quarry cSAC	002252	Petrifying springs with tufa formation (Cratoneurion) [7220]	Bad	Stable			

Source: The Status of EU Protected Habitats and Species in Ireland, 2008

<sup>28</sup> BirdWatch Ireland and the RSPB NI have agreed a list of priority bird species for conservation action on the island of Ireland. These Birds of Conservation Concern in Ireland are published in a list known as the BoCCI List. In this BoCCI List, birds are classified into three separate lists (Red, Amber and Green), based on the conservation status of the bird and hence conservation priority. The **Red List** birds are of high conservation concern, the **Amber List** birds are of medium conservation concern and the **Green List** birds are not considered threatened.



Site Name	Site Code/Ref	cSAC	SPA	pNHA	SNR	WF
Cullahill Mountain	000831	✓				
Hugginstown Fen	000404	✓		✓		
Galmoy Fen	001858	✓		✓		
Lower River Suir	002137	✓				
River Barrow & River Nore/ Barrow Estuary/ Abbeyleix Wood Complex	002162	✓		000698 002076		✓
River Nore	004233		✓			
Spa Hill & Clomantagh Hill	000849	✓				
The Loughans	000407	✓				
Thomastown Quarry	002252	✓				
Archersgrove	002051			✓		
Ardaloo Fen	000821			✓		
Ballykeeffe Woodland	000400			✓	✓	
Barrow River Estuary	000698			✓		
Brownstown Wood	000827			✓		
Clohastia	000830			✓		
Coan Bogs (Designated NHA)	002382			✓		
Dunmore Cave	000401			✓		
Dunmore Complex	001859			✓		
Esker Pits	000832			✓		
Fiddown Island	000402			✓	✓	
Garryrickin Nature Reserve	000403			✓	✓	
Grannyferry	000833			✓		
Ice House near Inistioge	002094			✓		
Inchbeg	000836			✓		
Inistioge	000837			✓		
Kilkeasy Bog	000839			✓		
Kyleadohir Wood Nature Reserve	000405			✓	✓	
Kylecorragh Wood	000842			✓		
Lough Cullin	000406			✓		✓
Lough Macask	001914			✓		
Mothel Church, Coolcullen	000408			✓		
Mount Juliet	000843			✓		
Murphy's of the River	000844			✓		
Newpark Marsh	000845			✓		
Rathsnagadan Wood	000409			✓		
Red Bog, Dungarvan	000846			✓		
Thomastown	000410			✓		
Tibberaghny Marshes	000411			✓		
Whitehall Quarries	000855			✓		

### 3.3.2 Flora and Fauna

A number of species are protected under European and national law, under Annex IV of the Habitats Directive and the Wildlife Acts. Data is available from the National Biodiversity Data Centre on the

occurrence of 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 Kilkenny is included.

The NPWS have produced a number of Species Action Plans for particular species of highest conservation concern as follows;

**Table 3.4: Distribution of species of conservation concern in Kilkenny**

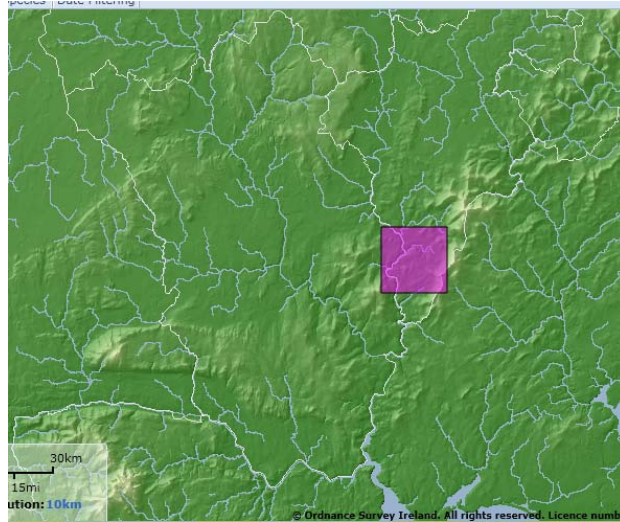
**Species Action Plan**

Species Action Plan Bats 2008

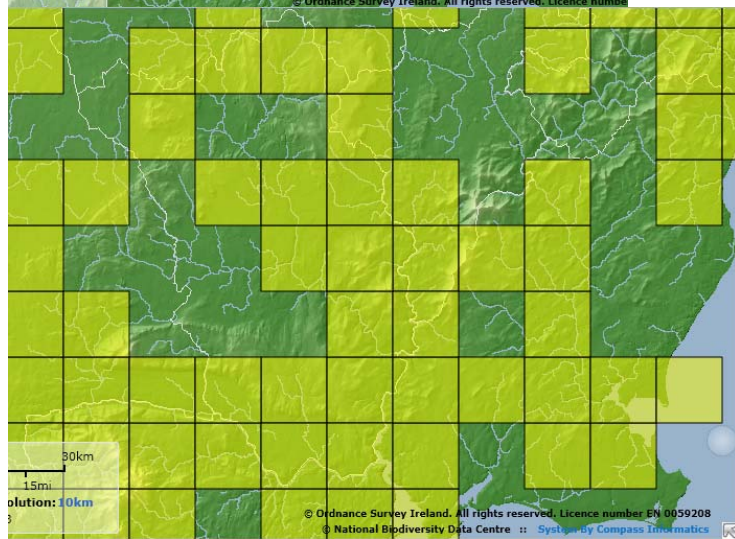
Species Action Plan Killarney Fern 2008

**Distribution in Kilkenny<sup>29</sup>**

Widely found



Species Action Plan Red Squirrel 2008



Species Action Plan Irish Lady's-tresses, Pollan, Hare, Corncrake 2005

Irish Lady's-tresses

Pollan

Hare (*Lepus timidus hibernicus*)

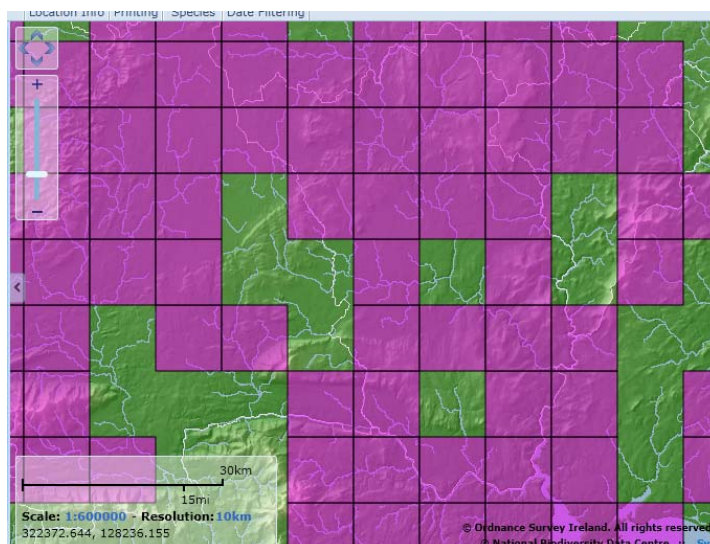
None in Kilkenny

None in Kilkenny

Widely found

<sup>29</sup> [National Biodiversity Data Centre website](#) accessed March 2013

Corncrake



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

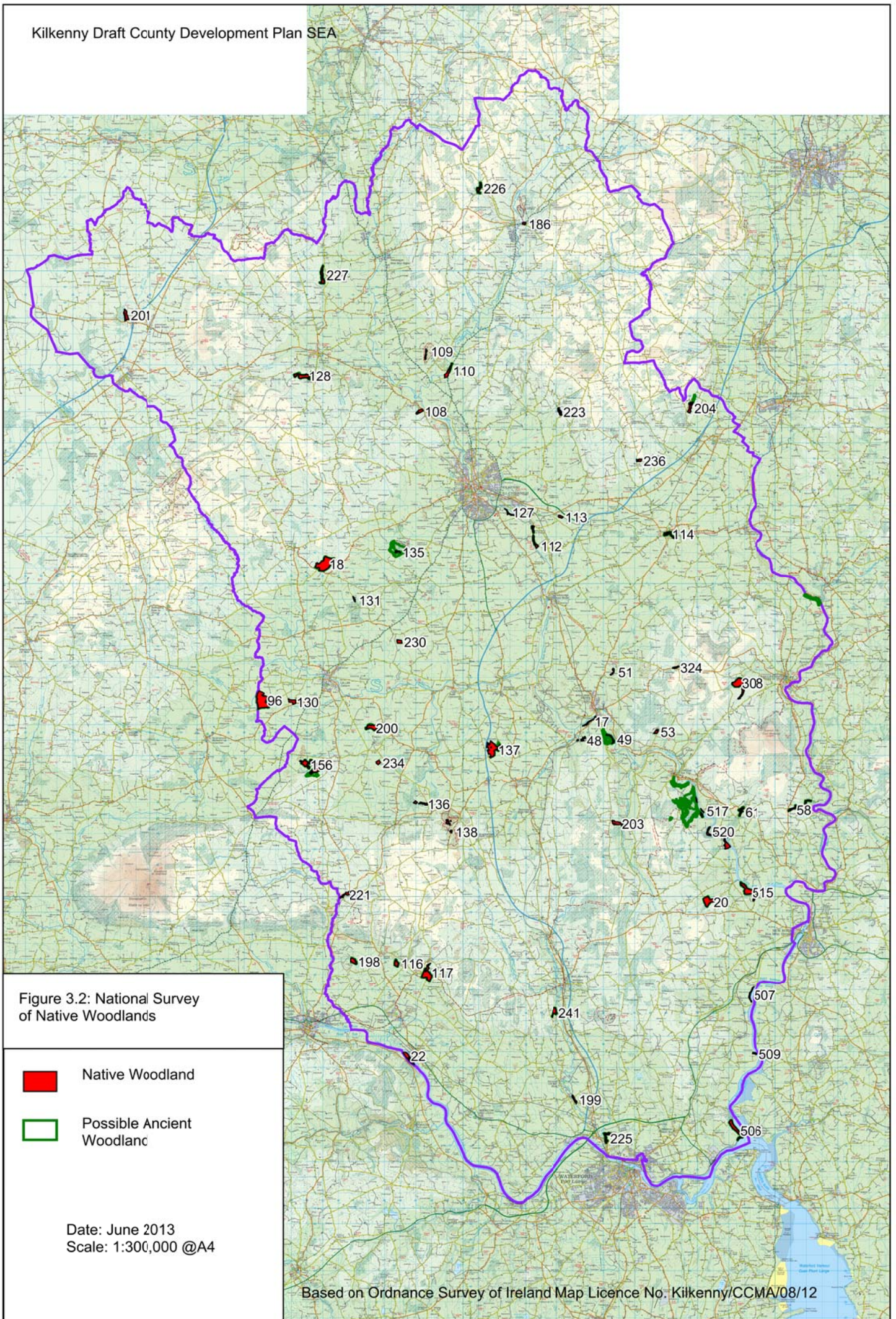
Aquatic flora and fauna is addressed also under Section 3.6.

### 3.3.3 Woodlands, Trees and hedgerows

There are five Tree Preservation Orders in Co. Kilkenny, as follows:

Site	TPO Ref No.
Oldcourt, Inistioge	1/85
Keatingstown	1/84
Barna, Freshford	1/92
Sawney’s Wood, Castlecomer	1/67
Christendom Wood, Ferrybank	1/2008

The National Survey of Native Woodlands (NSNW)  
 The NSNW surveyed a total of 58 sites in Kilkenny as part of the National Survey (BEC consultants 2003-2008), see Figure 3.2. A range of data types from both the general site survey (e.g. area, occurrence of rare species, presence of hydrological features) and a sample dataset of the trees (e.g. structural diversity, regeneration status) was used to produce a conservation score for each of the woodlands surveyed. Eight sites in Kilkenny were categorised as “Very Good” or “Excellent” quality, scoring over 60%, see Table 3.6.



**Table 3.6: NSNW sites scoring over 60%**

Site No.	Woodland Name	%Score
20	Brownstown Wood	60.6
49	Grenan Wood	63.6
96	Kyleadohir Wood	60.6
128	Brown's Wood	60.6
137	Knockadrina	63.6
156	Garryricken North	63.6
200	Ballytobin/Ballaghtobin	63.6
515	Kylecorragh	66.7

A threat score was also produced to give an indication of the threats posed to woodlands from primarily internal sources, such as invasive species infestation. These threat scores should be regarded as the minimum threat potential to Irish woodlands as, for example, sites at which invasive species are a major problem may have failed to meet the criteria for survey. Threat scores above 40% are considered high, and two sites in Kilkenny scored higher than 40%; Maddockstown/Nore Cottage and Greatwood.

<b>Table 3.7: NSNW sites with high threat scores</b>			
Site No.	Woodland Name	%Threat Score	%Conservation Score
112	Maddockstown/Nore Cottage	41.7	54.5
131	Greatwood	50	42.4

#### 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. These are illustrated on Figure 3.2.

#### Tree Register of Ireland (TROI)

The TROI, carried out in 2005, identified approx. 180 significant trees in the county. These are available to view at:

[http://www.kilkennycoco.ie/eng/Services/Digital\\_Mapping/Tree\\_Register\\_of\\_Ireland\\_Survey/](http://www.kilkennycoco.ie/eng/Services/Digital_Mapping/Tree_Register_of_Ireland_Survey/)

#### 3.3.4 Green Infrastructure

Ecological networks are important as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange. Green infrastructure (GI) has been studied as part of the Habitat studies carried out for Ballyragget, Ballyhale, Fiddown, Gowran, Johnstown, Kilkenny, Knocktopher, Mooncoin, Piltown and Urlingford. Hedgerows are an important component of GI and are under threat from farming practices and development in rural areas.

### 3.3.5 Habitats

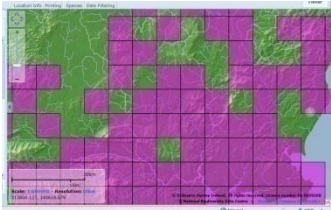
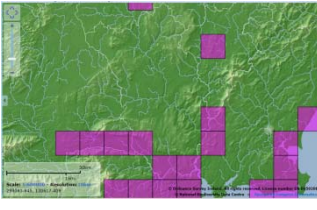
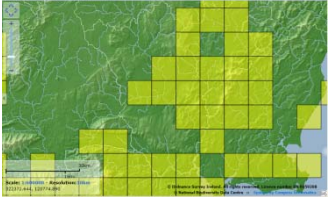
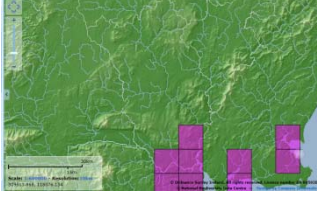
A report on [Habitat Survey and Mapping of Kilkenny City](#) was completed in 2010<sup>30</sup>.

In 2011 a number of habitat and green infrastructure studies were carried out for various smaller settlements in Co. Kilkenny. These studies classified habitats on the Fossitt<sup>31</sup> habitat classification system. They include Ballyragget, Ballyhale, Fiddown, Gowran, Johnstown, Knocktopher, Mooncoin, Piltown and Urlingford. This information was published for Fiddown, Gowran and Piltown as part of the Local Area Plans for those settlements. For the remaining settlements, further work is required to map the habitats and green infrastructural networks.

### 3.3.6 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<sup>32</sup> and from Invasive Species Ireland<sup>33</sup>, 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<sup>34</sup>, 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. The twelve species and their broad distribution within the county<sup>35</sup> are:

Table 3.8: Invasive Species Distribution 2013

Name	Distribution (2013)	Name	Distribution (2013)
Japanese Knotweed (Falopia Japonica)		Least Duckweed (Lemna Minuta)	
Himalayan Balsam (Impatiens Glandulifer)		Common Cord-Grass (Spartina Anglica)	

<sup>30</sup> Kilkenny Local Authorities, [Habitat Survey and Mapping of Kilkenny City Habitat Survey Report](#), 2010

<sup>31</sup> Fossitt, J. A. (2000) *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

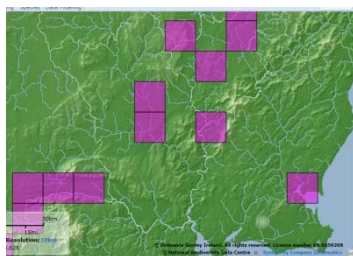
<sup>32</sup> <http://invasives.biodiversityireland.ie/>

<sup>33</sup> <http://invasivespeciesireland.com/>

<sup>34</sup> <http://invasives.biodiversityireland.ie/wp-content/uploads/Dirty-Dozen-invasive-species-Kilkenny-Co-Co-2010.pdf>

<sup>35</sup> Taken from <http://maps.biodiversityireland.ie/#/Map/NbdcTerrestrial/Species/28772> on 9/1/2013

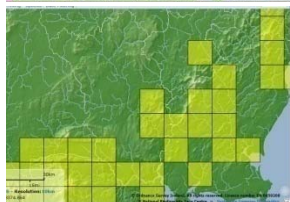
Giant Hogweed (Heracleum Mantegazzianum)



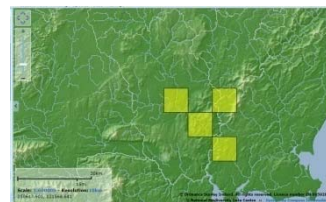
Asian Clam (Corbicula Fluminea)



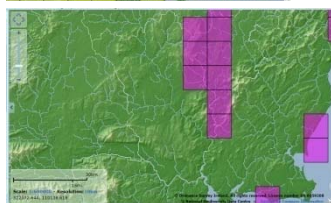
Rhododendron (Rhododendron Ponticum)



Dace (Leuisiscus Leuisiscus)



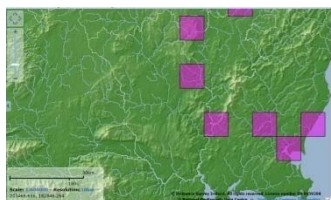
Water fern (Azolla Filiculoides)



Grey Squirrel (Sciurus Carolinensis)



Nuttall's Waterweed (Elodea Nuttallii)



Wild Boar (Sus Scrofa)



### 3.3.7 Land Cover

Land cover is the physical description of what is present on the surface of the land. The CORINE map for Co. Kilkenny provides a digital map of land cover. Corine stands for *Coordination of Information on the Environment* and is a map of the European environmental landscape based on interpretation of satellite images. The Corine Land Cover update of 2006 is shown on Figure 3.3. This shows that the majority of land in County Kilkenny is covered with pasture (light green) and arable land (orange). There are areas of forestry (darker greens), scrub (pink), bogs and moors and peatlands (purple) dispersed throughout the county. In general, there have not been any significant changes in land use since the last Plan, and the CORINE 2000 data. In 2006, artificial surfaces comprised a total of 1.23% of the entire land cover of the county.

### 3.3.8 Existing Problems

- SACs & SPAs – the conservation status of most of the habitats and species in the Natura 2000 sites in the county is either poor or bad.
- As three of the county's main rivers are designated Natura 2000 sites, with the conservation status ranging from Poor to Bad, water quality is a hugely significant issue for Co. Kilkenny.
- Continued replacement of natural and semi-natural habitats with artificial surfaces results in loss of non-designated flora and fauna
- Removal of hedgerows results in a loss of GI and connections
- Invasive species pose a threat to biodiversity in the county.

# Kilkenny Draft County Development Plan

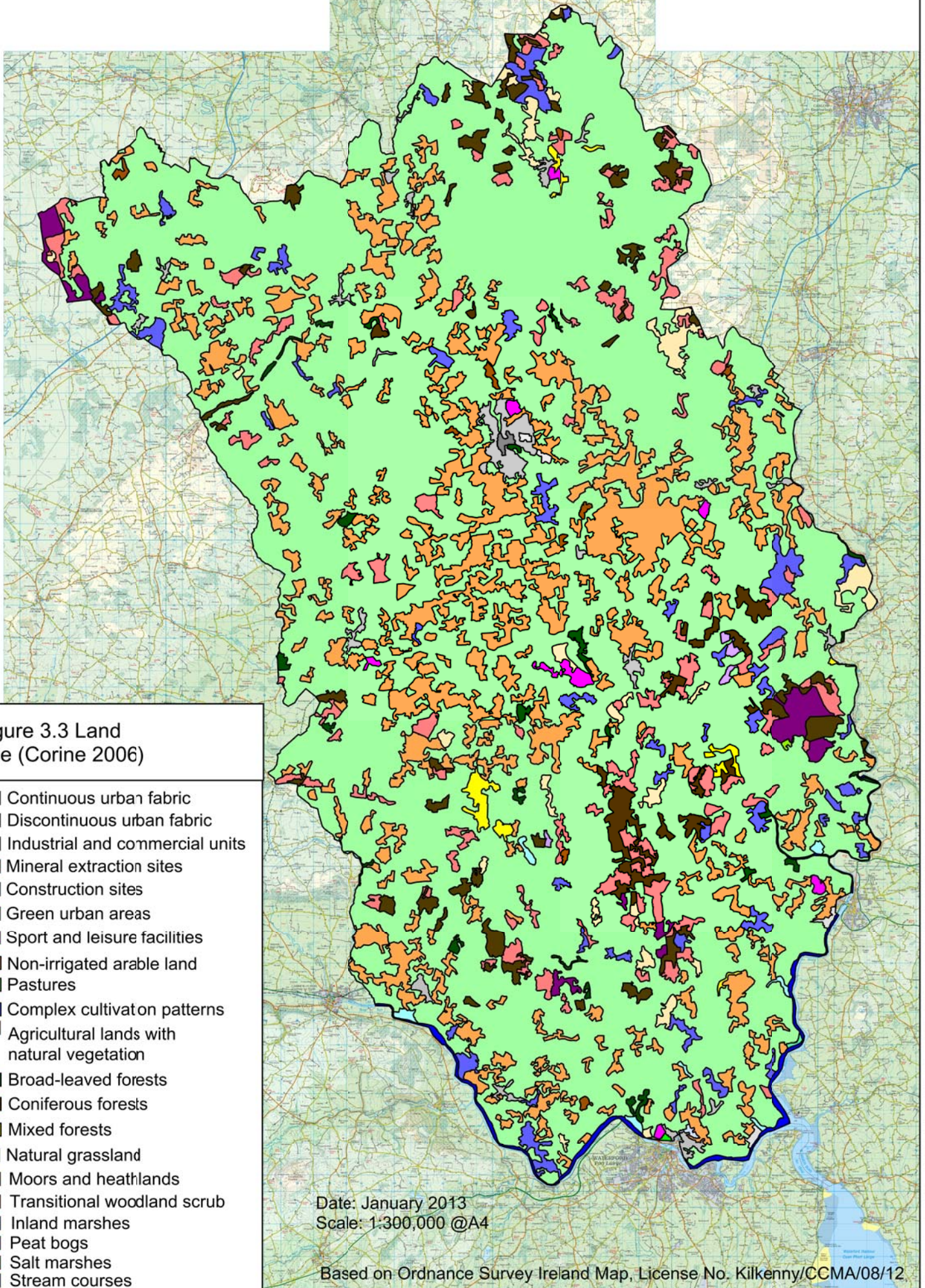


Figure 3.3 Land Use (Corine 2006)

- Continuous urban fabric
- Discontinuous urban fabric
- Industrial and commercial units
- Mineral extraction sites
- Construction sites
- Green urban areas
- Sport and leisure facilities
- Non-irrigated arable land
- Pastures
- Complex cultivation patterns
- Agricultural lands with natural vegetation
- Broad-leaved forests
- Coniferous forests
- Mixed forests
- Natural grassland
- Moors and heathlands
- Transitional woodland scrub
- Inland marshes
- Peat bogs
- Salt marshes
- Stream courses

Date: January 2013  
 Scale: 1:300,000 @A4

Based on Ordnance Survey Ireland Map, License No. Kilkenny/CCMA/08/12



## 3.4 Population and Human Health

### 3.4.1 Population Distribution

County Kilkenny's population continues to grow, from 87,558 in 2006 to 95,419 in 2011, a 9% increase. The Core Strategy in the 2008-2014 Plan sets out the settlement hierarchy for the county. This is shown on Figure 3.4.

Figure 3.5 shows the rates of population change over the period 2006 to 2011. The northern part of the county is the area with the lowest growth. The highest growth rates have been occurring to the northwest of Kilkenny city, and also in the south, in Ferrybank and north of Glenmore.

In general, the Core Strategy of the last Plan aimed to direct population growth into the urban settlements where services and infrastructure are available. Although in general this aim was successful, some urban areas experienced population decline, such as in Castlecomer and Kilkenny No. 2 Urban, which is within the Borough boundary in Kilkenny city.

For Kilkenny No. 2 Urban this population loss is a continuing trend, and in total it has experienced a 12% decrease since 1996.

In contrast, some rural EDs, particularly those surrounding Kilkenny city, experienced very high rates of increase, despite having no designated settlement.

The urban area with the highest growth over this period was the area of Kilculliheen in Ferrybank, which experienced a growth of 198% between 1996 and 2011.

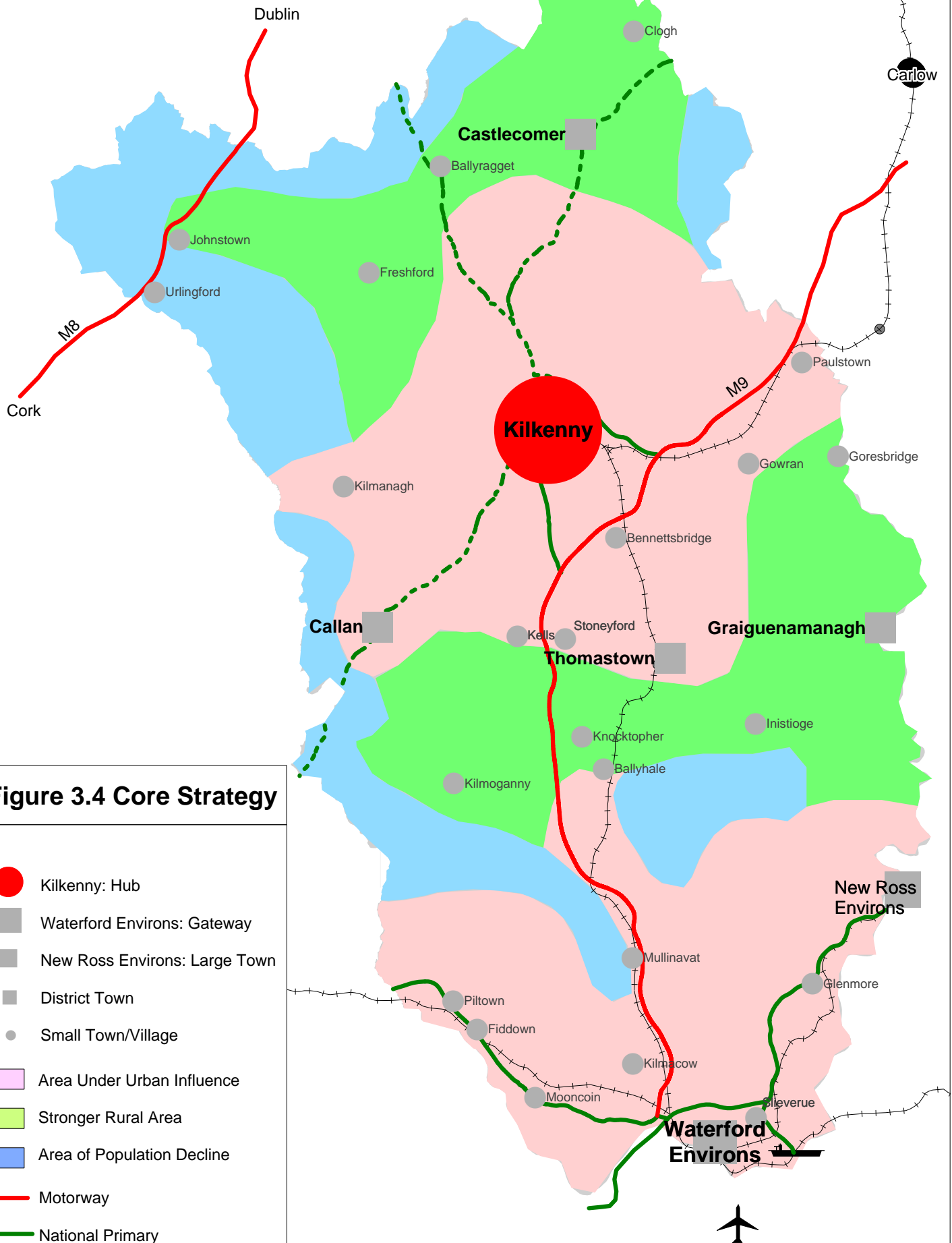
The Core Strategy of the current Plan, as set out in Chapter 3, is shown in Table 3.9.

Settlement	Core strategy population allocation
County Kilkenny	8,726
Kilkenny City	1,800
Ferrybank/Belview (Part Gateway)	1,000
<b>District Towns</b>	
Callan	2% (174)
Castlecomer	1.7% (148)
Graigenamanagh	1.3% (113)
Thomastown	2.1% (183)
Remainder area to include smaller towns and villages and environs of New Ross and the rural area of the county	5,602
Total	8,726

### 3.4.2 Human health

Availability of spatial data on human health on a county basis is limited; however a key area for consideration is the interrelationships 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.

# Kilkenny Draft County Development Plan 2014-2020



**Figure 3.4 Core Strategy**

- Kilkenny: Hub
- Waterford Environs: Gateway
- New Ross Environs: Large Town
- District Town
- Small Town/Village
- Area Under Urban Influence
- Stronger Rural Area
- Area of Population Decline
- Motorway
- National Primary
- National Secondary
- Railway

Date: June 2013  
Scale: 1: 300,000 @A4

Based on Ordnance Survey of Ireland Map Licence No. Kilkenny/CCMA/08/12

# Kilkenny Draft County Development Plan 2014-2020

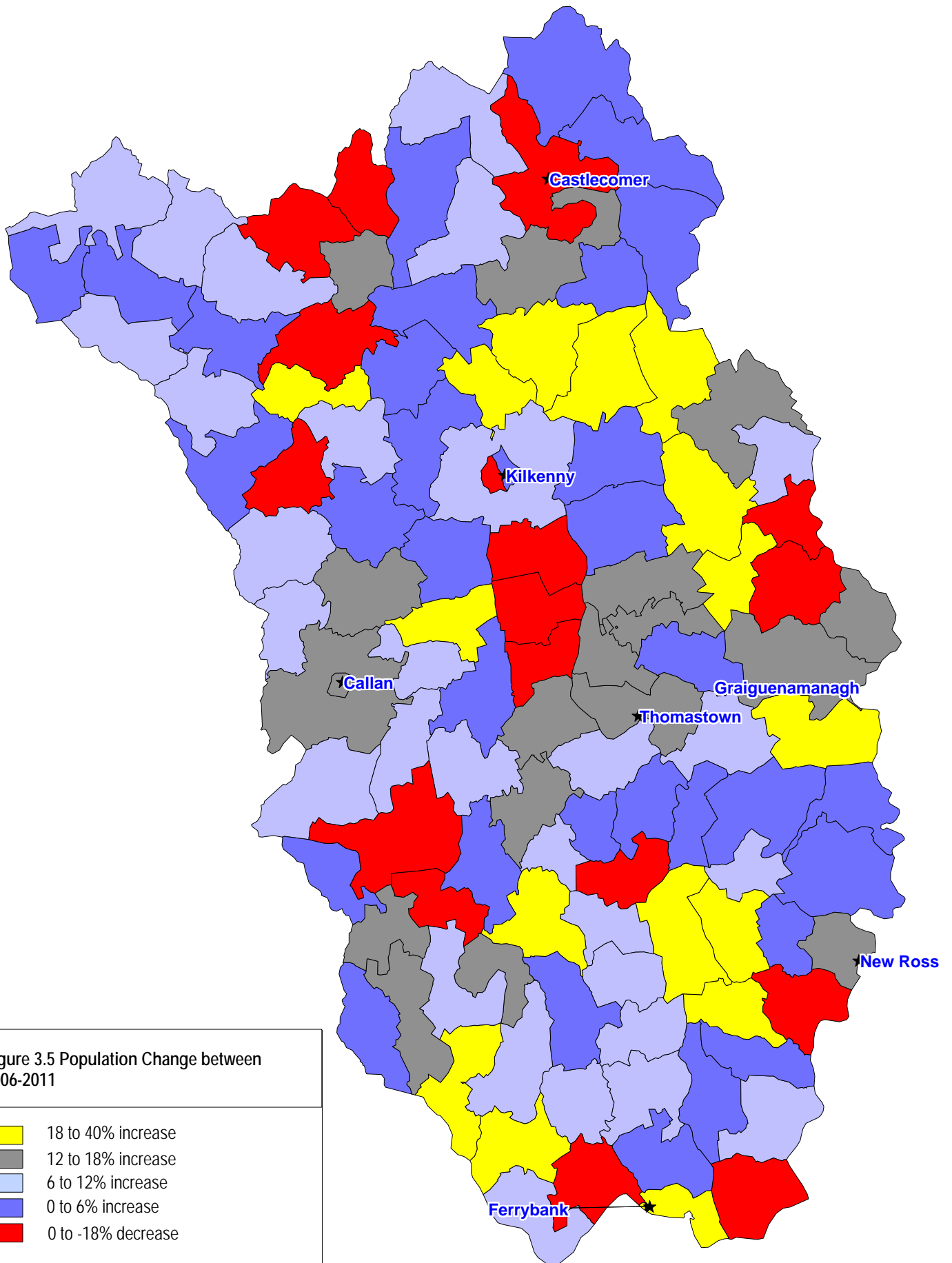


Figure 3.5 Population Change between 2006-2011

- 18 to 40% increase
- 12 to 18% increase
- 6 to 12% increase
- 0 to 6% increase
- 0 to -18% decrease

Date: April 2013  
Scale: 1: 300,000 @A4

Based on Ordnance Survey Ireland Map Licence No "CCMA/08/12"

### 3.4.2.1 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 are a total of 3 Seveso (Control of Major Accident Hazards Directive) sites in the county; Grassland Fertilisers (Kilkenny) Ltd. Palmerstown on the Tullaroan Road in Kilkenny City, Nitrofert Ltd, Raheen, near New Ross and Trans-Stock Warehousing and Cold Storage in Christendom, Ferrybank. As the City Development Plan will cover the Grasslands site, and the Ferrybank Local Area Plan covers the Trans-Stock site, the Nitrofert site is the one of most relevance to this Plan.

There are also two sites in Co. Wexford's administrative area, which are in close proximity to Co. Kilkenny. These sites (Goulding Chemicals Ltd, Stokestown, New Ross and SEE Generation Ireland Ltd., Campile) must be also taken into account in land use planning.

### 3.4.3 Waste Management

The issue of waste is now dealt with on a regional basis, and there is a Joint Waste Management Plan in place for the South East Region. 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](#)<sup>36</sup>. There is also a Litter Management Plan in place for the County (2012-2014). As this issue is addressed by other plans, it is not considered that this requires further detail here.

Local Authorities are required to identify historic waste disposal or recovery sites and to place them on a register. Non-hazardous sites are to be placed on the Section 22 Register and hazardous sites are to be placed on the Section 26 register. Once sites are on the registers, there is a requirement to carry out risk assessments. A total of 13 sites have been identified in Kilkenny<sup>37</sup> (See Figure 3.6). Phase 1 risk assessments have been carried out and the sites have been classified as follows: 1 at high risk, 6 at medium risk, and 6 at low risk. A Phase 2 Risk Assessment has been carried out for the high risk site, and a Phase 3 assessment will be carried out later this year. It is intended that further phases of risk assessments will be carried out for the remainder of the sites as resources allow.

### 3.4.4 Existing Problems

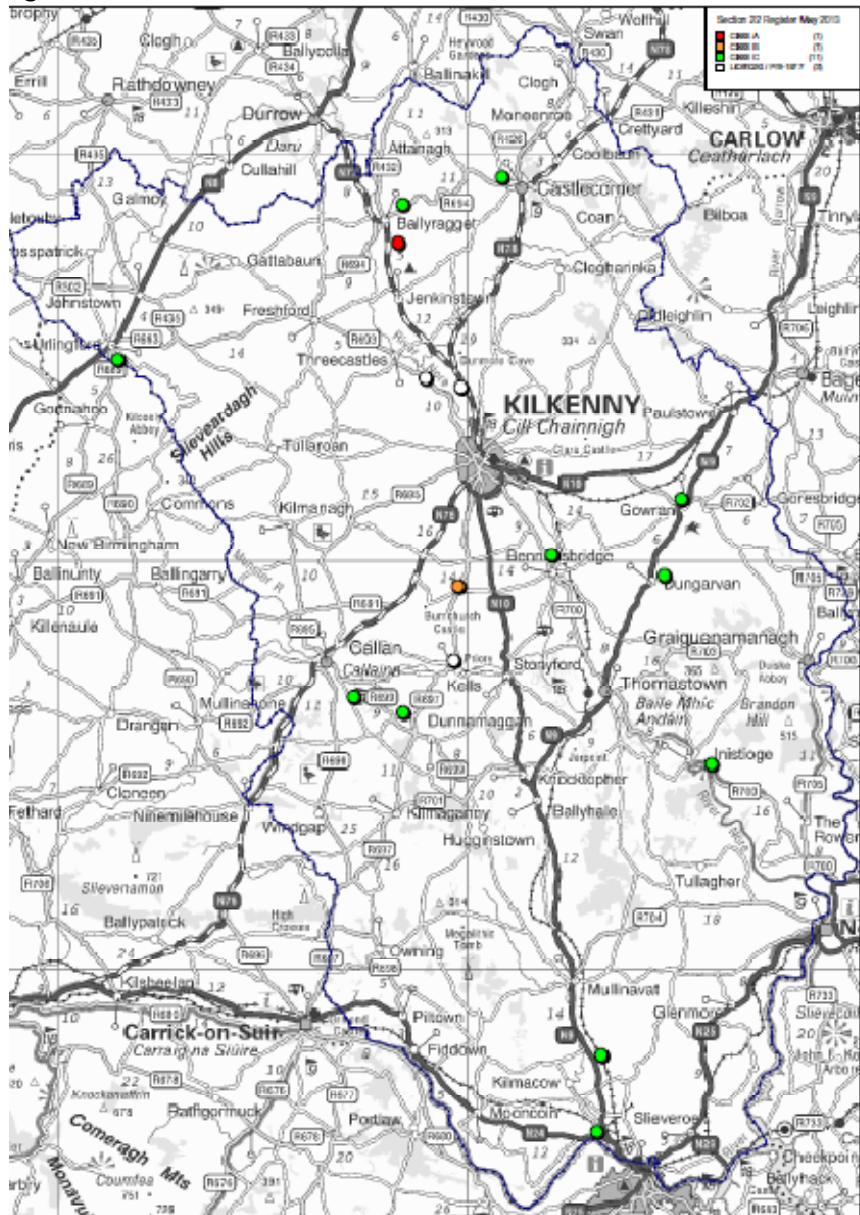
- In terms of population distribution, the Settlement hierarchy, and Core Strategy of the last Plan has not succeeded in focusing most of the growth into urban areas. The decline in population in some urban areas, like Kilkenny city's inner area and Castlecomer, is of concern. The large level of increase in population growth in some rural areas is also of concern, as these areas are not serviced by social or physical infrastructure. Also, rapid population growth, such as that in Kilkulliheen, may cause problems if the associated infrastructural and social services are not provided in tandem with the growth.
- Seveso (COMAH) sites in New Ross must be provided for in the land use zoning map for New Ross Environs.
- Risk assessments have not been completed for sites on the EPA Section 22 Register of non-licensed closed landfills (i.e. historic unregulated waste disposal sites).

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<sup>36</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

<sup>37</sup> South Tipperary County Council, [Report on the Evaluation of the Joint Waste Management Plan for the South East Region, 2006](#), November 2012

Figure 3.6: Section 22-26 sites



### 3.5 Soil

Soils and subsoils maps for the county were created by the Spatial Analysis Unit, Teagasc. The project was completed in May 2006 and was a collaboration between Teagasc, Geological Survey of Ireland, Forest Service and the EPA<sup>38</sup>. Soil maps are available on the [EPA's website](#).

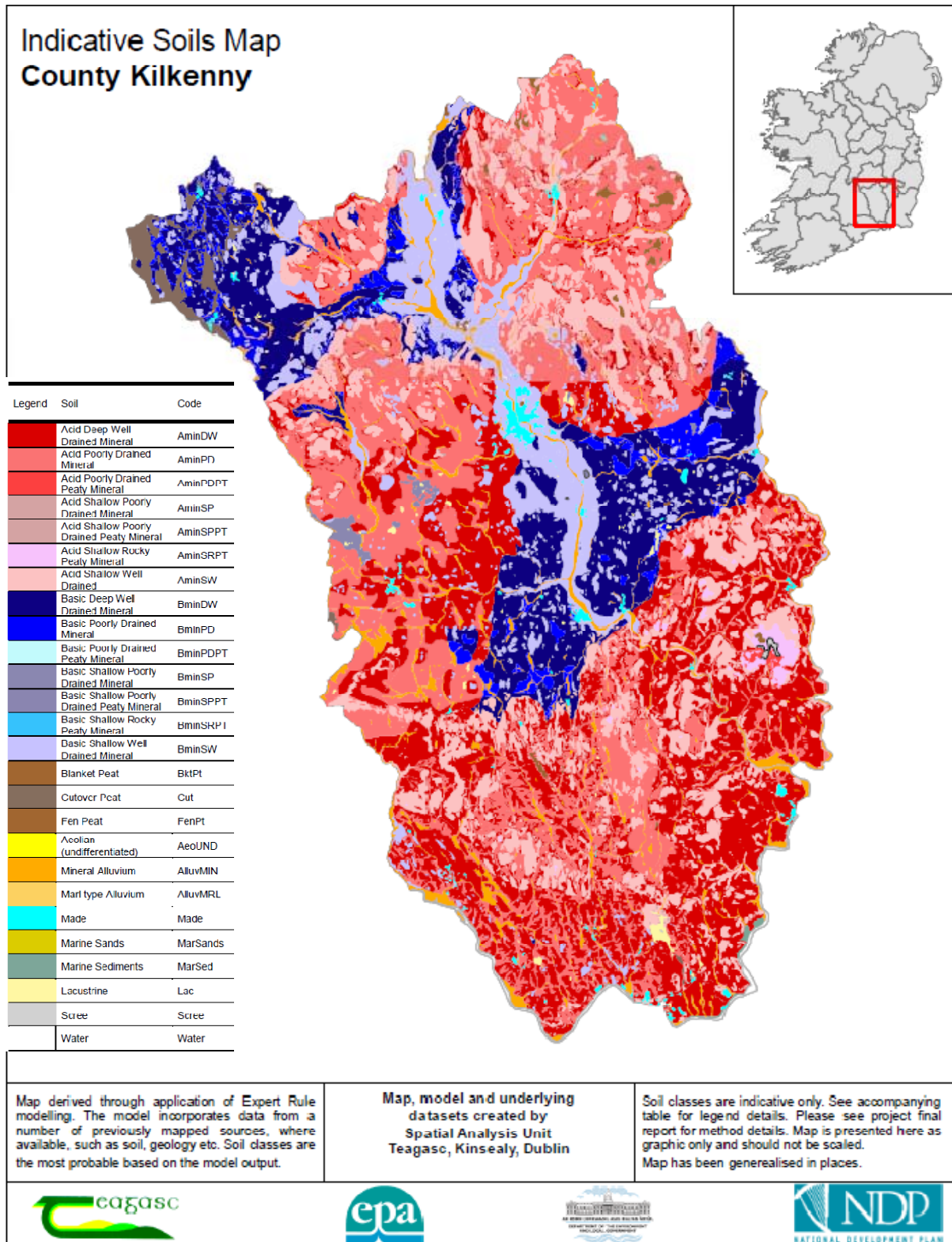
The soils map for Kilkenny, Figure 3.7, shows that the south of the county is dominated by AminDW, which is in the Acid Brown Earths/Brown Podzolics soil group. The centre and northwest of the county contains a swathe of BminDW - Grey Brown Podzolics/ Brown Earths Basic and BminPD - Surface water Gleys / Ground water Gleys. Along the county's rivers are found BminSW - Renzinas / Lithosols. The north of the county is dominated by AminPD - Surface water Gleys / Ground water Gleys. The general properties of the main soil groups found in Co. Kilkenny are set out in the Table 3.10 below.

Table 3.10: Soil Groups in Co. Kilkenny				
Soil Description	Code	Included Great Soil Groups	General Properties	
<b>Deep well drained mineral</b>				
Derived from mainly non-calcareous parent materials	AminDW	Acid Brown Earths	Most occur on lime-deficient parent materials, therefore acidic in nature, relatively mature and well drained	
		Brown Podzolics	Good physical characteristics	
Derived from mainly calcareous parent materials	BminDW	Grey Brown Podzolics	Usually formed from calcareous parent material which counteracts the effects of leaching, can be light to heavy textured	
		Brown Earths (medium-high base status)	Most occur on lime-deficient parent materials, therefore acidic in nature, relatively mature and well drained	
<b>Shallow well drained mineral</b>				
Derived from mainly calcareous parent materials	BminSW	Renzinas	Shallow soils, usually no more than 50cm depth, usually derived from limestone parent material, use limited by shallow depth	
		Lithosols	Skeletal stony soils usually overlying solid or shattered bedrock, use limited to rough grazing and forestry	
<b>Deep poorly drained mineral</b>				
Derived from mainly non-calcareous parent materials	AminPD	Surface water Gleys Ground water Gleys	Developed under the influence of permanent or intermittent waterlogging, impervious with poor physical structure, unsuitable for cultivation or intensive grazing	
Derived from mainly calcareous parent materials	BminPD	Surface water Gleys Ground water Gleys	Developed under the influence of permanent or intermittent waterlogging, impervious with poor physical structure, unsuitable for cultivation or intensive grazing	

Source: Spatial Analysis Group, Teagasc, EPA Soil and Subsoil Mapping Project, 2006

<sup>38</sup>Teagasc Spatial Analysis Unit, EPA Soils and Subsoils Mapping project Final Report

Figure 3.7: Indicative Soils Map, Co. Kilkenny



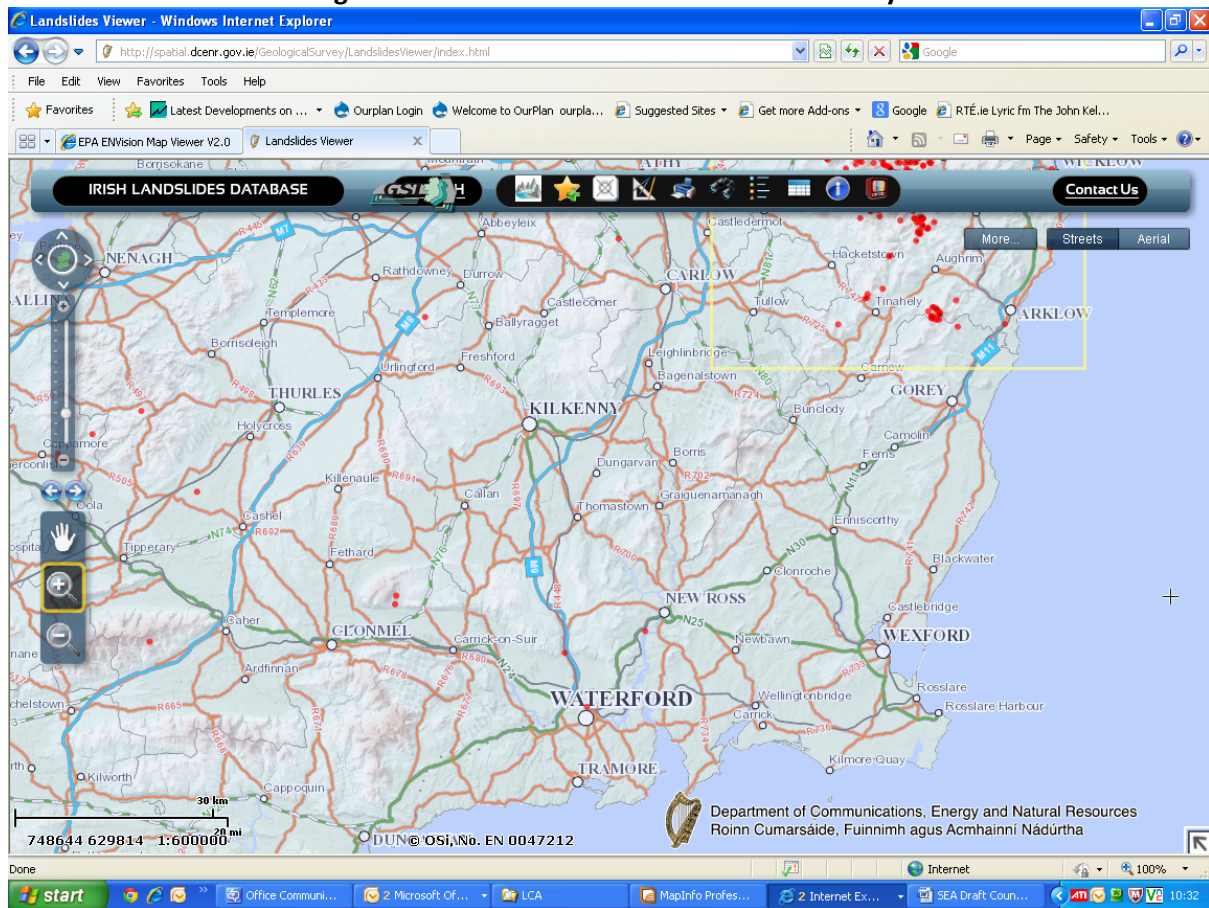
There is no national soil protection strategy. The EU Commission set up the Thematic Group for Soil Strategy in 2004 to identify the potential threats to soil function. Its analysis identified six soil degradation processes that impact on soils; soil sealing, erosion, organic matter decline, compaction, salination and landslides. While a number of these processes are naturally occurring, human activity can be an additional driver of degradation through poor land management.

### 3.5.1 Landslides

The GSI maintain a [National Landslide Database](#). According to the GSI, it is likely that in the future there will be increased landslide activity as development increases and expands into potentially hazardous areas. It is also predicted that climate change will result in increased landslide hazard. To date, two landslides have been recorded in Co. Kilkenny; in Rossinan, Mullinavat and in Forestalstown, Glenmore. In addition, two more have occurred near the county boundary, one in Sally Park in Waterford City and one in Cullahill, Co. Laois, see Figure 3.8 below.

Landslide susceptibility mapping has not yet been produced for Ireland.

**Figure 3.8: Location of landslides in Co. Kilkenny**



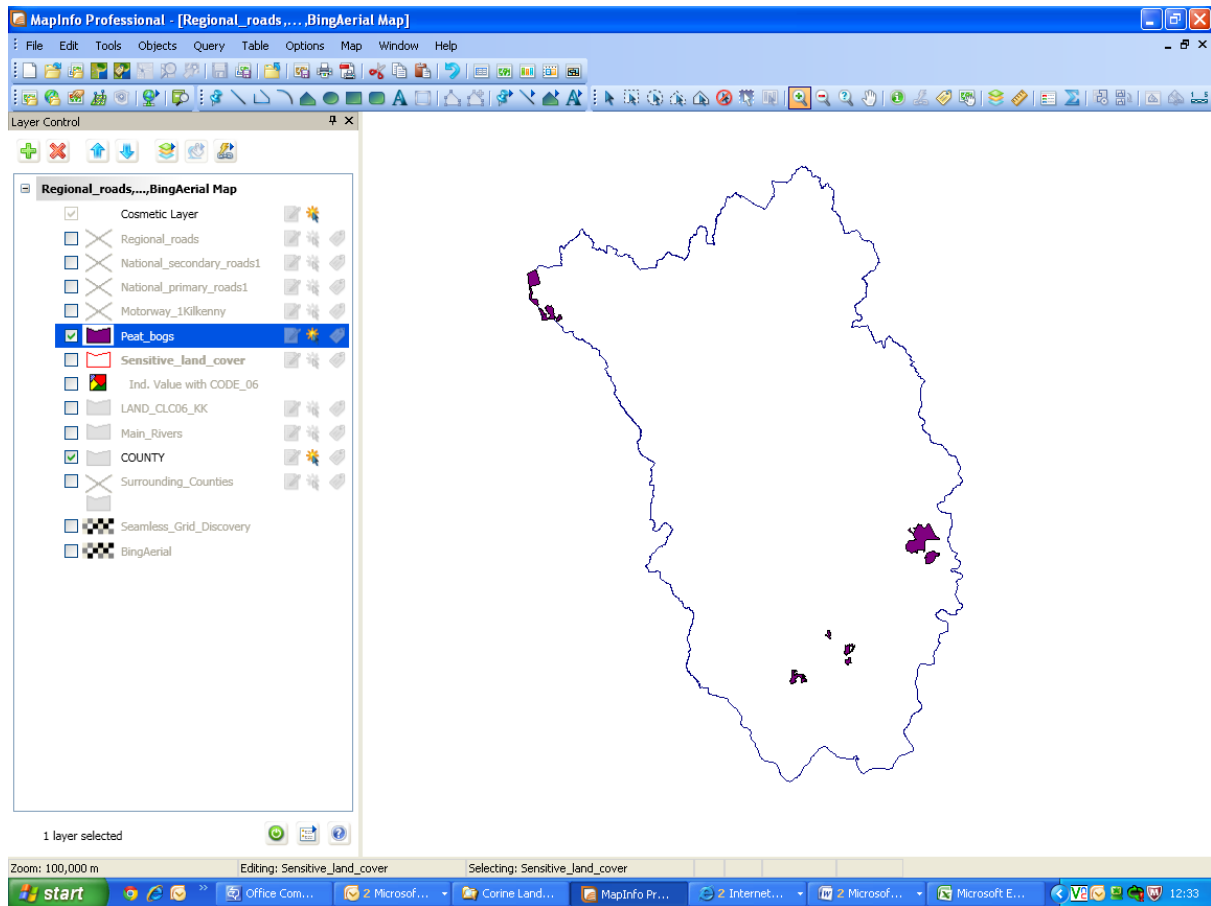
### 3.5.2 Peatland

Peatlands are important ecosystems sustaining a range of animal and plant species. The distribution of peatland in Kilkenny is shown on Figure 3.9 below. This amounted to approximately 1.3% of the



total land area of Co. Kilkenny in 2006. There is no industrial extraction of peat for energy and horticulture in Kilkenny, however damage to peatland can occur from domestic peat extraction, afforestation, wind farms, recreational activities and invasive species.

**Figure 3.9: Location of Peatlands in Co. Kilkenny**



### 3.5.3 Geology

According to the GSI, the underlying bedrock geology of Kilkenny is dominated by Lower Carboniferous rocks, mostly of limestone, which were formed at a time when Ireland was almost completely submerged in tropical waters. To the south of this main body of limestone are older sedimentary and igneous rocks that have formed in a variety of geological environments over the past 500 million years. Some of the last sediments in Kilkenny accumulated during the Quaternary period (1.6 million years ago to present) when a series of large ice sheets moved over Ireland, depositing glacial till (clay, sand and gravel) and scouring the underlying bedrock to give Kilkenny much of its present day geomorphological characteristics<sup>39</sup>.

#### 3.5.3.1 County Geological Sites

A list of County Geological Sites was developed in partnership with the Geological Survey of Ireland and designated in 2007, these are shown on Figure 3.1.

#### 3.5.3.2 Aggregate Potential Mapping

As part of a National Development Plan funded programme, Aggregate Potential Mapping (APM) has been carried out by the GSI for County Kilkenny<sup>40</sup>. Aggregate consists of any hard, inert material, used in variously-sized fragments, either loose or in bound form, in the building of roads and other construction. Aggregate in Ireland is acquired from (a) sands and gravels, known as granular, and (b) bedrock which is blasted and crushed in quarries. The APM has identified both the Granular Aggregate Potential (GAP) and the Crushed Rock Aggregate Potential (CRP).

The GAP map, Figure 3.10, shows very high potential in the north of the county, along the Rivers Nore, Dinin and Nuenna. The CRP map, Figure 3.11 shows great variation throughout the county in levels of potential.

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<sup>39</sup> Aaron Clarke, Matthew Parkes and Sarah Gatley. GSI, *The Geological Heritage of Kilkenny An audit of County Geological Sites in Kilkenny*, 2007

<sup>40</sup> <http://spatial.dcenr.gov.ie/APM/index.html>

Figure 3.10: Granular Aggregate Potential (GAP)

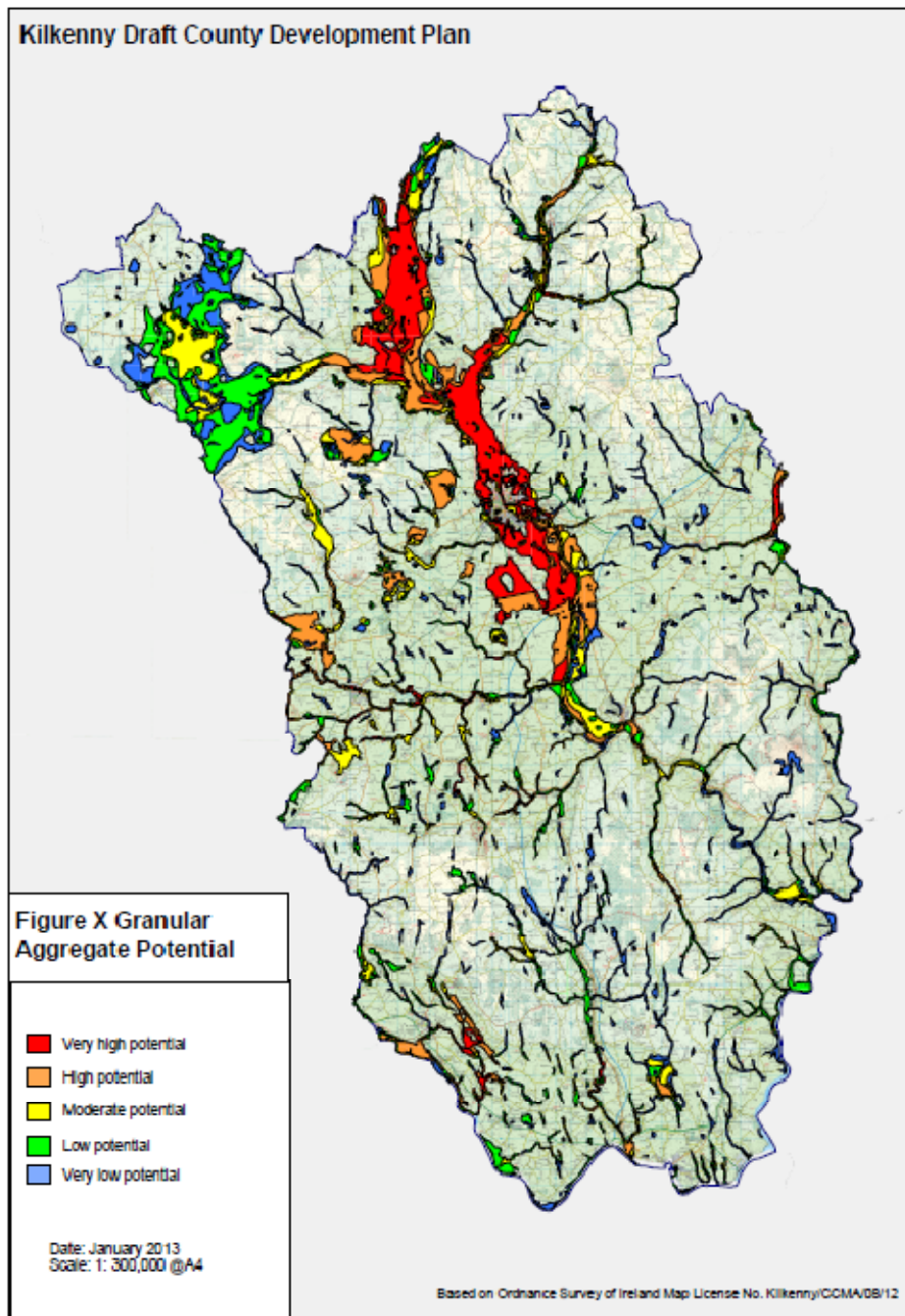
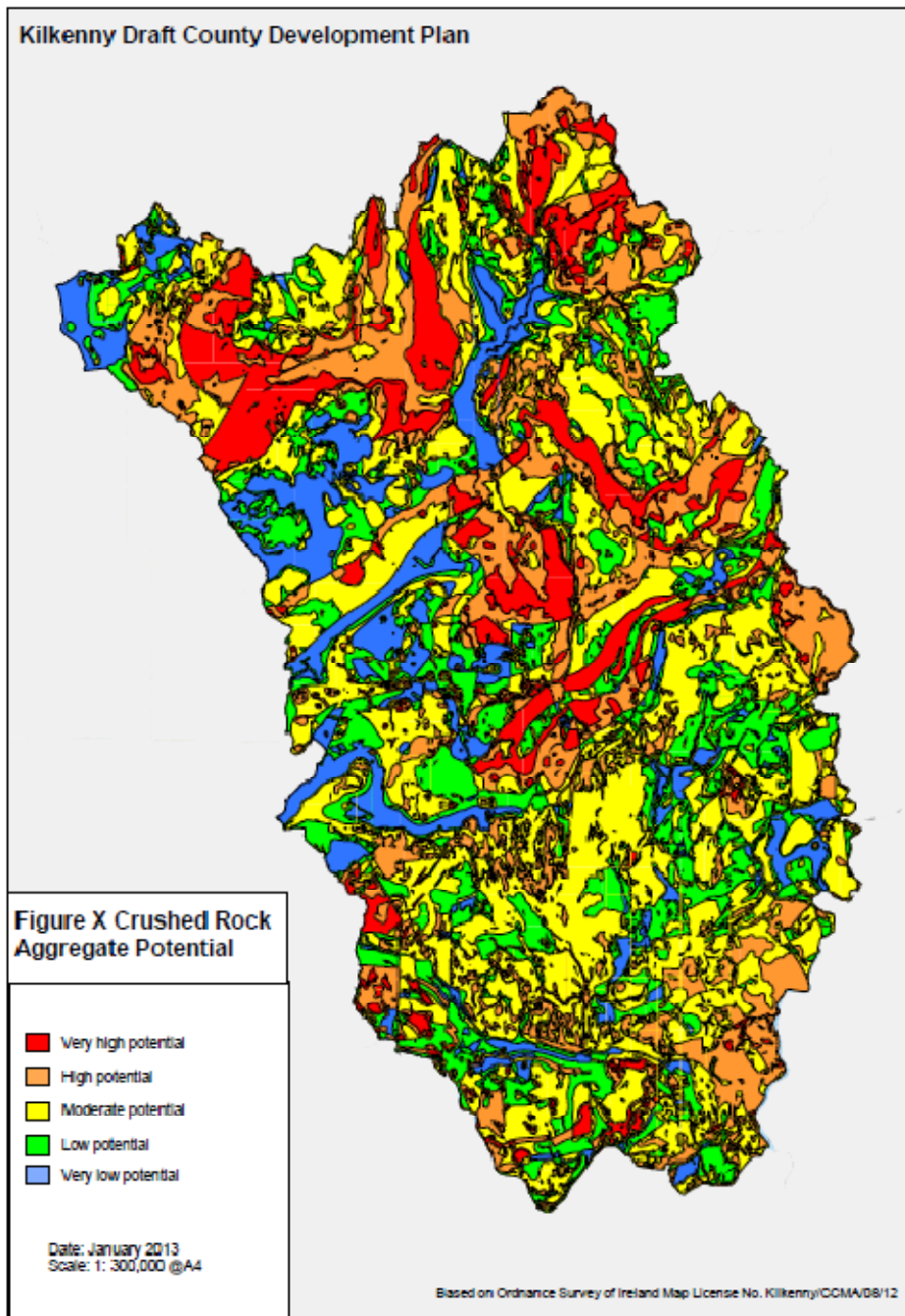


Figure 3.11: Crushed Rock Aggregate Potential (CRP)

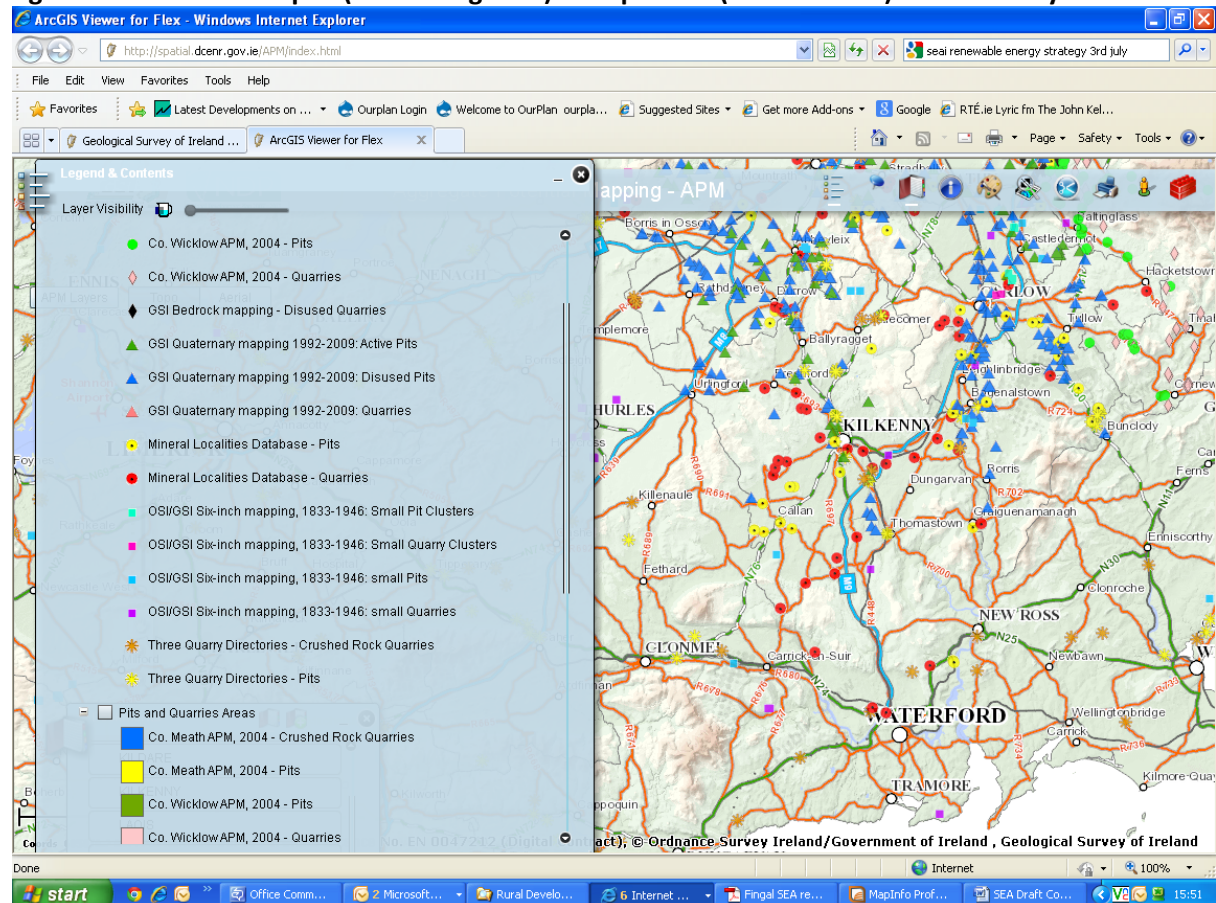


### 3.5.3.3 Extractive Industries

The Geological Survey of Ireland maintains a record of all pits (sand and gravel) and quarries (crushed rock) in the country, see Figure 3.12.

There is one mine in Kilkenny, at Galmoy. This was an underground zinc mine and operated from for over a twenty year period, however production has now ceased at the site and the mine is in closure mode.

**Figure 3.12 Location of pits (sand and gravel) and quarries (crushed rock) in the county**



Source: <http://spatial.dcenr.gov.ie/APM/index.html>

### 3.5.4 Existing Problems

- Landslides have occurred in two sites in Co. Kilkenny, landslide susceptibility mapping has not been produced.
- Peatland continues to be disturbed by various activities and invasive species.

## 3.6 Water

This topic can be broken down under various headings, as set out below.

### 3.6.1 Water Framework Directive

The [Water Framework Directive](#)<sup>41</sup> established 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<sup>42</sup>.

Water in the District 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 at <http://gis.epa.ie/Envision/>.

#### 3.6.1.1 Groundwater quality

Groundwater is categorised as good status throughout the county. This is an improvement from the [South East River Basin Management Plan](#) in 2010, when two groundwater bodies, Waterbody IE\_SE\_G\_059 on the Laois border and the area around Newrath, Waterbody IE\_SE\_G\_150, were classified as Poor.

#### 3.6.1.2 Surface water quality

The [South East River Basin Management Plan](#) noted that two rivers in the county were classified as Bad status, the River Nore south of Thomastown IE\_SE\_15\_1994\_7 and the River Gowran (IE\_SE\_14\_1879), which is a tributary of the Barrow. As at 24/1/2013, no river in the county is classified as Bad status, but a number of rivers are classified as Poor, see Figure 3.13. Two sections of the River Nore, forming part of the cSAC and SPA, are classified as Poor.

Information on trends in river water quality is available from the EPA [Report on River Water Quality in County Kilkenny](#)<sup>43</sup>. This shows that since 2008, river water quality has remained relatively stable, with a decrease in the number of unpolluted rivers, but also a decrease in the number of seriously polluted rivers.

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<sup>41</sup> [Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy](#)

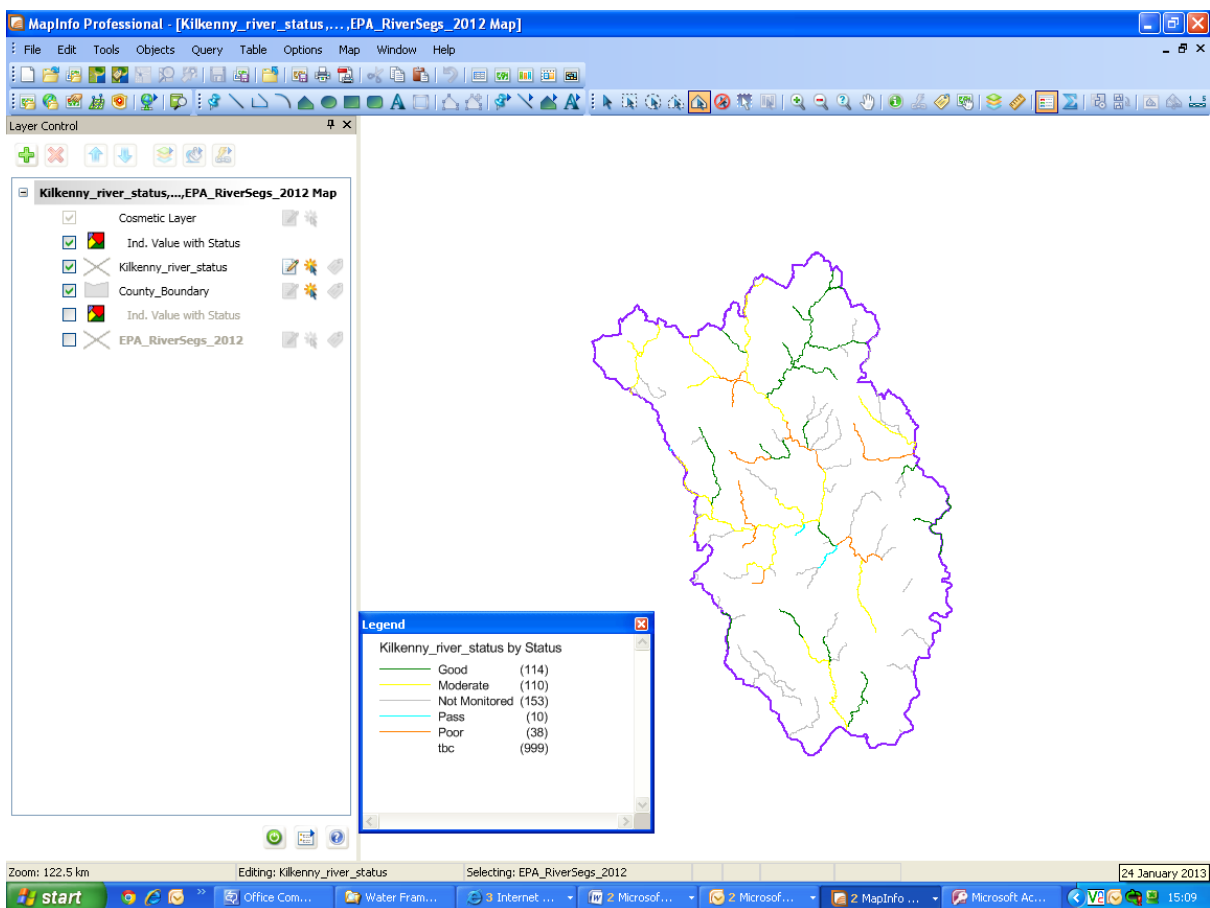
<sup>42</sup> South Eastern River Basin District, [South East River Basin Management Plan \(Water Matters\) 2009-2015](#), 2010

<sup>43</sup> Environmental Protection Agency, [Integrated Water Quality Report 2011 – South East Ireland Report on River Water Quality in County Kilkenny](#) 2011

**Table 3.11: Water quality in Co. Kilkenny 2008-2011**

Year	Number of Rivers Monitored	Total Number of Sample Stations	Number of Sample Stations in each category			Percent of Sample Stations in each Category		
			Polluted	Moderately Polluted	Seriously Polluted	Un-Polluted	Moderately Polluted	Seriously Polluted
2008	27	76	54	21	1	71.1%	27.6%	1.3%
2009	25	82	57	23	2	69.5%	28.0%	2.4%
2010	25	73	45	27	1	61.6%	37.0%	1.4%
2011	25	70	48	22	0	68.6%	31.4%	0.0%

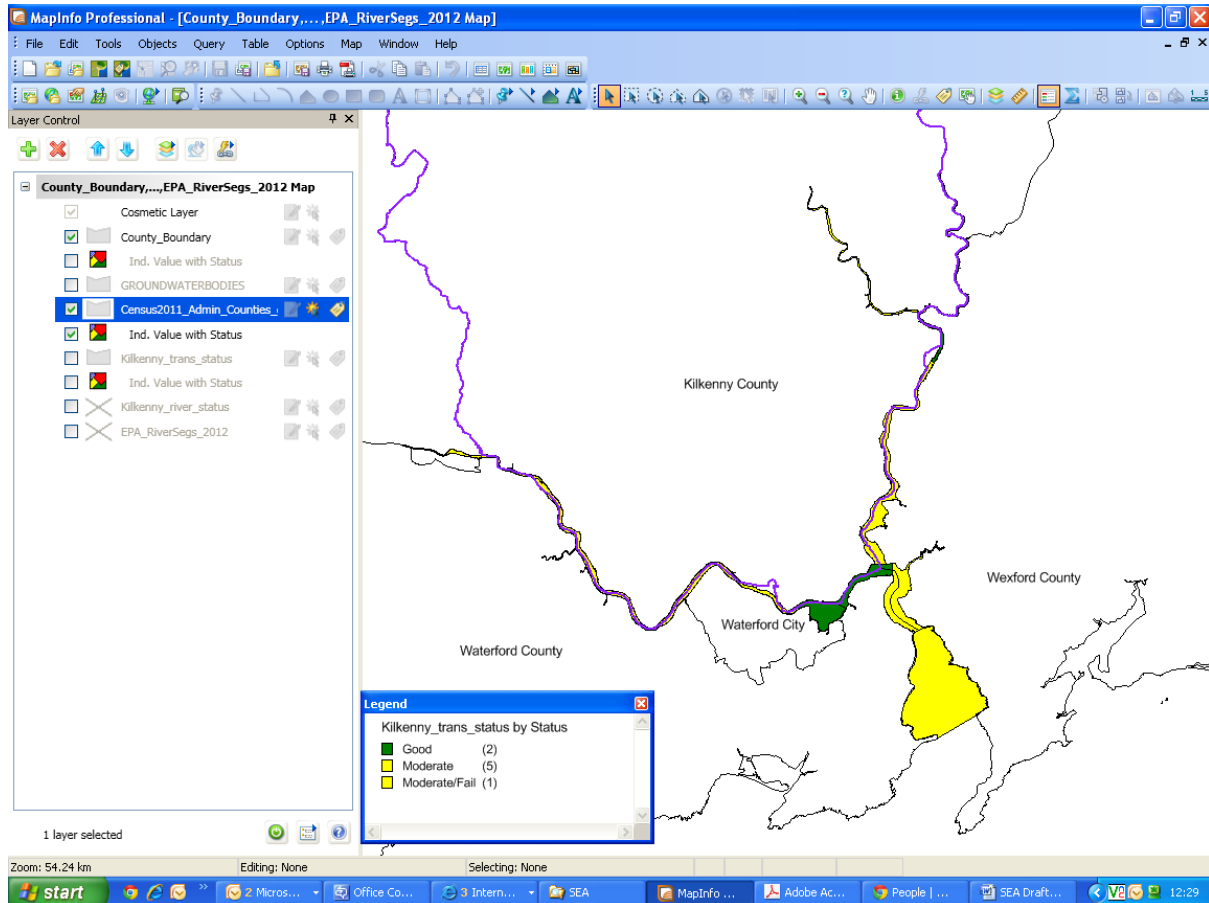
**Figure 3.13: Surface Water quality in Co. Kilkenny**



### 3.6.1.3 Estuarine waters

Estuarine waters include the Upper River Suir, Upper River Barrow and the River Nore. As of 24/1/2013, all estuarine waters were either at good or moderate status, see Figure 3.14 below.

**Figure 3.14: Estuarine Water quality in Co. Kilkenny**



#### 3.6.1.3.1 Waterford Harbour Shellfish Growing Area

The Waterford Harbour Shellfish Growing Area was designated in 2009. A Pollution Reduction Programme was prepared based on the Characterisation Report<sup>44</sup>. This found that the key pressures on the site were urban wastewater systems, on-site waste water treatment systems and agriculture. The pressure arising from the urban wastewater systems was alleviated in 2010 with the opening of the upgraded Waste Water Treatment plant in Belview. On site waste water treatment systems such as septic tanks are addressed in section 3.6.3.

### 3.6.2 Waste Water Treatment

There are a total of 35 public wastewater treatment schemes within the county, of varying size and complexity, see Table 3.12 below.

<sup>44</sup> Department of Environment, Heritage and Local Government, [Waterford Harbour Pollution Reduction Programme](#), 2009



The EPA publishes reports on the status of waste water treatment in Ireland. The latest of these is an [Update Report](#)<sup>45</sup> to the [Focus on Urban Waste Water Discharges in Ireland, Urban Waste Water Treatment](#)<sup>46</sup>. This sets out which plants have treatment that is not appropriate based on the effluent results and/or have taken less than the recommended numbers of samples. The plants are categorised into Pass or Fail.

- *Pass* – the 2011 results met the standards set in the Directive for effluent quality, and a sufficient number of effluent samples were collected, analysed and reported to the EPA.
- *Fail* – the 2011 results did not meet the standards set in the Directive for effluent quality and/or an insufficient number of effluent samples was collected, analysed and reported to the EPA.
- *No secondary* – waste water received no treatment or a basic level of treatment (i.e. preliminary treatment or primary treatment) prior to discharge and consequently the effluent could not achieve the quality standards specified in the Directive.

Of the 21 plants listed, 8 passed, 7 failed and 6 had no secondary treatment. This compares to 2010<sup>47</sup>, where 8 plants failed, 6 passed, 6 had no secondary treatment and 1 had no result.

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<sup>45</sup> EPA, [Second Update Report on data presented in the EPA Report “Focus on Urban Waste Water Discharges in Ireland” Urban Waste Water Treatment](#), 2012

<sup>46</sup> EPA, [Focus on Urban Waste Water Discharges in Ireland, Urban Waste Water Treatment](#), 2012

<sup>47</sup>

EPA, [Update Report on data presented in the EPA Report “Focus on Urban Waste Water Discharges in Ireland” Urban Waste Water Treatment in 2010](#), 2012

**Table 3.12: Waste Water Treatment plants in Co. Kilkenny**

Name of plant	WWTP Type	Design P.E. (Population Equivalent)	Current load P.E. (Population Equivalent) as at 9/2/2012	Comment on upgrade
Ballyhale/Knocktopher	Secondary	400	505	Overloaded. Upgrade planned.
Ballyragget	Secondary	1,920	983	Capacity available
Bennettsbridge	Primary	500	1,425	Overloaded. Upgrade planned.
Callan	Secondary	4,000	5,280	Overloaded
Castlecomer	Secondary	2,540	1,311	Upgrade planned.
Clogh-Mooneenroe	Secondary	1,740	755	Upgrade planned.
Coan	Primary	75	30	Capacity available
Deerpark, Moneenroe	Primary	65	54	Capacity available
Dunamaggin	Secondary	150	100	Capacity available
Dungarvan	Primary	65	150	Overloaded. No immediate plans for upgrade.
Fiddown	Primary	300	608	Overloaded. Upgrade planned.
Freshford	Primary	400	1,000	Overloaded. Upgrade planned – funding dependant
Glenmore	Primary	250	220	Capacity available
Goresbridge	Primary	400	1,837	Overloaded. Upgrade funding dependant.
Gowran	Secondary	1,600	701	Capacity available
Graiguenamagh	Secondary	3,000	1,270	Capacity available
Inistioge	Primary	400	330	Overloaded. Upgrade funding dependant.
Johnstown	Primary	900	990	Overloaded. Upgrade funding dependant.
Kells	Secondary	300	320	Overloaded. No immediate plans for upgrade.
Kilkenny City Purcellsinch	Secondary	107,650	54,504	Purcellsinch. EIS application for major upgrade given approval by An Bord Pleanála.
Kilkenny Sion Road	Primary	21	21	
Kilmacow	Secondary	2,500		New plant. Capacity available.
Kilmaganny	Primary	245	275	
Kilmanagh	Primary	50	30	
Ballyhale/Knocktopher	Secondary	400	505	Overloaded. Upgrade planned.
Mooncoin	Secondary	2,800	612	Capacity available
Ballygriffin, Mooncoin	Primary	30	30	
Mullinavat	Primary	280	520	Overloaded. Upgrade post 2013 & funding dependant.

<b>New Ross (Environs)</b>	Secondary	1,900	200	<b>New plant in Co. Wexford. Design PE represents capacity reserved for Kilkenny County Council. Capacity available. Total Design PE 16,000, PE used 10,013)</b>
<b>Paulstown</b>	Secondary	1,000	665	
<b>Piltown</b>	Secondary	1,500	2,096	
<b>Skeaghvosteen</b>	Primary	27	27	
<b>Slieverue</b>	Secondary	19,500	5,100	<b>New Waterford City plant at Belview. Design PE represents capacity reserved for Kilkenny County Council for Waterford City Environs and Slieverue. Capacity available. (Total PE 190,600, used 122,588)</b>
<b>Stoneyford</b>	Secondary	500	614	
<b>Thomastown</b>	Secondary	7,500	2,049	<b>Overloaded. Upgrade funding dependant.</b>
<b>Tullaroan</b>	Primary	150		<b>Capacity available</b>
<b>Urlingford</b>	Secondary	1,500	2,015	<b>Overloaded. Upgrade planned.</b>
<b>Windgap</b>	Primary	27	27	

### 3.6.3 Septic tanks

A total of 15,163 housing units in the county were served by septic tanks, or other individual sewerage treatment systems according to the 2011 Census. This was an increase of 1,149 from the 2006 total of 14,014<sup>48</sup>. In 2002, there were 12,821 septic tanks in the county.

These systems vary in age, levels of maintenance and suitability to site-specific conditions. There is a large proportion of existing septic tanks within the county which were not designed to deal with the quantity and characteristics of the throughput arising from modern lifestyles. Reports by the EPA have identified septic tanks as a potential source of water pollution, particularly of groundwater sources but also of surface waters.

In 2009, the European Court of Justice ruled against Ireland in relation to septic tanks and other on-site wastewater treatment systems. The Court found that by failing to adopt the necessary legislation to comply with Articles 4 and 8 of Council Directive 75/442/EEC (The Waste Directive) as regards domestic waste waters disposed of in the countryside through septic tanks and other individual waste water treatment systems, Ireland has failed to fulfil its obligations under that directive. In 2012 the Department of Environment published the Water Services (Amendment) Act, to regulate discharges from all homes that are not connected to the public sewer network. Measures to enforce this will be introduced nationally in 2013.

<sup>48</sup> [www.cso.ie](http://www.cso.ie)

### 3.6.4 Water supply schemes

There are a total of 20 public water supplies serving various settlements in the county. Public water supplies have the potential to impact hugely on human health.

Table 3.13: Water Supply Schemes		
Water Supply Name	Comment on capacity	Upgrade
Ballyragget Ws 1001	Capacity Available	
Bennettsbridge Regional Ws 1002	Capacity Limited	
Callan Ws 1003	Capacity Available	
Castlecomer (Old) Ws 1004	Capacity Limited	
Clogh-Castlecomer Ws 1005	Capacity Limited	Prioritised for upgrade
Glenmore Ws 1006	Capacity Limited	
Gorteen Ws 1016	Capacity Limited	
Gowran-Goresbridge-Paulstown Ws 1007	Capacity Limited	Prioritised for upgrade
Graiguenamanagh Ws 1008	Capacity Limited	
Inistioge Ws 1009	Capacity Limited	
Kilkenny City (Radestown) Ws 1010	Capacity Available	Prioritised for upgrade
Kilkenny City (Troyswood) Ws 1011	Capacity Available	
Kilmaganny Ws 1019	Capacity Limited	
Lois Na Si Ws 1018	Closed	
Mooncoin Regional Ws 1012	Capacity Available	Prioritised for upgrade
Piltown Ws 1013	Capacity Limited	
Silversprings Ws 1017	Closure proposed	
South Kilkenny Environs Ws 1020	Capacity Available	
Thomastown Ws 1014	Capacity Limited	Prioritised for upgrade
Urlingford-Johnstown Ws 1015	Capacity Limited	

The EPA publishes annual reports on the quality of drinking water in Ireland which utilises the data collected by the local authorities.

<http://www.epa.ie/downloads/advice/drinkingwater/drinkingwatersupplies/Kilkenny%20Scheme%20Details.pdf>

Detail on water quality is contained in the EPA Report *The Provision and Quality of Drinking Water in Ireland – A Report for the Year 2011*<sup>49</sup>. Of the 19 operational public water supply schemes, five were listed on the Remedial Action List (RAL) at the end of 2011. The RAL is a list of public water supplies where remedial action was required to ensure compliance with drinking water standards and is used to focus attention on resolving any deficiencies in public water supplies. The primary issues addressed by the RAL include disinfection for *E. coli*, *Cryptosporidium* barriers, adequate treatment for trihalomethanes and operational controls for managing aluminium, and turbidity levels. In 2008, 7 schemes were listed on the RAL, by 2012 this was reduced to 2; Inistioge and Kilkenny City (Radestown). The remedial actions are due to be complete by 2014.

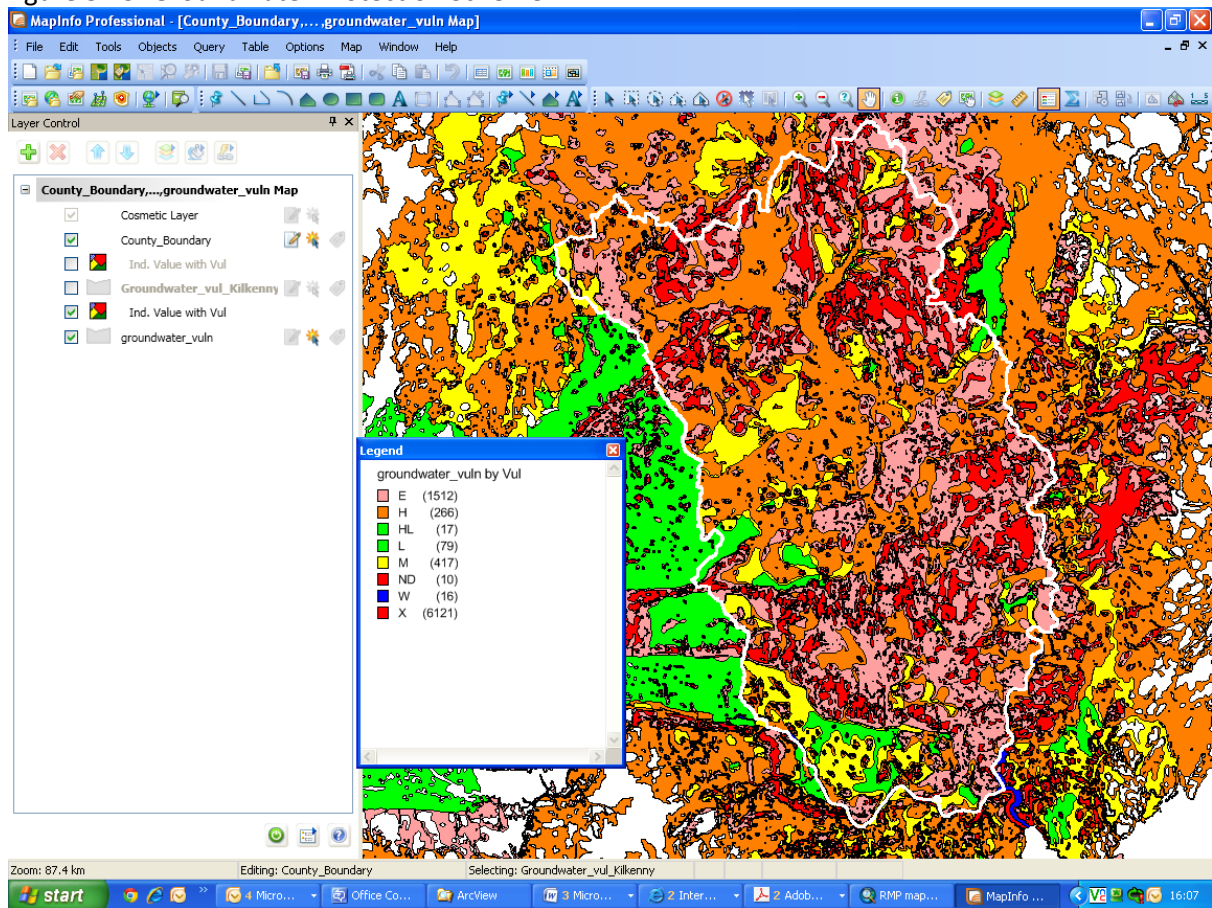
<sup>49</sup> Office of Environment Enforcement, EPA *The Provision and Quality of Drinking Water in Ireland – A Report for the Year 2011*, 2009

### 3.6.5 Ground water protection scheme

The Geological Survey of Ireland has completed a Groundwater Protection Scheme for County Kilkenny. The overall aim of a Groundwater Protection Scheme is to preserve the quality of groundwater, for drinking water, surface water ecosystems and terrestrial ecosystems, for the benefit of present and future generations. The Groundwater Protection Scheme rates aquifers according to their vulnerability to pollution and groundwater vulnerability is depicted on Figure 3.15. Aquifers of extreme vulnerability are dominant in the south of the county and aquifers of high vulnerability are dominant in the low lying central areas. As can be seen the majority of the county’s ground waters are classified as either extreme or high vulnerability.

The GSI will be updating the vulnerability mapping for the County in 2013.

Figure 3.15: Groundwater Protection Scheme

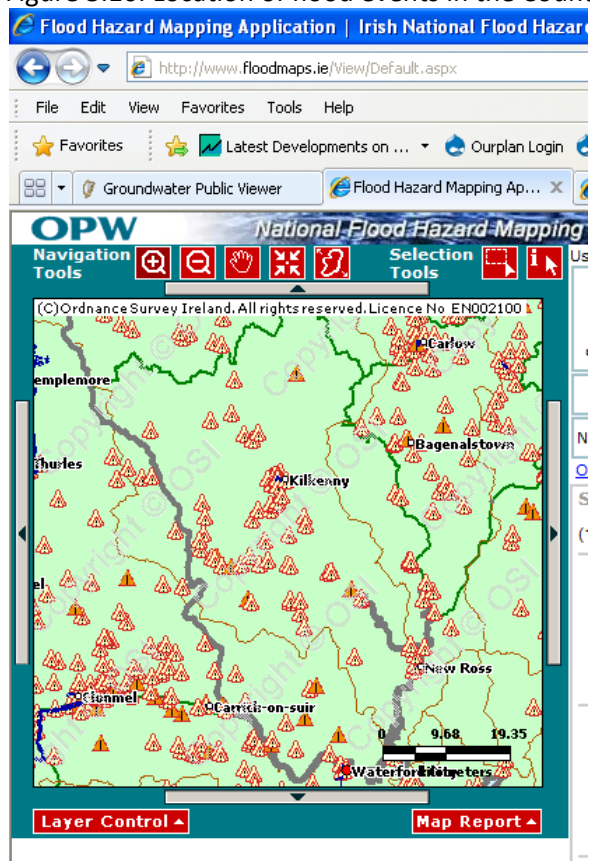


### 3.6.6 Flooding

The OPW record flood events throughout the country<sup>50</sup>. The locations of all recorded flood events are shown on Figure 3.16. A Strategic Flood Risk Assessment has been carried out as part of the Development Plan review process and forms an appendix to this SEA report.

<sup>50</sup> <http://www.floodmaps.ie/View/Default.aspx>

Figure 3.16: Location of flood events in the County



### 3.6.7 Existing Problems

- A number of the County's rivers are classified as being of Poor status under the Water Framework Directive, this is of particular concern where this Poor status overlaps with the cSAC or SPA.
- There are continuing pressures on the Waterford Harbour Shellfish growing area arising from on-site wastewater treatment systems.
- Waste water treatment plants require upgrading in a number of settlements
- The proliferation of septic tanks can have an impact on the quality of groundwater and surface water.
- Water supply schemes require upgrading in a number of settlements and two schemes are on the Remedial Action List
- In general, the County's aquifers are rated as either extreme or high vulnerability, which presents challenges to determine appropriate uses.
- Flooding continues to occur in a number of locations in the county.

### 3.7 Air

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 \(CAFE\) Directive](#)<sup>51</sup>, also known as the CAFE Directive. The CAFE Directive has been transposed into national legislation by the [Air Quality Standards Regulations 2011](#).

Data on air quality is available from the EPA. EU legislation on air quality requires that member states divide their territory into zones for the assessment and management of air quality. Kilkenny city is located in Zone C (as a centre with a population greater than 15,000) and the rest of Co. Kilkenny is located within Zone D. As of 29/1/2013, air quality was categorised as Good in Zone C, and Very Good in Zone D.

Air quality is monitored at the EPA Regional Inspectorate at Seville Lodge on the Callan Road. The data published on the EPA website is real-time data<sup>52</sup>. The ambient air quality pollutants of most importance on an EU-wide level are nitrogen dioxide, particulate matter and ozone. They can impact on human health and are at levels approaching the relevant limit value or long-term objective. Nitrogen dioxide (NO<sub>2</sub>) and Ozone (O<sub>3</sub>) are monitored at this site. The NO<sub>2</sub> hourly limit of 200 microgrammes per cubic metre is deemed breached if more than 18 exceedances have occurred. There were no exceedances at this site in 2012. The O<sub>3</sub> information threshold is 180 microgrammes per cubic metre. There were no exceedances at this site in 2012.

There has been no update to the Ambient Air Monitoring in Kilkenny report of 2005<sup>53</sup>, as quoted in the previous SEA on the 2008 Development Plan. This recorded that no limit values were exceeded during the measurement period; concentrations of sulphur dioxide, nitrogen dioxide and lead were below their respective lower assessment thresholds while levels of PM10 exceeded the upper assessment threshold.

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.

Air pollution has a transboundary aspect meaning that emissions in one country can cause pollution in a different country. National emissions ceilings are in place across Europe to control emissions of four key transboundary pollutants: sulphur dioxide (SO<sub>2</sub>), oxides of nitrogen (NO<sub>x</sub>), volatile organic compounds (VOC) and ammonia (NH<sub>3</sub>). These pollutants can contribute to acidification, eutrophication and ozone formation. Strategies implemented in Ireland in recent years have substantially reduced emissions of SO<sub>2</sub>, VOC and NH<sub>3</sub>, but levels of NO<sub>x</sub> are expected to remain high in the short term. Large increases in road transport are responsible for high NO<sub>x</sub> emissions levels.

A move towards sustainable modes of transport would reduce emissions from road traffic. According to Census 2011, a total of 12% of commuters used sustainable means of travel (cycling, walking, bus or train). This compared to 21% nationally<sup>54</sup>. The philosophy of "Smarter Travel" involves using sustainable modes of transport, such as public transport, walking or cycling, and reducing overall travel demand. Locating houses close to places of employment and services can contribute to an increase in Smarter Travel. In general, rural housing increases car dependency and contributes to a rise in unsustainable modes of transport.

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<sup>51</sup> EU, [Ambient Air Quality and Cleaner Air for Europe \(CAFE\) Directive](#), 2008

<sup>52</sup> <http://www.epa.ie/whatwedo/monitoring/air/data/kk/>

<sup>53</sup> EPA, [Ambient Air Monitoring in Kilkenny 29th April 2005 to 25th October 2005](#), 2005

<sup>54</sup> Census 2011, [Profile 10 Door to Door](#)

### **3.7.1 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 and social centres.





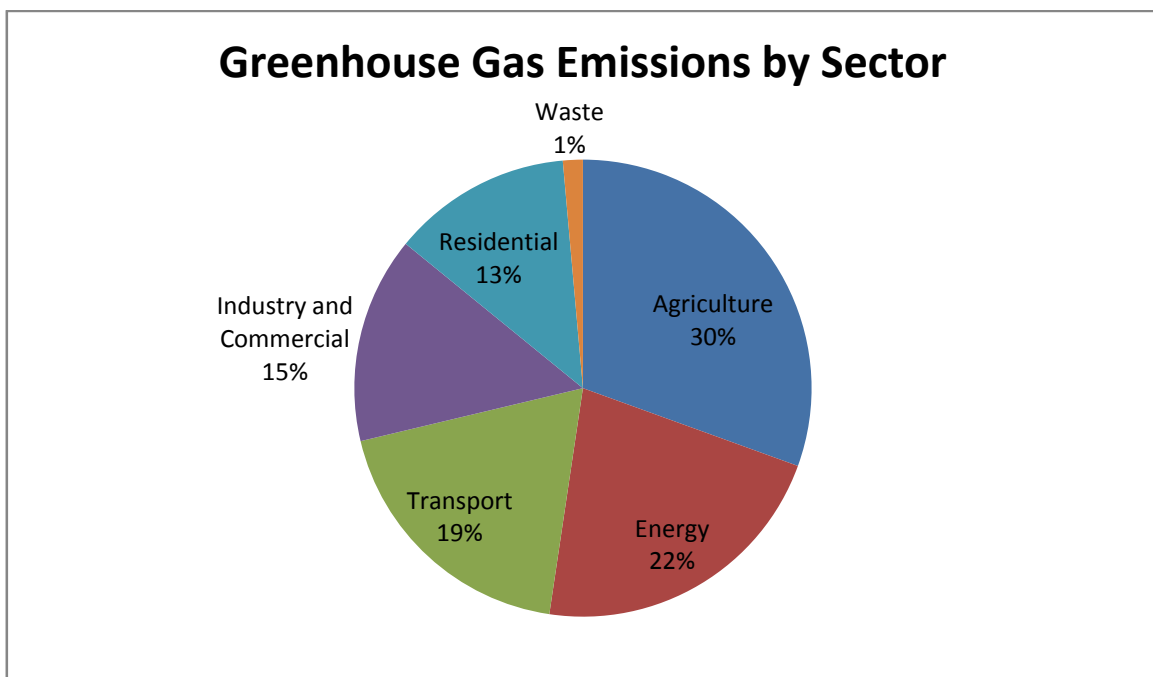
### 3.8 Climatic Factors

The causes and consequences of climate change pose an immense global challenge. The [National Climate Change Adaptation Framework](#)<sup>55</sup> recommends that local authorities incorporate climate change adaptation into their Development Plans.

#### 3.8.1 Greenhouse gases

Increased atmospheric concentrations of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), released by human activities, trap additional energy in the Earth's climate system. This gives rise to a range of system changes, broadly referred to as climate change.

The single largest contributor to overall emissions in Ireland is Agriculture, at 30.5% of the total, see below<sup>56</sup>. This is proportionally higher than for most other EU member states. Transport is also a big contributor at 19%.



There is a necessity to reduce greenhouse gas emissions and to adapt to climate change impacts. The EPA is part of an International Carbon observational system, which has three monitoring sites in Ireland; Carnsore Point, Malin Head and Mace Head<sup>57</sup>. Limited data is available on emissions per county.

#### 3.8.2 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.

<sup>55</sup> Department of Environment, Community and Local Government, [National Climate Change Adaptation Framework](#), 2012

<sup>56</sup> EPA, [Ireland's Environment, An Assessment](#), 2012

<sup>57</sup> <http://www.icos-infrastructure.eu/>

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 [Noise Action Plan](#)<sup>58</sup> was finalised for Kilkenny in 2009. The major noise source meeting the criteria set out in the Regulations are those associated with roads with more than 6 million vehicle passages per year. In the case of the Kilkenny the following areas are within the subject criteria of the Regulations:

- Sections of the N9 in the Environs of Waterford City
- Sections of the N10 in the Environs of Kilkenny City
- Sections of the N25 in the Environs of Waterford City and New Ross
- Sections of the N77 in the Environs of Kilkenny City

The Action Plan is therefore designed with the twin aims of;

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

This Noise Action Plan is being updated at present.

As part of the Integrated Pollution Prevention Control (IPPC) and Waste Licensing systems, certain scheduled activities and operations have conditions attached to their licences which effect control over emissions of noise. Noise control measures and limits are generally stipulated by specific licensing conditions. The EPA compiles data on the number of licence exceedances due to noise disturbance or odours but in general, noise monitoring has not been carried out widely. Data is not available by county on exceedances.

### 3.8.3 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 county may be affected by environmental noise levels from roads.

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<sup>58</sup> Kilkenny County and Borough Councils, [Noise Action Plan 2008](#), 2009

### 3.9 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.

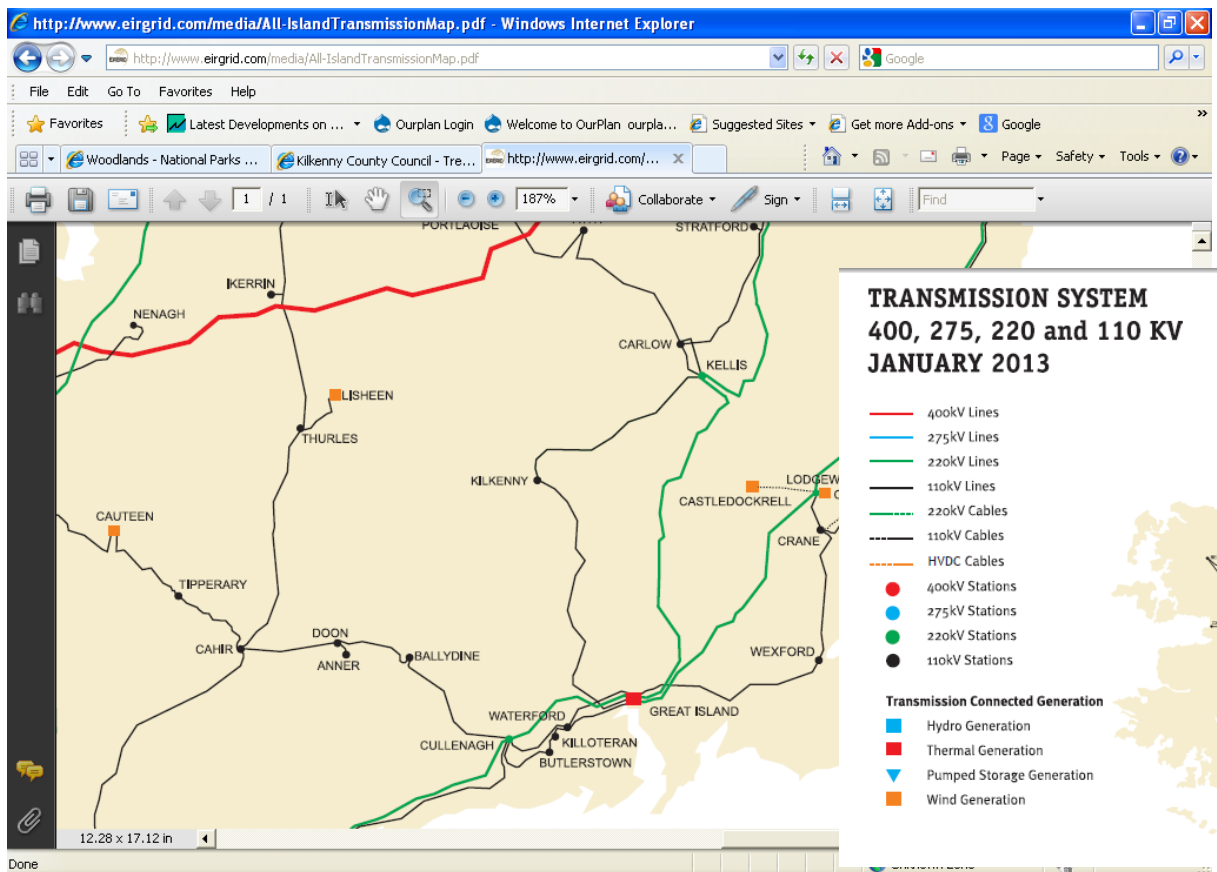
#### 3.9.1 Transportation

The County's transportation infrastructure is shown on Figure 3.4, Core Strategy.

#### 3.9.2 Energy infrastructure

The existing transmission network in County Kilkenny comprises mostly 110 kV circuits and one 220 kV circuit in the south of the county. There is one transmission substation, Kilkenny, which is served by two 110 kV overhead lines, see Figure 3.17.

Figure 3.17 Transmission network in Co. Kilkenny



Source: <http://www.eirgrid.com/media/All-IslandTransmissionMap.pdf>

Two projects are being developed by Eirgrid in or affecting Kilkenny; the Laois – Kilkenny Reinforcement Project to increase the quality and security of supply to the area, and GridLink, which will link Cork and Kildare via Great Island in Wexford with a 400 kV line.

#### 3.9.3 Quarries

A database of all quarries in the county (active and closed) has been prepared by the Planning Section. Figure 3.12 shows the location of pits (sand and gravel) and quarries (crushed rock) in the county. Remediation of quarries is governed under the planning application for each quarry, and

will not be addressed as part of the Development Plan. The Aggregate Potential of the county has been discussed under Section 3.5.3 Geology.

### 3.9.4 Forestry

According to the Forest Service, 7.8% of the county was in forest cover in 2007<sup>59</sup>. This has increased since then to 9.98% which is a total of 20,573ha in 2011<sup>60</sup>. Nationally, 10.92% of land is under forest cover. According to Corine 2006 data, the breakdown in forestry amongst broad-leaved and coniferous forests was as follows:

**Table 3.14: Forestry cover in County by type in 2006**

Site code	Forestry type	% of total
311	Broad-leaved forests	14.2%
312	Coniferous forests	76.1%
313	Mixed forests	9.7%

The Department of Agriculture, Fisheries and Food, Forest Service published an [Indicative Forest Statement](#) in 2008<sup>61</sup>. This Forestry Statement provides high-level, national guidance in relation to the suitability of land for afforestation. This statement divides the country into four mapped category areas according to its suitability as follows:

Category 1: Suitable for a range of forest types (38% nationally)

Category 2: Suitable for certain types of forest development (27%)

Category 3: Suitable, where appropriate, for nature conservation and/or amenity forests (20%)

Category 4: Unsuitable, unproductive or unplantable (15%)

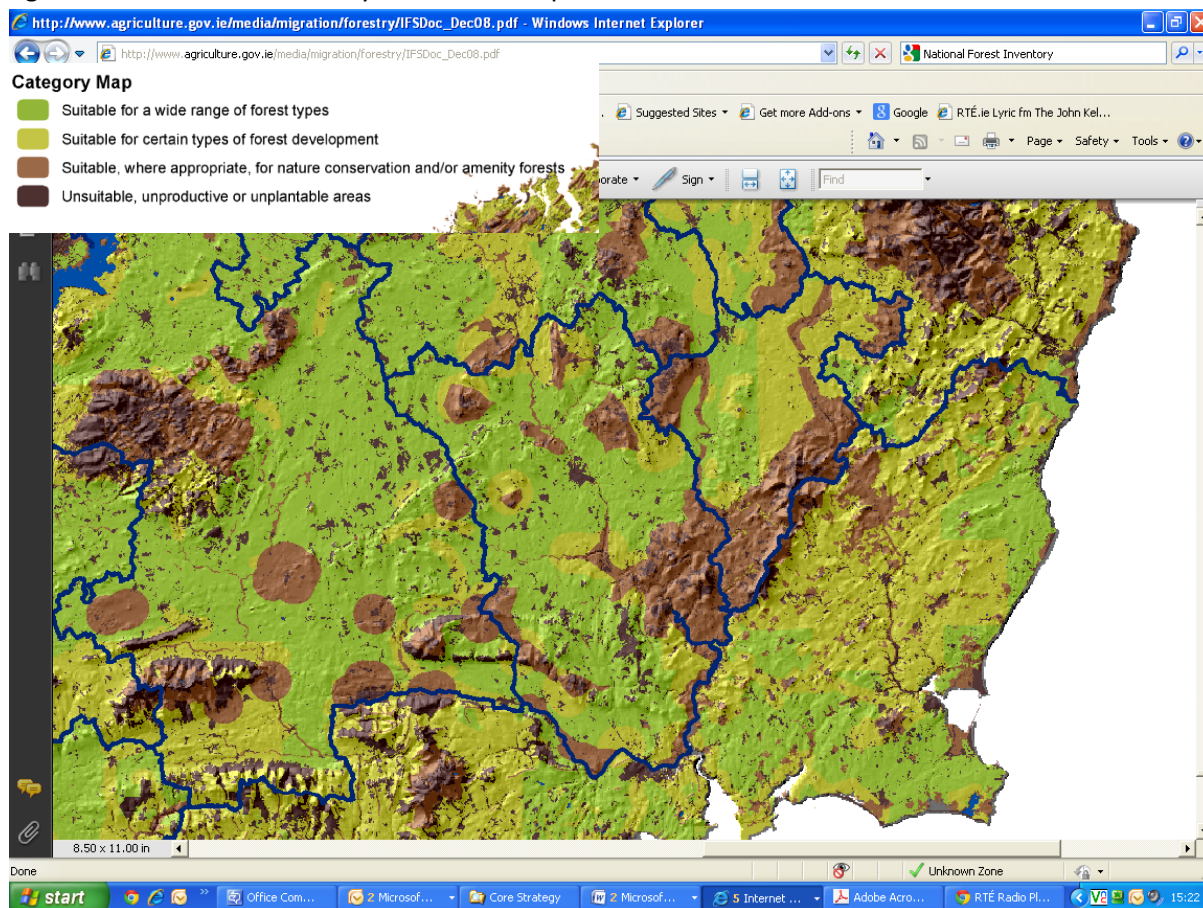
The IFS map is primarily related to the consultation system for the processing of Forest Service grants. All areas are categorised by reference to the level of consultation required, their varying silvicultural suitability or whether or not the areas are plantable or there is existing forest cover. County Kilkenny falls mainly within Category 1, but also has areas within each of the other three categories, see Figure 3.18.

<sup>59</sup> Forest Service, [National Forest Inventory](#), 2007

<sup>60</sup> Forest Service, [Afforestation Statistics](#), 2011

<sup>61</sup> Department of Agriculture, Fisheries and Food, Forest Service, [Indicative Forest Statement](#), 2008

Figure 3.18: Indicative Forestry Statement Map



### 3.9.5 Agriculture

Agriculture, forestry and fishing accounted for approximately 2% of Gross Value Added nationally in 2011<sup>62</sup>. (GVA is equal to the sum of the values of goods and services produced, including depreciation and subsidies on production, but excluding taxes on production.) The strategy document, [Food Harvest 2020](#)<sup>63</sup> sets out that milk production will increase by 50% by 2020. This may have environmental effects in terms of greenhouse gas emissions and water quality. The environmental issues arising from this are mainly addressed at EU level, through the Common Agriculture Policy (CAP), which requires that farmers are cross compliant. Applicants must maintain their land in 'good agricultural and environmental condition'.

### 3.9.6 Existing Problems

- There is a need to upgrade the energy infrastructure in the county.

<sup>62</sup> EPA, [Ireland's Environment, An Assessment](#), 2012, p.11

<sup>63</sup> Department of Agriculture, Food and the Marine, [Food Harvest 2020, A vision for Irish agri-food and fisheries](#), 2010

### **3.10 Cultural Heritage (architectural and archaeological)**

Heritage, by definition, means inherited properties, inherited characteristics and anything transmitted by past ages and ancestors. It covers everything, from objects and buildings to the environment. Cultural heritage includes physical buildings, structures and objects complete or in part, which have been left on the landscape by previous and indeed current generations. Co. Kilkenny has a wealth of architectural and archaeological heritage.

#### **3.10.1 Archaeological Heritage**

Archaeology in Ireland is protected under the National Monuments Acts.

##### ***3.10.1.1 Record of Monuments and Places***

A level of universal protection is afforded to all monuments listed in the Record of Monuments and Places (RMP). A lesser number of monuments are accorded a higher level of protection, that is, some are entered on the Register of Historic Monuments, and some are deemed to be of national significance and are National Monuments. The up-to-date RMP is available at the Department of Arts, Heritage and the Gaeltacht's website [www.archaeology.ie](http://www.archaeology.ie). See Figure 3.19 for the current distribution of recorded monuments. Development pressure can lead to loss or impairment of a feature of importance.

##### ***3.10.1.2 Underwater Archaeology***

Section 3 of the National Monuments (Amendment) Act, 1987 makes specific provision for the protection of shipwrecks and underwater archaeological objects. Kilkenny's rivers and the Barrow Estuary may contain such objects. Flood relief schemes, dredging, bridge or drainage works may impact on this archaeological heritage.

#### **3.10.2 Architectural Heritage**

County Kilkenny is rich in structures and places of historic and architectural value that are symbols of the social, economic and cultural development of the county and which contribute to its essential character.

##### ***3.10.2.1 Record of Protected Structures***

A Protected Structure, unless otherwise stated in the RPS, includes the interior of the structure, the land lying within its curtilage, any other structures lying within that curtilage and their interiors, plus all fixtures and features which form part of the interior or exterior of any of these structures. See Figure 3.20 for the current distribution of Protected Structures (Note: mapping of the RPS is still underway, but is almost complete).

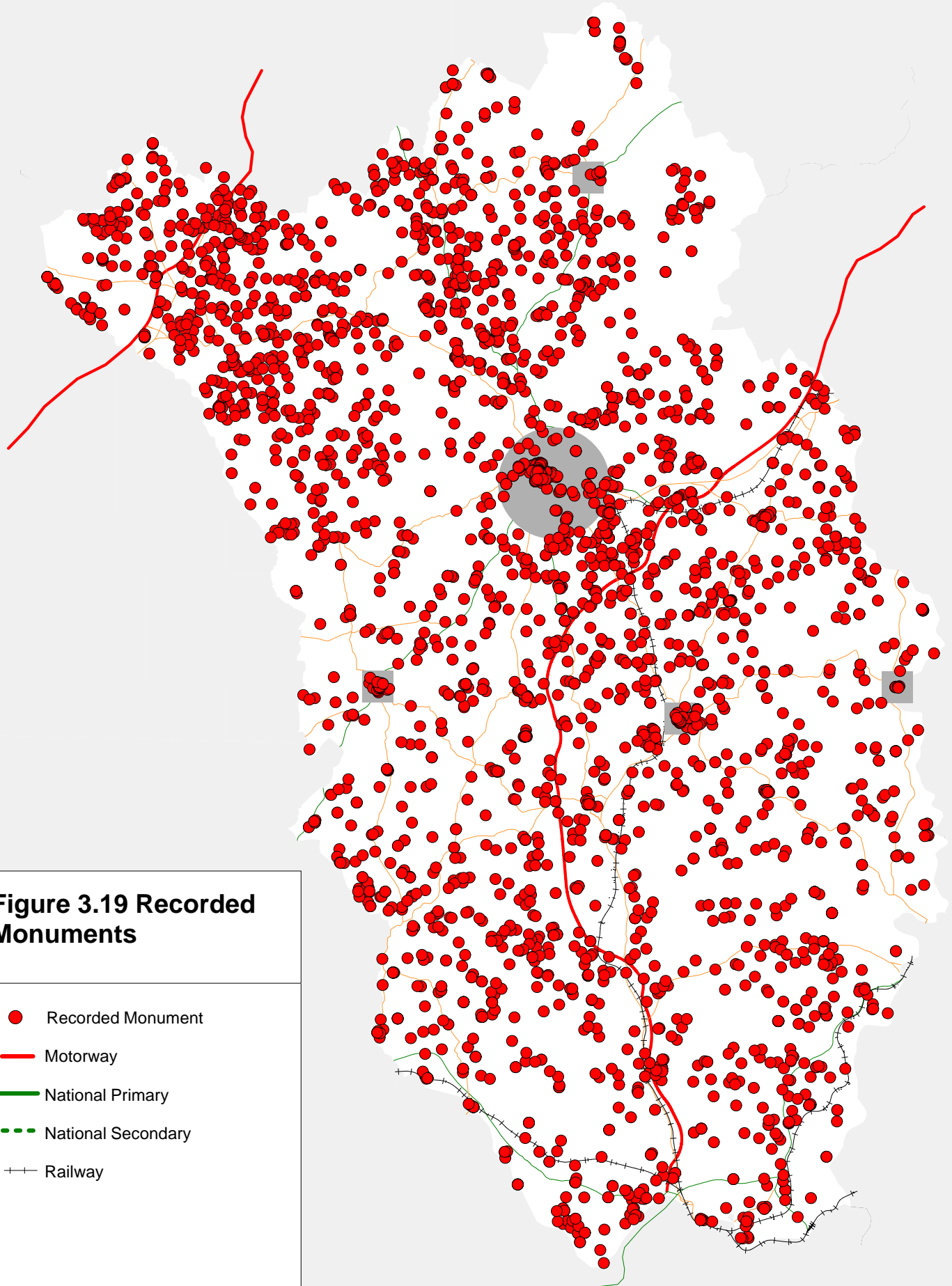
##### ***3.10.2.2 National Inventory of Architectural Heritage***

The National Inventory of Architectural Heritage (NIAH) was a national survey of structures of importance, and can be viewed at [www.niah.ie](http://www.niah.ie). See Figure 3.21 for the current distribution of NIAH structures in the county. The Council is responding to the Ministerial recommendation made in 2006 to consider structures included in the survey and rated Regional and above for inclusion in the RPS and additions are being made to the RPS on a phased basis.

##### ***3.10.2.3 Architectural Conservation Areas***

The Planning and Development Act, 2000 provides for the inclusion of objectives for preserving the character of places, areas, groups of structures or townscapes where the planning authority is of the opinion that such an area:

# Kilkenny Draft County Development Plan SEA

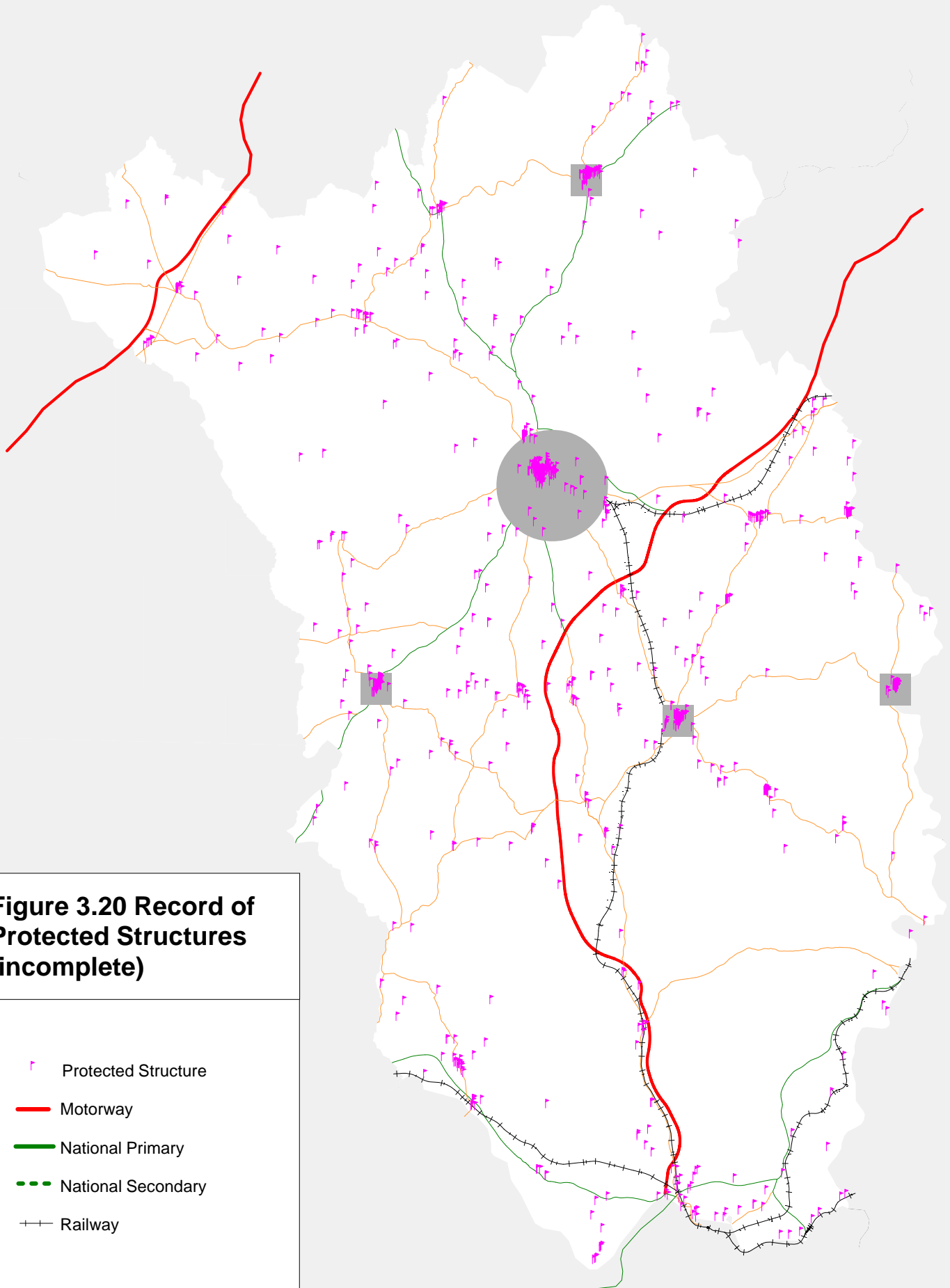


**Figure 3.19 Recorded Monuments**






- Recorded Monument
- Motorway
- National Primary
- - - National Secondary
- + + Railway

Date: June 2013  
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# Kilkenny Draft County Development Plan SEA



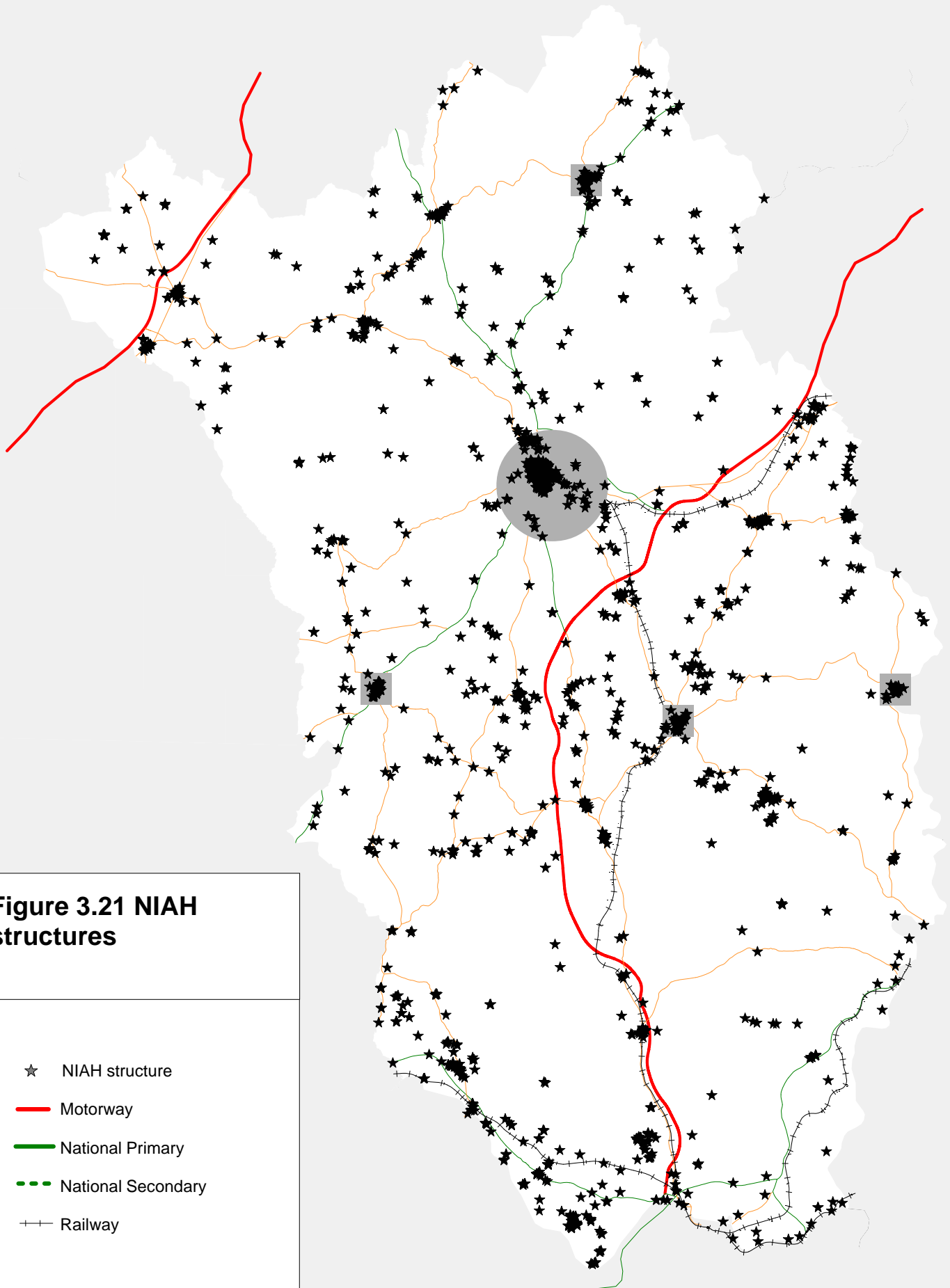
**Figure 3.20 Record of Protected Structures (incomplete)**

-  Protected Structure
-  Motorway
-  National Primary
-  National Secondary
-  Railway

Date: June 2013  
Scale: 1: 300,000 @A4



# Kilkenny Draft County Development Plan SEA



**Figure 3.21 NIAH structures**

- ★ NIAH structure
- Motorway
- National Primary
- - - National Secondary
- + + + Railway

Date: June 2013  
Scale: 1: 300,000 @A4

(a) is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or

(b) contributes to the appreciation of protected structures.

There are ACA's within Ballyragget, Callan, Castlecomer, Freshford, Gowran, Graiguenamanagh, Inistioge and Thomastown and an ACA is proposed for Johnstown. Maps of the ACAs are contained within the Development Plan.

### **3.10.3 Existing Problems**

- The process of adding NIAH structures, rated Regional and above, to the RPS has yet to be completed.

### 3.11 Landscape

A Landscape Character Assessment for the County is contained within the 2008 Plan. This divides the County into four landscape character unit types. There are also a number of protected views within the 2008 Plan. The landscape character areas and protected views are shown on Figure 3.22.

In addition to the designated views in the current Plan, there were also a number of views designated as part of the Kells and Woodstock Local Area Plans. These should be incorporated into the Draft Plan to ensure their continued protection.

Population growth can be a threat to the landscape quality, depending on the type and nature of new housing distribution. The dereliction of farms and stone cottages and their replacement by modern dwellings not reflective of traditional vernacular styles can have an impact on the area. Farming practices may also pose a threat, where hedgerows are being removed and replaced with post and wire fencing resulting in an open and more diminished landscape condition. In upland areas, masts in prominent high points threaten the visual quality of the landscape. The development of access roads for communication masts and forestry can also impact adversely on sensitive upland habitats which exist within this area.

A review of the policies in adjoining Development Plans is necessary in order to establish any possible effects on adjoining authorities' landscape designations. This is set out in the table below.

**Table 3.15: Review of adjoining Development Plans in relation to landscape sensitivity**

<b>Plan</b>	<b>Views/scenic routes</b>	<b>Special sensitivity</b>
Carlow County Development Plan 2009-2015	Scenic routes and views just east of Castlecomer	No area of sensitivity adjoining Co. Kilkenny boundary
Laois County Development Plan 2011-2017	Map 1.13.4, views into Kilkenny south of Cullahill and Durrow	No area of sensitivity adjoining Co. Kilkenny boundary
Waterford County Development Plan 2011-2017 –	No scenic routes adjoining Co. Kilkenny boundary	No area of sensitivity adjoining Co. Kilkenny boundary
Waterford City Development Plan 2013-2019	No protected views adjoining Co. Kilkenny boundary.	
Wexford County Development Plan 2013 – 2019		Map 13: No landscapes of greater sensitivity adjoining Co. Kilkenny boundary
South Tipperary County Development Plan	V51, V61	Map 9: Slieveardagh Hills – secondary amenity area Map 11: Slievenamon Primary & secondary amenity areas

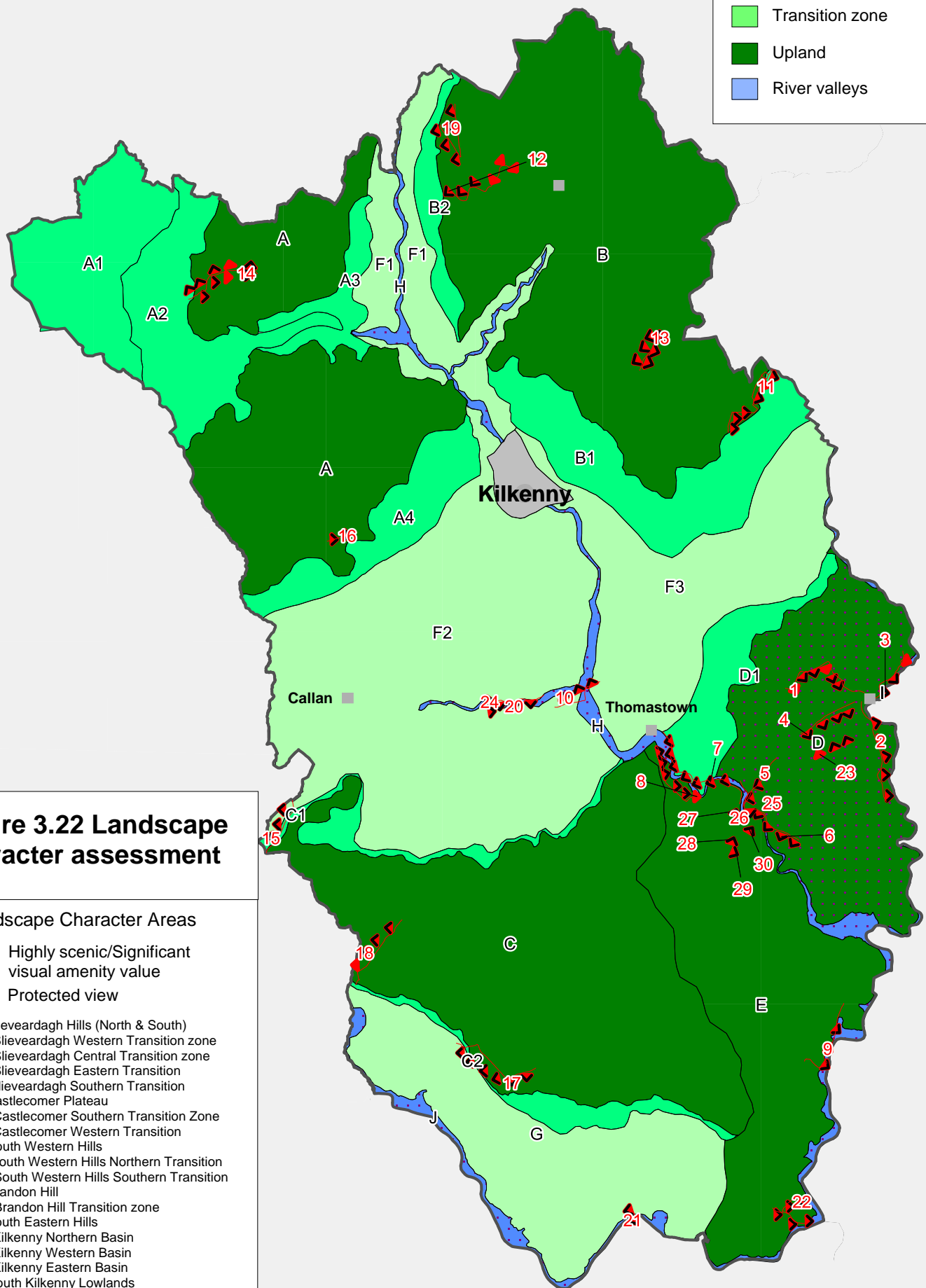
#### 3.11.1 Existing Problems

- Removal of hedgerows has caused dilution of inherent landscape character
- Visually prominent communications structures has detracted from the scenic quality of upland areas

# Kilkenny Draft County Development Plan

**Landscape Character Types**

- Lowland
- Transition zone
- Upland
- River valleys



**Figure 3.22 Landscape character assessment**

**Landscape Character Areas**

- Highly scenic/Significant visual amenity value
- Protected view

- A - Slieveardagh Hills (North & South)
- A1 - Slieveardagh Western Transition zone
- A2 - Slieveardagh Central Transition zone
- A3 - Slieveardagh Eastern Transition
- A4 - Slieveardagh Southern Transition
- B - Castlecomer Plateau
- B1 - Castlecomer Southern Transition Zone
- B2 - Castlecomer Western Transition
- C - South Western Hills
- C1 - South Western Hills Northern Transition
- C2 - South Western Hills Southern Transition
- D - Brandon Hill
- D1 - Brandon Hill Transition zone
- E - South Eastern Hills
- F1 - Kilkenny Northern Basin
- F2 - Kilkenny Western Basin
- F3 - Kilkenny Eastern Basin
- G - South Kilkenny Lowlands
- H - Nore Valley South
- I - Barrow Valley
- J - Suir Valley

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### 3.12 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 3.16 provides an indication of the interactions present between environmental receptors.

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

### 3.13 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 Development Plan provides the main guidance document. Such areas include undesignated habitats such as hedgerows, County Geological sites, the Groundwater Protection scheme, the Record of Protected Structures, Architectural Conservation Areas, and the Landscape Character Assessment.

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 Kilkenny. 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:

#### 10. 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.

#### 11. 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.

#### 12. 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.

#### 13. Water

Water supplies and wastewater treatment would continue to be governed by the Water Framework Directive. However the Groundwater Protection Scheme would not be implemented and therefore applications would proceed on an ad-hoc basis, without due regard to the potential for affecting a particular aquifer or source.

#### 14. 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 emissions.

#### 15. Climatic factors

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

#### 16. Material Assets

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

#### 17. Cultural Heritage (architectural and archaeological)

The Plan includes a review of the Record of Protected Structures and Architectural Conservation Areas. If this were not to occur, cultural heritage would not be protected to the fullest extent possible, as additions to either the RPS or ACAs would not be carried out.

#### 18. Landscape

In the absence of a Landscape Character Assessment, which forms part of the Plan, there would be no framework guiding developments to avoid areas of highest sensitivity. There would be no Wind Energy Development Strategy and new wind farm developments would be assessed on an individual basis, with no clear strategy.

## 4 Policy Objectives

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 4.1.



**Table 4.1 SEA Objectives**

<b>Environmental Parameter</b>	<b>International, European, National policy documents/strategies /guidelines</b>	<b>No.</b>	<b>Objective (EPO)</b>	<b>Broad Planning Policy Objective (PPO)</b>
Biodiversity, fauna and flora	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity <a href="#">Actions for Biodiversity 2011-2016, Ireland's National Biodiversity Plan (2011)</a>	B1	Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species.	Protect designated sites: SACs, NHAs and SPAs from development. Identify locally important habitats for protection. Provide for green infrastructure. Concentrate development in areas with least sensitivities.
Population and Human Health	Agenda 21 (1992) <a href="#">Our Sustainable Future: A framework for sustainable development for Ireland (2012)</a> The National Spatial Strategy (2002) <a href="#">Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009)</a>	P1	Improve people's quality of life based on high-quality residential, working and recreational environments and on sustainable travel patterns.	Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, and Regional Planning Guidelines. Promote higher density residential development in suitable locations. Sustain the viability of services in smaller towns and villages. Promote sustainable transport patterns through appropriate zoning and provision for public transport. Require appropriate levels of recreational areas with any residential application.
	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	P2	Minimise noise, vibration and emissions from traffic	Require noise controls with all relevant applications. Promote sustainable transport patterns through appropriate zoning and provision for public transport.
Soil	<a href="#">A Resource Opportunity, Waste Management Policy in</a>	S1 S2	Maintain the quality of soils Maximise the sustainable re-use of	Direct development to brownfield lands in preference to developing greenfield lands.

	<a href="#"><u>Ireland</u></a> <sup>64</sup> .		brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands.	
		S3	Minimise the consumption of non-renewable sand, gravel and rock deposits	Encourage rehabilitation of existing housing stock where appropriate.
		S4	Minimise the amount of waste to landfill	Provide appropriate waste disposal facilities, including for composting and recycling in all developments.
Water	EU Water Framework Directive (2000/60/EC) <a href="#"><u>EU Directive on the assessment and management of flood risks</u></a> [2007/60/EC], <a href="#"><u>The Planning System and Flood Risk Management Guidelines for Planning Authorities</u></a> (2009)	W1	Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.	Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks. Provide sufficient capacity in water services to serve zoned land. Include Strategic Flood Risk Assessment as part of the Plan.
		W2	Promote sustainable water use based on a long-term protection of available water resources.	
		W3	Reduce progressively discharges of polluting substances to waters	
		W4	To comply as appropriate with the provisions of <a href="#"><u>The Planning System and Flood Risk Management Guidelines for Planning Authorities</u></a>	
Air	<a href="#"><u>Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive</u></a> (2008/50/EC)	A1	Reduce all forms of air pollution	Promote energy efficient developments. Promote sustainable transport patterns through appropriate zoning and provision for public transport.

<sup>64</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

Climatic factors	<a href="#">National Climate Change Adaptation Framework</a> (2012)	C1	Reduce waste of energy, and maximise use of renewable energy sources	Promote energy efficient developments.
		C2	Minimise emissions of greenhouse gases to contribute to a reduction and avoidance of human-induced global climate change	Promote sustainable transport patterns through appropriate zoning and provision for public transport. Include a climate change adaptation strategy.
		C3	Reduce the need to travel	
		C4	Assess, plan and manage adaptation to climate change impacts	
Material Assets	<a href="#">Our Sustainable Future: A framework for sustainable development for Ireland</a> (2012)	M1	Make best of use of existing infrastructure and promote the sustainable development of new infrastructure.	Direct development to brownfield lands in preference to developing greenfield lands. Encourage rehabilitation of existing housing stock/buildings where appropriate. Sustain the viability of services in smaller towns and villages.
Cultural Heritage (architectural and archaeological)	<a href="#">European Convention on the Protection of Archaeological Heritage</a> (1992) <a href="#">Framework and Principles for the Protection of the Archaeological Heritage</a> (1999) <a href="#">Architectural Heritage Protection Guidelines</a> (2004)	H1	Promote the protection and conservation of the cultural heritage, including architectural and archaeological heritage	To conserve and protect the archaeological heritage with regard to entries on the RMP. To conserve and protect the special interest and character of the architectural heritage with regard to the RPS, the NIAH and ACAs.
Landscape	The European Convention on Landscape, 2000 <a href="#">A National Landscape Strategy for Ireland Strategy Issues paper for consultation</a> (2011)	L1	Conserve and enhance valued natural and historic landscapes, their character and features within them.	Avoid the loss of designated views. Protect designated landscapes.

## 5 Assessment of Alternatives

### 5.1 Introduction

The [SEA Directive](#)<sup>65</sup> requires the Environmental Report to consider reasonable alternatives taking into account the objectives and geographical scope of the plan or programme and the significant environmental effects of the alternatives selected.

The alternative plan scenarios were considered at an early stage of the process and through an iterative process, the most appropriate development plan scenario was selected.

In accordance with the [Guidelines](#) the alternatives put forward should be reasonable, realistic and capable of implementation. They should also be in line with the appropriate strategic level at which the Plan will be implemented within the national planning hierarchy. The Plan will be framed within a policy context set by a hierarchy of National and Regional level strategic plans as well as the Irish and European legislative framework. Therefore the options for alternatives are limited, and a scenario such as the 'do nothing' scenario has not been included as the Council is required to prepare a Plan and as such this scenario is not reasonable nor realistic.

As set out under Section 2.3, the [RPGs](#) have allocated a projected population growth figure for the county, 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 county. The RPGs have specified what allocation must be directed to Kilkenny as a hub and Ferrybank as part of the Waterford gateway, but other than that the Council has discretion with its Core Strategy. Therefore, it is alternative distributions of this growth that are examined here.

One other element that was included in the alternatives was the development of wind energy. National policy and guidelines recommend that a Strategy is undertaken, but the form this strategy takes is determined at local level through the plan process.

### 5.2 Alternative 1: Continued consolidation

The 2008 settlement hierarchy, as set out in Section 3.4.1, prioritises the following settlements:

- Kilkenny City as the hub,
- Ferrybank as part of the Waterford City Gateway,
- The Environs of New Ross as a large town, and
- Callan, Castlecomer, Graiguenamanagh and Thomastown as the four District towns.

Alternative 1 concentrates growth mainly into these seven settlements, with little growth being allocated to the smaller level settlements or to rural areas. Access to public transport is a guiding principle of this approach, and Thomastown, as the only District Town served by rail, is prioritised above the level of the other three District towns. Wind energy developments are concentrated only where they exist at present, with no allowance made for new locations.

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<sup>65</sup> EU, [Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment](#)

### 5.3 Alternative 2: Dispersed growth

This scenario is one which places very few restrictions on development throughout the Plan area. No specific targets or limitations on growth would be set in the core strategy of the Plan for settlements within the county at a level lower than the hub and gateway. The ‘pot’ of zoned land, would be distributed amongst all remaining settlements without prioritisation. Development would be allowed to proceed in an ad hoc manner and would follow market forces to a great extent. Developments such as quarries and wind energy developments would be located where demand is greatest. Most development would occur on greenfield sites.

Alternative 2 envisages potentially inappropriate lands around settlements zoned for development without truly assessing the overall need for, or scale of development in those settlements. Significant levels of ribbon development along roads between settlements would result. Development would occur in unserved or in insufficiently served areas. It would most likely lead to a highly dispersed settlement pattern, with severe development pressure in the rural areas adjacent to Kilkenny city and Ferrybank.

This would lead to a weakening of town and village structures throughout the county. While this alternative would allow for a freedom of development and would provide some short term economic benefits to the settlements in the plan area and their surrounding hinterlands, it is not sustainable. It would lead to a deterioration of the settlement structures of the county, with a significant shift towards rural rather than urban development. Ultimately it could lead to a loss of population base within key centres and consequently a loss of critical mass for the development of key services and facilities within those centres. Furthermore, urban generated housing within the transport corridors would have long term implications for future road development and would compromise re-alignments, or road geometry with adverse risks to road users. The proliferation of one-off housing would have negative effects on water quality (which is identified as a key EPO 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.

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

This alternative acknowledges the designation of Kilkenny as a hub, and Waterford as a gateway within the National Spatial Strategy, but redesignates the ‘District Towns’. The 2008 District Towns were designated on the basis of the [Regional Planning Guidelines](#), which categorised towns of between 1,500 and 5,000 as ‘District Towns’. The 2011 Census shows that Castlecomer and Graiguenamanagh’s populations did not reach the 1,500 mark. In this alternative, Piltown and Mooncoin, which have the next highest populations, are designated as District Towns in place of Castlecomer and Graiguenamanagh.

**Table 5.1: Population of urban centres (2011)**

<b>Town</b>	<b>2011 Population</b>
Callan	2,330
Thomastown	2,273
Castlecomer	1,456
Graiguenamanagh	1,252
Piltown	1,187
Mooncoin	1,166

Piltown and Mooncoin would benefit from this designation, with the concentration of resources and additional population into these centres. Both would be subject to large levels of zoning in this Plan to accommodate the proposed increase. A large growth area would be formed around Ferrybank, Piltown and Mooncoin in the south of the county.

As part of this alternative, new areas for wind energy development would be selected on the basis of viability alone. Only those areas with highest wind speeds would be selected for wind farm development, regardless of landscape sensitivities or the presence or absence of existing wind farms.

In terms of water services, Piltown has capacity in water supply, but not in wastewater services. Mooncoin has capacity in both water and wastewater. Castlecomer and Graiguenamanagh have capacity available in both water and wastewater. In this alternative therefore, water quality in Piltown could be adversely affected.

Castlecomer and Graiguenamanagh were subject to a Flood Risk Assessment as part of Amendments to their Local Area Plans<sup>66</sup>. Both have areas of flood risk within the town centres. Mooncoin was included in the Strategic Flood Risk Assessment carried out for Variation 2 to the County Development Plan 2008. Mooncoin also contains an area of flood risk within the town centre. The Piltown Local Area Plan (2011)<sup>67</sup> includes a Stage 1 and Stage 2 Flood Risk Assessment which indicates that the central area of the town is subject to flooding.

Castlecomer was designated as a District Town in 2008 as it had surpassed the 1,500 population threshold. Graiguenamanagh was designated as a District Town on the basis of existing services and historical context. Both were historically significant market towns which have grown in population since 1966, as shown in Table 5.2 below. Both have good levels of services including a range of commercial services and secondary schools. In both cases, there are numerous brownfield, centrally located sites which would benefit from redevelopment. The Council has invested in both towns over the years, with libraries, fire stations, and Area Offices being situated in each.

This is in contrast to Piltown and Mooncoin, both of which have experienced recent rapid population growth. For the most part, development in either settlement would take place on greenfield land. These settlements are both located in the south of the county, in close proximity to the designated gateway of Waterford. Development in this area should be directed into Ferrybank, which has a large area of zoned land, and the services, to accommodate such an increase. Waterford and Belview are the largest employment and service centres in this area and in order to encourage sustainable transport patterns, most residential development should be directed into Ferrybank. Designating Piltown and Mooncoin as growth centres would result in less development for Ferrybank and an increase in unsustainable travel patterns.

From a social and economic perspective, existing services in Castlecomer and Graiguenamanagh would suffer with the removal of their District Town designation.

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<sup>66</sup> [http://www.kilkennycoco.ie/eng/Services/Planning/Local%20Area%20Plans/Adopted\\_Local\\_Area\\_Plans/](http://www.kilkennycoco.ie/eng/Services/Planning/Local%20Area%20Plans/Adopted_Local_Area_Plans/)

<sup>67</sup>

[http://www.kilkennycoco.ie/eng/Services/Planning/Local%20Area%20Plans/Adopted\\_Local\\_Area\\_Plans/Piltown.html](http://www.kilkennycoco.ie/eng/Services/Planning/Local%20Area%20Plans/Adopted_Local_Area_Plans/Piltown.html)

**Table 5.2: Comparison of Population Growth**

Town	Population						Rate of growth 1966-2011
	2011	2006	2002	1996	1991	1966	
Castlecomer	1,456	1,531	1,482	1,380	1,396	1,141	28%
Graiguenamanagh	1,252	1,097	1,166	1,113	1,112	1,177	6%
Piltown	1,187	968	778	716	717	418	184%
Mooncoin	1,166	1,002	854	855	810	505	131%

## 5.5 Assessment of Alternatives

These three alternatives are assessed against the chosen planning policy objectives (PPOs) and Environmental Policy Objectives (EPOs) as identified in Chapter 4. Each alternative is assessed as to whether it would have a potentially **positive**, **neutral** or potentially **negative** impact on each objective. These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects. A short description of the impacts is set out below.

### 5.5.1 Alternative 1: Continued consolidation - Likely significant effects

#### Environmental impacts

This alternative concentrates populations into locations with existing services and facilities, and access to public transport. Investment in key infrastructure can be concentrated into a very small number of settlements. Sustainable travel is promoted. Valuable natural resources such as water quality are protected through targeted infrastructural measures. No allowance is made for additional wind energy developments, which would result in less use of renewable energy sources.

#### Planning impacts

This alternative does not support the rural population, which may lead to a population decline in rural areas and in smaller settlements.

### 5.5.2 Alternative 2: Dispersed growth - Likely significant effects

#### Environmental impacts

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

#### Planning impacts

The provision of key services such as water supply and wastewater treatment would become costly in both financial and environmental quality terms.

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

#### Environmental impacts

In this alternative, a large growth area would be formed around Ferrybank, Piltown and Mooncoin in the south of the county. As Piltown’s wastewater treatment plant is currently overloaded, any additional loading would negatively affect water quality in Piltown. This may have a resulting negative effect on the conservation status of the Lower River Suir cSAC which is located in close proximity to both settlements. Directing growth into the smaller centres of Piltown and Mooncoin would detract from the emphasis on Ferrybank as part of the Waterford Gateway, and would result in an increase in unsustainable travel patterns and a negative effect on air quality. As Piltown and Mooncoin were not historically large service centres, there are very few opportunities for brownfield redevelopment, and most development in both would take place on the edges of the centres, on greenfield land. This would have negative environmental effects through the increased replacement of agricultural land by artificial surfaces.

As part of this alternative, new areas for wind energy development would be selected on the basis of viability alone. Only those areas with highest wind speeds would be selected for wind farm development, regardless of landscape sensitivities or the presence or absence of existing wind farms.

#### Planning impacts

From a social and economic perspective, existing services in Castlecomer and Graigueanamanagh would suffer with the removal of their District Town designation.

### 5.5.4 Assessment against each SEA Objective

Table 5.3 below assesses each Alternative against each of the SEA objectives.

**Table 5.3: Assessment of Alternatives**

#### Environmental Parameter – SEA objectives

#### Alternative

1: Continued Consolidation  
 2: Dispersed Growth  
 3: Selection of new growth areas

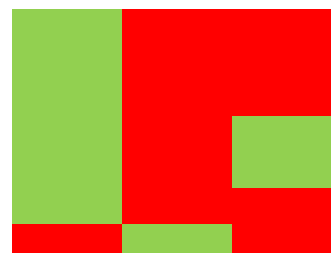
#### Biodiversity, fauna and flora

Protect designated sites: SACs, NHAs and SPAs from development.  
 Identify locally important habitats for protection.  
 Provide for green infrastructure.  
 Concentrate development in areas with least sensitivities.  
 Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species.



#### Population and Human Health

Improve people’s quality of life based on high-quality residential, working and recreational environments and on sustainable travel patterns.  
 Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, and Regional Planning Guidelines.  
 Promote higher density residential development in suitable locations.  
 Sustain the viability of services in smaller towns and villages.





Promote sustainable transport patterns through appropriate zoning and provision for public transport.

Require appropriate levels of recreational areas with any residential application.

Minimise noise, vibration and emissions from traffic

Require noise controls with all relevant applications.

**Soil**

Maintain the quality of soils

Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands.

Minimise the consumption of non-renewable sand, gravel and rock deposits

Minimise the amount of waste to landfill

Direct development to brownfield lands in preference to developing greenfield lands.

Encourage rehabilitation of existing housing stock where appropriate.

Provide appropriate waste disposal facilities, including for composting and recycling in all developments.

**Water**

Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.

Promote sustainable water use based on a long-term protection of available water resources.

Reduce progressively discharges of polluting substances to waters

Mitigate the effects of floods and droughts including vulnerability to climate change.

Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks.

Provide sufficient capacity in water services to serve zoned land.

Include Strategic Flood Risk Assessment as part of the Plan.

**Air**

Reduce all forms of air pollution

Promote energy efficient developments.

Promote sustainable transport patterns through appropriate zoning and provision for public transport.

**Climatic Factors**

Reduce waste of energy, and maximise use of renewable energy sources

Minimise emissions of greenhouse gases to contribute to a reduction and avoidance of human-induced global climate change

Reduce the need to travel

Assess, plan and manage adaptation to climate change impacts

Promote energy efficient developments.

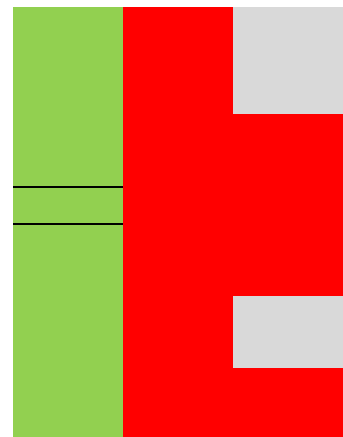
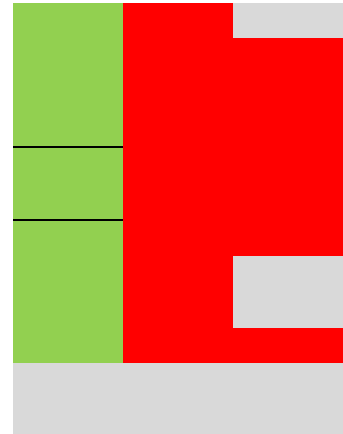
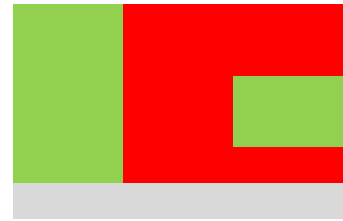
Promote sustainable transport patterns through appropriate zoning and provision for public transport.

Include a climate change adaptation strategy.

**Material Assets**

Make best of use of existing infrastructure and promote the sustainable development of new infrastructure.

Direct development to brownfield lands in preference to developing



greenfield lands.

Encourage rehabilitation of existing housing stock/buildings where appropriate.

Sustain the viability of services in smaller towns and villages.

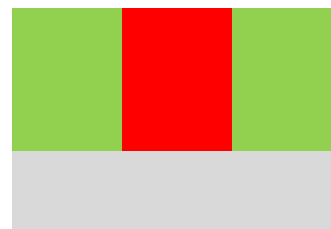


**Cultural Heritage**

Promote the protection and conservation of the cultural heritage, including architectural and archaeological heritage

To conserve and protect the archaeological heritage with regard to entries on the RMP.

To conserve and protect the special interest and character of the architectural heritage with regard to the RPS, the NIAH and ACAs.



**Landscape**

Conserve and enhance valued natural and historic landscapes, their character and features within them.

Avoid the loss of designated views.

Protect designated landscapes.



**5.6 Selection of Preferred Alternative**

Alternative 1: Continued Consolidation emerges as the preferred alternative, however an element of Alternative 2: Dispersed Growth, in relation to encouraging some level of growth of the smaller settlements should be incorporated to ensure that these smaller settlements are sustained.

In relation to the Wind energy development strategy, each alternative has downsides. Alternative 1: Consolidation, makes no allowance for new areas in order to protect the landscape from any negative visual impacts. Alternative 2: Dispersed growth imposes no restrictions on the development of wind energy, and therefore doesn't take account of any potentially negative effect on the landscape. Alternative 3: new growth areas, directs developments into areas of highest viability, but does not take account of locations of existing windfarms, or landscape impacts. The best solution is the recognition of areas of highest viability, whilst taking account of landscape sensitivities.

Therefore the final preferred alternative is consolidation of the existing settlement hierarchy with reinforcement of smaller settlements, with a Wind energy development strategy based on areas of highest viability, taking environmental sensitivities into account. The preferred settlement hierarchy is set out in Table 5.4.

Settlement	Additional Population to 2020
County Kilkenny	10,021
Kilkenny City	2,200
Ferrybank/Belview (Part Gateway)	1,125
<b>District Towns</b>	
Callan	2.4% (240)
Castlecomer	1.5% (150)
Graiguenamanagh	1.3% (130)
Thomastown	2.38% (238)
Remainder area to include smaller towns and villages and environs of New Ross and the rural area of the county	5,885
<b>Total</b>	<b>10,021</b>



## 6 Likely significant effects on the Environment

### 6.1 Introduction

The preferred Plan strategy was selected based on an assessment of the three alternatives. This section evaluates 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 each chapter's Strategic Aim, which sets out the main priorities and emphases of the chapter. The evaluation then moves to the objectives of each chapter.

In line with the requirements of Section 10 of the Planning and Development Acts 2000-2010, the Plan must include a number of mandatory objectives. In addition, a number of elective objectives have been devised. 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 strategic aims and 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

Where a development objective has a significant adverse impact, this is discussed in more detail.

Chapter	Development objective	Assessment of impact on SEA objectives (See Chapter 4)			
		Significant beneficial impact	Uncertain impact	Significant adverse impact	No relationship or insignificant impact
1	To implement the provisions of Articles 6(3) and 6(4) of the EU Habitats Directive.	B1 W1 W3			P1 P2 S1 S2 S3 S4 W2 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To ensure that any plan or project within the functional area of the Planning Authority is subject to appropriate assessment in accordance with the Guidance <i>Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities</i> , 2009 and is assessed in accordance with Article 6 of the Habitats Directive in order to avoid adverse impacts on the integrity and conservation objectives of the site.	B1 W1 W3			P1 P2 S1 S2 S3 S4 W2 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To implement the Development Management Standards as set out in the Plan as appropriate.	B1 P1 P2 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1			S1
	To prepare a Climate Change Adaptation plan following the adoption of the Development Plan.	B1 P1 S3 S4 W1 W2 W4 A1 C1 C2 C3 C4 M1	S2		P2 W3 H1 L1
3	<i>Strategic Aim: To implement the provisions of the Regional Planning Guidelines and to target the growth of Kilkenny City, Ferrybank/Belview, the District Towns, the other settlements in the hierarchy and rural areas to advance sustainable development.</i>	B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1			
	To promote the redevelopment and renewal of areas in need of regeneration.	P1 P2 S1 S2 S3 S4 A1 C1C2 C3 M1 L1	B1 W1 H1		W2 W3 W4 C4
	To implement the <a href="#">NSS</a> and <a href="#">South East Regional Planning Guidelines</a> by encouraging developments into the designated Hub of Kilkenny and the environs of the Waterford Gateway.	P1 P2 S2 W1 W2 W3 A1 C1 C2 C3 M1 L1			B1 S1 S3 S4 W4 C4 H1

	To review the County Development Plan in the light of any emerging replacement to the <a href="#">NSS</a> and <a href="#">South East Regional Planning Guidelines</a> and vary the Development Plan accordingly if necessary.	P1	P2 S2 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1		B1 S1 S3 S4 W4
	To support the strengthening of critical mass within the catchment of the Waterford Gateway by implementing a co-ordinated approach to the development of New Ross and its environs within County Kilkenny between Kilkenny County Council, New Ross Town Council and Wexford County Council.	P1 P2 S2 W1 W2 W3 A1 C1 C2 C3 M1 L1			B1 S1 S3 S4 W4 C4 H1
	To ensure that the District Towns will in so far as practical be self-sufficient incorporating employment activities, sufficient retail services and social and community facilities.	P1 P2 S2 W2 W3 A1 C1 C2 C3 M1 L1	B1 W1		S1 S3 S4 W4 C4 H1
	Promote enterprise and economic development in Graiguenamanagh in line with the <a href="#">Graiguenamanagh-Tinnahinch Development and Economic Study, 2006</a>	P1 P2 S2 W2 W3 A1 M1 L1	B1 W1		S1 S3 S4 W4 C1 C2 C3 C4 H1
	To facilitate development of housing, economic development, services and infrastructure in the smaller towns and villages of the county at a scale and character which is appropriate in order to sustain and renew populations and services in these areas.	P1 P2 S2 W1 W2 W3	A1 C1 C2 C3 C4 M1 L1		B1 S1 S3 S4 W4 H1
	To monitor the trends in rural housing and population during the lifetime of the plan to ascertain if further rural housing policy responses are required during the plan period.		P1 P2 S1 S2 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1		B1 S3 S4 W4
4	<i>Strategic Aim: To provide a framework for the implementation of the Council's economic strategy and the protection of the environment and heritage, to position the county for sustainable economic growth and employment.</i>	B1 P1 W1 W2 W3 H1 L1	P2 S2		S1 S3 S4 W4 A1 C1 C2 C3 C4 M1
	To increase co-operation between Kilkenny Local Authorities, existing third level institutions and the proposed Technological University for the South East to support employment creation, innovation and lifelong learning.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To ensure the highest standards of environmental protection	B1 P2 S1 W1 W2			P1 S3 S4 W4 C1 C3 C4 M1

in the assessment of planning applications for all development proposals.	W3 A1 C2 H1 L1			
To ensure an adequate amount of employment land on a campus type environment is available within the County for ICT and technology office based industry at the appropriate strategic locations.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To deliver and implement the 6 projects associated with the Medieval Mile proposals during the lifetime of the Plan 2014 – 2020 for the city and county.	P1 M1 H1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 L1
To continue the development of major flagship tourism projects within the county to enhance the tourism product for the county.	P1 M1 H1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 L1
To ensure that an adequate quantity and range of land is available for enterprise development and that the appropriate infrastructure is provided.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To deliver high speed broadband to the Belview port area within the lifetime of the Plan.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To assist in the provision of natural gas supply to the port area within the life time of the plan	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To review the Ferrybank Belview Local Area Plan in 2015 continuing with the policy of partnership with the local community.		B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1		W4
To ensure the sustainable development of the District towns in the County to achieve their target populations and enhance their capacity to attract new investment in employment, services and public transport for the benefit of their own populations and that of their rural hinterlands.	P1 M1 P2 S2			B1 S1 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
To promote a diverse and sustainable local economy through the designation of sufficient lands for employment related	P1 M1 P2 S2			B1 S1 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1

	uses, including facilities, to promote SME growth through the local area plans for the District towns.				
	To review the local area plans for the District towns in 2015 following the adoption of the county development plan.		B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1		W4
	The Local Authority will prepare an urban framework document to assist in the development of the Smithwick’s site and adjacent lands including lands along Bateman Quay	P1 S2 C2 C3 M1 H1	B1 W1		P2 S1 S3 S4 W2 W3 A1 C1 C4 L1
	No further retail parks will be granted permission in and around the City and Environs over the period 2014 – 2020	C2 C3			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C4 M1 H1 L1
	To engage with the other relevant local authorities within the region in the preparation of a joint retail strategy for the greater Waterford City area.				B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To sustain and enhance the vitality and viability of the role and potential of the four District Towns.	P1 M1 P2 S2			B1 S1 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To improve convenience market share retained within the county to 80% post 2020 To improve comparison market share retained within the county to 75% post 2020 To increase convenience trade draw from 8% to 15% post 2020 To maintain comparison trade draw at 58% post 2020				B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
5	<i>Strategic Aim: To integrate the planning and sustainable development of the county with regard to the housing, social, community and cultural requirements of the county and its population.</i>	P1 P2			B1 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To implement the Housing Strategy contained in Appendix B.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To require 20% of the land zoned for residential use, or for a	P1			B1 P2 S1 S2 S3 S4 W1 W2

mixture of residential and other uses, be made available for the provision of social housing.					W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To require that a mixture of residential unit types and sizes are developed to reasonably match the requirements of different categories of households within the city and county.	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
Complete the review of the Traveller Accommodation programme.	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To implement the Kilkenny Travellers Horse project	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To redevelop the Wetlands halting site as a group housing scheme.	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To implement the provisions of the Traveller Accommodation programme	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
The Council will facilitate the provision of childcare and early childhood education facilities in a sustainable manner in appropriate locations which include the following: larger new housing estates, industrial estates and business parks, in the vicinity of schools, neighbourhood and district centres and adjacent to public transport facilities.	P1 P2 A1 C2 C3 M1				B1 S1 S2 S3 S4 W1 W2 W3 W4 C1 C4 H1 L1
The Council will liaise with the Department of Education and Skills, and all providers of education, to assist where possible in the development of adequate education centres, and to identify and facilitate of suitable sites for new educational facilities.	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To integrate the planning and sustainable development of the county with regard to the social, community and cultural requirements of the county and its population.	P1 H1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
To progress and achieve the completion and opening of the new City Library at County Hall.	P1				B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1



					H1 L1
6	<i>Strategic Aim: To manage rural change and guide development to ensure vibrant and sustainable rural areas.</i>	B1 P1 P2 S1 W1 W2 W3 W4	S2 A1 C1 C2 C3		S3 S4 C4 M1 H1 L1
7	<i>Strategic Aim: To protect and improve recreational, tourism and arts facilities for the benefit of residents and for the promotion of tourism.</i>	P1	B1 W1 H1 L1		P2 S1 S2 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 M1
	The Council shall seek the preservation and improvement of amenities and recreational amenity facilities, and shall facilitate and provide for the extension of recreational amenities in the county where appropriate, subject to environmental, heritage and financial considerations	B1 P1 H1			P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
	The Council will continue to assist with & support the development of the Nore Valley Walk and protect its route from encroachment by unsympathetic development	P1 L1	B1 W1		P2 S1 S2 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To develop a walking and cycling strategy within the life of this plan	P1 P2 A1 C2 C3			B1 S1 S2 S3 S4 W1 W2 W3 W4 C1 C4 M1 H1 L1
	To protect the New Ross to Waterford railway line from encroachment by development and to retain its continuity.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To protect the Kilkenny to Portlaoise former railway line and spur line to Castlecomer from encroachment by development and support the development of a trail if feasible.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	The Council shall preserve and protect existing public rights of way which give access to seashore, uplands, riverbank or other places of natural beauty or recreational use.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To undertake a survey of existing public rights of way in the county and establish a register within the life of the Plan	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	Complete the development of the River Nore Linear Park within the lifetime of the Plan	P1 L1	B1 W1		P2 S1 S2 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To develop an arts venue within the county to fulfil a multiplicity artistic uses.	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1

	To implement the Kilkenny Local Authorities Arts Strategy	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
8	<i>Strategic Aim: To seek the protection, sustainable management and where possible, enhancement of heritage for the benefit of current and future generations and to promote increased awareness of heritage</i>	B1 P1 W1 W2 W3 W4 H1 L1			P2 S1 S2 S3 S4 A1 C1 C2 C3 C4 M1
	To implement, in partnership with the Kilkenny Heritage Forum and all relevant stakeholders, a County Heritage Plan and County Biodiversity Plan	B1 W1 H1			P1 P2 S1 S2 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
	To protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (EU Habitats Directive, EU Birds Directive).	B1 W1	S2 M1		P1 P2 S1 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To protect and where possible enhance the natural heritage sites designated in National legislation (the Wildlife Acts and the Flora Protection Order). This protection will extend to any additions or alterations to sites that may arise during the lifetime of this plan.	B1 W1	M1		P1 P2 S1 S2 S3 S4 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To prepare and support the implementation of a Green Infrastructure Strategy for County Kilkenny, as resources allow	B1 P1 S1 W1 W2 W3 C4 L1			P2 S2 S3 S4 W4 A1 C1 C2 C3 M1 H1
	To protect and where possible enhance wildlife habitats and landscape features which act as ecological corridors/networks and stepping stones, such as river corridors, hedgerows and road verges, and to minimise the loss of habitats and features of the wider countryside (such as ponds, wetlands, trees) which are not within designated sites. Where the loss of habitats and features of the wider countryside is unavoidable as part of a development, to ensure that appropriate mitigation and/or compensation measures are put in place, to conserve and enhance biodiversity and landscape character and green infrastructure networks.	B1 P1 S1 W1 W2 W3 C4 L1			P2 S2 S3 S4 W4 A1 C1 C2 C3 M1 H1
	Kilkenny County Council will promote the planting of native	B1			P1 P2 S1 S2 S3 S4 W1 W2

tree and shrub species, by committing to using native species (of local provenance wherever possible) in its landscaping work and on County Council property				W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
To protect and sustainably manage the landscape character of County Kilkenny, having regard to the findings of the landscape character assessment and the development management standards as set out in this chapter for the sustainable development of the county and appropriate conservation of its landscape character.	L1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
To ensure that development within the Landscape Character Areas of Brandon Hill Uplands and the River Valleys of the Nore, Barrow and Suir, which are highly scenic and of significant visual amenity value, are carefully sited and designed and can be successfully assimilated into the landscape.	L1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
To preserve and improve places or areas from which views or prospects of special amenity value exist, as identified in Appendix I and on Figure 8.2.	L1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
Protect archaeological sites and monuments (including their setting), underwater archaeology, and archaeological objects, including those that are listed in the Record of Monuments and Places, and in the Urban Archaeological Survey of County Kilkenny or newly discovered sub-surface and underwater archaeological remains.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
To facilitate and support the implementation of existing (and any further) conservation plans, as resources allow.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
To ensure the protection of the architectural heritage of County Kilkenny by including all structures considered to be of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest in the Record of Protected Structures.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
To respond to the Ministerial recommendation to include in	H1			B1 P1 P2 S1 S2 S3 S4 W1

	the Record of Protected Structures, structures which have been identified as being of Regional, National or International significance in the National Inventory of Architectural Heritage survey of the city and county published in 2006.				W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
	To carry out a review of the Record of Protected Structures.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
	To ensure the preservation of the special character of each ACA listed (Table 8.3)above and within the county particularly with regard to building scale, proportions, historical plot sizes, building lines, height, general land use, building materials, historic street furniture and paving.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
	To designate ACAs where appropriate and provide a local policy framework for the preservation of the character of these areas.	H1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 L1
9	<i>Strategic Aim: To provide a framework for the protection of the environment, including water quality, the avoidance of flood risk and the provision of a high quality telecommunications infrastructure.</i>	B1 P1 P2 S1 S2 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1			S3 S4 H1 L1
	Implement the programme as outlined in the Water Services Investment Programme.	B1 P1 W1 W2 W3 M1			P2 S1 S2 S3 S4 W4 A1 C1 C2 C3 C4 H1 L1
	Meet in full the requirements of the E.U. <a href="#">Urban Waste Water Treatment</a> and <a href="#">Water Framework</a> Directives.	B1 P1 W1 W2 W3 M1			P2 S1 S2 S3 S4 W4 A1 C1 C2 C3 C4 H1 L1
	To update Noise Mapping in accordance with revised or updated thresholds for Noise Mapping.	P1 P2			B1 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To promote compliance with environmental standards and objectives established— for bodies of surface water, by the European Communities (Surface Waters) Regulations 2009; for groundwater, by the European Communities (Groundwater) Regulations 2010; which standards and objectives are included in the South East River Basin Management Plan	B1 P1 W1 W2 W3 M1			P2 S1 S2 S3 S4 W4 A1 C1 C2 C3 C4 H1 L1

	To complete the mapping of source protection areas and to map Source Protection Areas for any new public water supply schemes as appropriate.	B1 P1 W1 W2 W3 M1			P2 S1 S2 S3 S4 W4 A1 C1 C2 C3 C4 H1 L1
	To ensure that Source Protection Areas are identified for any multiple unit housing developments with private water supplies.	B1 P1 W1 W2 W3 M1			P2 S1 S2 S3 S4 W4 A1 C1 C2 C3 C4 H1 L1
	To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the <a href="#">Guidelines</a> , the avoidance of development in areas where flood risk has been identified shall be the primary response	P1 W4 C4	S2 M1		B1 P2 S1 S3 S4 W1 W2 W3 A1 C1 C2 C3 H1 L1
	To implement the Joint Waste Management Plan for the South East Region.	P1 S4			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To control the following for the purposes of reducing the risk or limiting the consequences of a major accident: <ul style="list-style-type: none"> <li>• The siting of Major Accident Hazard sites</li> <li>• The modification of an existing Major Accident Hazard site</li> <li>• Development in the vicinity of a Major Accident Hazard site</li> </ul>	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To facilitate the delivery of high quality broadband to the District towns in the county	P1			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	To set up and maintain a register of approved telecommunications structures which will provide a useful input to the assessment of future telecommunications developments and would also be useful from the point of view of maximising the potential for future mast sharing and co-location.	M1 L1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1
10	<i>Strategic Aim: To promote and facilitate all forms of renewable energies and improvements in energy efficiencies as a response to climate change.</i>	P1 P2 A1 C1 C2 C4 M1	H1 L1		B1 S1 S2 S3 S4 W1 W2 W3 W4 C3
	Facilitate the development of projects that convert biomass to energy.	A1 C1 C2 C4			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1

In general, direct commercial bioenergy plants to locate on brownfield sites which are adjacent to industrial areas or on lands which are reserved for industrial uses in any development plan. Brownfield sites in rural areas may also be considered.	P1 S2 A1 C1 C2 C3 C4 M1	L1		B1 P2 S1 S3 S4 W1 W2 W3 W4 H1
Ensure that any commercial bioenergy plant is close to the point of demand and is served by public roads with sufficient capacity to absorb increased traffic flows and adjacent to transport corridors.	P1 P2 A1 C1 C2 C3 C4 M1			B1 S1 S2 S3 S4 W1 W2 W3 W4 H1 L1
Seek to respond positively to applications for waste to energy projects.	A1 C1 C2 C4			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
Facilitate the development of appropriate projects that convert hydro power to energy.	A1 C1 C2 C4	B1 W1 H1		P1 P2 S1 S2 S3 S4 W2 W3 W4 C3 M1 L1
Have regard to the provisions of the <a href="#">Guidelines on the Planning, Design, Construction and Operation of Small Scale Hydro-Electric Schemes and Fisheries</a>	B1 W1 A1 C1 C2 C4			P1 P2 S1 S2 S3 S4 W2 W3 W4 C3 M1 H1 L1
The Planning Authority will support and facilitate the development of passive solar design proposals for the development of houses in rural and urban areas, and will draw on the recommendations of the <a href="#">Kilkenny Rural House Design Guide</a> , and the Guidelines on <a href="#">Sustainable Residential Development in Urban Areas</a> .	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
The Planning Authority will make available advice on Passive Solar Design in preplanning consultations for domestic and commercial buildings.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
Consider impacts of overshadowing on the efficiency of existing solar technologies when assessing planning applications.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
Support applications to install solar panels on public buildings and schools within the county should the opportunity arise.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
Support the development of geothermal energy and heat pumps	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
To review the progress of the <i>Climate Change Strategy</i> , report	B1 W4 A1 C1 C2			P1 P2 S1 S2 S3 S4 W1 W2

	on the progress to date and thereafter develop a new strategy and action plan in line with national policy.	C3 C4			W3 M1 H1 L1
	Encourage high standards of energy efficiency in all building developments and encourage developers, owners and tenants to improve the environmental performance of the building stock, including the deployment of renewable energy	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
	Require a provisional BER certificate as part of any planning application, showing how the proposal will comply with Part L of the Building Regulations.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
	To require that planning applications for large buildings as defined by the Energy Performance of Building Regulations, demonstrate that due consideration has been given to the technical, environmental and economic feasibility of installing alternative energy systems in the proposed building, and that the use of such systems has been taken into account, as far as practicable, in the design of that building. This shall also apply to applications for ten or more housing units.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 S4 W1 W2 W3 W4 C3 M1 H1 L1
11	Strategic Aim: to co-ordinate transport and land use planning, reducing the demand for travel and the reliance on the private car in favour of public transport, cycling and walking.	P1 P2 A1 C2 C3 M1			B1 S1 S2 S3 S4 W1 W2 W3 W4 C1 C4 H1 L1
	The Council will implement the provisions of the <a href="#">National Cycle Policy Framework</a> where possible.	P2 A1 C1 C2 C3 C4			B1 P1 S1 S2 S3 S4 W1 W2 W3 W4 M1 H1 L1
	To facilitate the provision of bus shelters as appropriate.	P1 P2 A1 C1 C2 C3 C4			B1 S1 S2 S3 S4 W1 W2 W3 W4 M1 H1 L1
	To facilitate parking provision for tourist buses in towns and villages and at tourist attractions.	P1 P2 A1 C1 C2 C3 C4			B1 S1 S2 S3 S4 W1 W2 W3 W4 M1 H1 L1
	To develop and agree an appropriately planned policy response to access for Glanbia and the Leggetsrath roundabout in conjunction with the National Roads Authority.	M1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To develop and agree an appropriately planned policy response to access from the N29 Port road to industrial zoned lands in the Belview area in conjunction with the National Roads Authority.	M1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1

	To support the implementation of the NRA projects as outlined.	P1	B1 P2 S3 W1 A1 H1 L1		S1 S2 S4 W2 W3 W4 C1 C2 C3 C4 M1
	To reserve the proposed line of the western bypass for the city from the Castlecomer Road to the Callan Road free from development.	P1	B1 P2 S3 W1 A1 H1 L1		S1 S2 S4 W2 W3 W4 C1 C2 C3 C4 M1
	To preserve free from development proposed road realignment/improvement lines and associated corridors where such development would prejudice the implementation of National Roads Authority or County Council plans.	M1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To seek an upgrade of the R700 between New Ross and Kilkenny to National Secondary status and to provide a relief road for Thomastown.	P1 P2 A1 C2	B1 S2 S3 W1 H1		S1 S4 W2 W3 W4 C1 C3 C4 M1 L1
	To seek an upgrade of the Kilkenny to Urlingford Road (R693) to National Secondary status and to improve the road realignment in its entirety.	M1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	To seek an upgrade of the New Ross to Mullinavat Regional Road (R704)	M1			B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
12	<i>Strategic Aim: To encourage the creation of living and working environments of the highest quality by ensuring a high quality of design, layout and function for all development under the Planning Acts and Regulations, to conserve and build upon positive elements in the built and natural environment, and to protect amenities.</i>	B1 P1 P2 W1 W2 W3 W4 C1 C2 C3 C4 M1 H1 L1			S1 S2 S3 S4 A1



## 6.2 Summary of assessment

It is worth reiterating that the process of SEA and Development 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.

## 7 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, see Appendix 1, where land was rezoned 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 Standards”, see Section 1.2.8.

The two main exceptions to this are the Objectives in relation to the Habitats Directive and Flooding. The objective for Natura 2000 sites is set out in Section 1.3 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 Natura 2000 sites. The objective in relation to flooding is set out in Section 9.2.9.1 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 Mitigation of environmental problems as identified

Section 3 of this report set out the current state of the environment, and a number of environmental problems were identified. Specific mitigation measures have been included in the Plan to address these problems as follows:

- It was noted that there is only one Conservation Management Plan (CMP) in place for a Natura 2000 sites in Co. Kilkenny. A CMP can help protect whatever is important in Natura 2000 sites whilst enabling appropriate development. Section 8.2.1.1 of the Draft Plan states that the National Parks and Wildlife Service will be requested to prioritise the preparation of Conservation Management Plans for Natura 2000 Sites which are located in County Kilkenny.
- A section was included in 8.2.5 Woodlands, Trees and Hedgerows in relation to the National Survey of Native Woodlands and Ancient Woodlands.
- A section was included in 8.2.7 on peatlands, and a development management standard was added to protect them from inappropriate development.

- A number of protected views from Local Area Plans were added to the list of Protected views in the County Plan, to strengthen their protection, and also as it was identified that development outside the LAP boundary may impact on the view.

## 7.2 Development objectives

A number of development objectives have been identified as having uncertain impacts on the SEA objectives. These are outlined below, with a discussion of the possible effects, and how the mitigation measures to be included in the Plan will ensure no significant adverse impact.

<b>Chapter 1: Introduction</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objective</b>
To prepare a Climate Change Adaptation plan following the adoption of the Development Plan.	S2
<p><b>Mitigation included in Plan: See Section 9.2.9.1</b>            The avoidance of land at risk from flooding may include the avoidance of significant brownfield lands in central areas. As stated in Section 9.2.9.1, the Plan will “adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk”, in accordance with the <a href="#">Guidelines</a>. The Guidelines include for a justification test to be carried out where land is centrally located and is well situated for sustainable development reasons. If the justification test is satisfied, the land can be zoned. As the Plan will follow the Guidelines, adverse effects on sustainable and sequential development, from any Climate Change Adaptation Plan will be mitigated.</p>	
<b>Chapter 3: Core Strategy</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To promote the redevelopment and renewal of areas in need of regeneration.	B1 W1 H1
<p><b>Mitigation included in Plan: See Chapters 1,8 &amp;9</b> The promotion of areas in need of regeneration may lead to conflicts with environmental considerations. There are numerous mitigation measures included in the Plan however to ensure no negative effects. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage (Chapter 8) and water quality (Chapter 9). Therefore any adverse effects are unlikely.</p>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To review the County Development Plan in the light of any emerging replacement to the <a href="#">NSS</a> and <a href="#">South East Regional Planning Guidelines</a> and vary the Development Plan accordingly if necessary.	P2 S2 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1
<p><b>Mitigation included in Plan: See Chapters 1,8,9 &amp; 11</b>            As the Plan must adhere to any higher level Plans such as the <a href="#">NSS</a> and <a href="#">South East Regional Planning Guidelines</a>, the Plan will be varied as necessary. There are numerous mitigation measures included in the Plan however to ensure no negative effects. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). The Plan also includes a “Strategic aim to co-ordinate transport and land-use planning, reducing the demand for travel and reliance on the private car in favour of public transport, cycling and walking” (Chapter 11). Therefore any adverse effects are unlikely.</p>	

<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To ensure that the District Towns will in so far as practical be self-sufficient incorporating employment activities, sufficient retail services and social and community facilities.	B1 W1
<p><b>Mitigation included in Plan: See Chapters 1,8,9</b></p> <p>The creation of additional employment activities, retail services and social and community facilities may have an effect on natural heritage and water quality. There are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). Therefore any adverse effects are unlikely. Also, each District Town is subject to its own Local Area Plan, and associated SEA process, therefore any adverse effects will be assessed and mitigated through that process.</p>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Promote enterprise and economic development in Graiguenamanagh in line with the <a href="#">Graiguenamanagh-Tinnahinch Development and Economic Study, 2006</a> .	B1 W1
<p><b>Mitigation included in Plan: See Chapters 1,8 &amp; 9</b></p> <p>As above, there are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). Therefore any adverse effects are unlikely. Also, each District Town is subject to its own Local Area Plan, and associated SEA process therefore any adverse effects will be assessed and mitigated through that process.</p>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To facilitate development of housing, economic development, services and infrastructure in the smaller towns and villages of the county at a scale and character which is appropriate in order to sustain and renew populations and services in these areas.	A1 C1 C2 C3 C4 M1 L1
<p><b>Mitigation included in Plan: See Chapters 1,8,9 &amp; 11</b></p> <p>There are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). The Plan also includes a “Strategic aim to co-ordinate transport and land-use planning, reducing the demand for travel and reliance on the private car in favour of public transport, cycling and walking” (Chapter 11). Therefore any adverse effects are unlikely.</p>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To monitor the trends in rural housing and population during the lifetime of the plan to ascertain if further rural housing policy responses are required during the plan period.	P1 P2 S1 S2 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1
<p><b>Mitigation:</b></p> <p>As noted in the discussion of Alternative 2 in Chapter 5, a proliferation in rural housing has the potential to negatively affect water quality, and results in unsustainable transport patterns. This objective allows for a review. Any variation to the plan would require a Strategic Environmental</p>	

Assessment therefore any negative effects from a change in rural housing policy would be assessed at that stage.	
<b>Chapter 4: Economic Development</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Strategic Aim: To provide a framework for the implementation of the Council's economic strategy and the protection of the environment and heritage, to position the county for sustainable economic growth and employment.	P2 S2
<b>Mitigation included in Plan: See Chapters 1,8 &amp; 9</b> The implementation of the Council's economic strategy may have numerous effects. The protection of environment and heritage however is built into this Strategic Aim. Protection of other environmental effects, such as noise and emissions and maximising brownfield land must be mitigated also. There are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to noise and air pollution (Chapter 9) and the promotion of areas in need of regeneration (Chapter 3). Therefore any adverse effects are unlikely.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To review the Ferrybank Belview Local Area Plan in 2015 continuing with the policy of partnership with the local community.	B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1
<b>Mitigation:</b> Any review of the LAP will require a Strategic Environmental Assessment therefore any negative effects would be assessed at that stage.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To review the local area plans for the District towns in 2015 following the adoption of the county development plan.	B1 P1 P2 S1 S2 S3 S4 W1 W2 W3 A1 C1 C2 C3 C4 M1 H1 L1
<b>Mitigation:</b> Any review of an LAP will require a Strategic Environmental Assessment therefore any negative effects would be assessed at that stage.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
The Local Authority will prepare an urban framework document to assist in the development of the Smithwick's site and adjacent lands including lands along Bateman Quay	B1 W1
<b>Mitigation included in Plan: See Chapters 1,8 and 9</b> The development of this site may have an effect on natural heritage and water quality. There are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). Therefore any adverse effects are unlikely.	
<b>Chapter 6: Rural Development</b>	
<b>Development Objective</b>	<b>Uncertain effects</b>

	<b>on SEA objectives</b>
<i>Strategic Aim: To manage rural change and guide development to ensure vibrant and sustainable rural areas.</i>	S2 A1 C1 C2 C3
<b>Mitigation included in Plan: See Chapter 3</b>	
The development of rural areas may be at the expense of brownfield sites, and may result in an increasing need to travel, with resulting effects on air pollution. However, the rural housing policies as set out in Chapter 3 seek to restrict the proliferation of urban-generated rural housing and an objective is also included to monitor the trends in rural housing over the lifetime of the Plan.	
<b>Chapter 7: Recreation, Arts and Tourism</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
<i>Strategic Aim: To protect and improve recreational, tourism and arts facilities for the benefit of residents and for the promotion of tourism.</i>	B1 W1 H1 L1
<b>Mitigation included in Plan: See Chapters 1,8 and 9</b>	
The development of such facilities may have impacts on natural and cultural heritage. There are numerous mitigation measures included in the Plan to ensure no negative effects from this objective. This includes objectives and development management standards in relation to natural heritage (Chapter 1 and Chapter 8), cultural heritage, landscape (Chapter 8) and water quality (Chapter 9). Therefore any adverse effects are unlikely.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
The Council will continue to assist with & support the development of the Nore Valley Walk and protect its route from encroachment by unsympathetic development.	B1 W1
<b>Mitigation included in Plan: See Chapter 1</b>	
The River Nore is a designated SPA and cSAC. Section 1.3 of the Plan sets out that any development must be subject to appropriate assessment in accordance with the <i>Guidance Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009</i> , therefore any potential adverse effects will be dealt with in that assessment.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Complete the development of the River Nore Linear Park within the lifetime of the Plan	B1 W1
<b>Mitigation included in Plan: See Chapter 1</b>	
As above, the River Nore is a designated SPA and cSAC. Section 1.3 of the Plan sets out that any development must be subject to appropriate assessment in accordance with the <i>Guidance Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009</i> , therefore any potential adverse effects will be dealt with in that assessment.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (EU Habitats Directive, EU Birds Directive).	S2 M1
<b>Mitigation included in Plan: See Chapter 3</b>	
This objective may lead to the avoidance of centrally located sites with access to existing infrastructure due to the requirements for protection of plant and animal species. The mitigation measure for this is that Chapter 3 includes an objective for the promotion of areas in need of	

regeneration, but that any such regeneration must be in accordance with the protection of natural heritage as required by legislation.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To protect and where possible enhance the natural heritage sites designated in National legislation (the Wildlife Acts and the Flora Protection Order). This protection will extend to any additions or alterations to sites that may arise during the lifetime of this plan.	S2 M1
<b>Mitigation included in Plan: See Chapter 3</b> This objective may lead to the avoidance of centrally located sites with access to existing infrastructure due to the requirements for protection of plant and animal species. The mitigation measure for this is that Chapter 3 includes an objective for the promotion of areas in need of regeneration, but that any such regeneration must be in accordance with the protection of natural heritage as required by legislation.	
<b>Chapter 9: Infrastructure and Environment</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the <a href="#">Guidelines</a> , the avoidance of development in areas where flood risk has been identified shall be the primary response	S2 M1
<b>Mitigation included in Plan: See Chapter 9</b> The avoidance of land at risk from flooding may include the avoidance of significant brownfield lands in central areas. As stated in Section 9.2.9.1, the Plan will “adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk”, in accordance with the <a href="#">Guidelines</a> . The Guidelines include for a justification test to be carried out where land is centrally located and is well situated for sustainable development reasons. If the justification test is satisfied, the land can be zoned. As the Plan will follow the Guidelines, adverse effects on sustainable and sequential development will be mitigated.	
<b>Chapter 10: Renewable Energy Strategy</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Strategic Aim: To promote and facilitate all forms of renewable energies and improvements in energy efficiencies as a response to climate change.	H1 L1
<b>Mitigation included in Plan: See Chapter 8</b> In some cases the promotion of renewable energies may cause adverse effects on cultural heritage and landscape through adverse visual impacts. Mitigation measures are included in Chapter 8 as development management standards in relation to cultural heritage and landscape to ensure that no development will have a negative effect on cultural heritage or landscape.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
In general, direct commercial bioenergy plants to locate on brownfield sites which are adjacent to industrial areas or on lands which are reserved for industrial uses in any development plan. Brownfield sites in rural areas may also be considered.	L1
<b>Mitigation included in Plan: See Chapter 8</b> Commercial scale bioenergy plants may have an adverse impact on landscape. Mitigation measures	

are included in Chapter 8 (Section 8.2.9) as development management standards to ensure that no development will have a negative effect on landscape.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Facilitate the development of appropriate projects that convert hydro power to energy.	B1 W1 H1
<b>Mitigation included in Plan: See Chapters 1,8 &amp; 9</b> Hydro power projects may have an adverse effect on species, water quality and cultural heritage, if unmitigated. Mitigation measures are included in Chapters 1 and 8 as development management standards in relation to natural and cultural heritage and in Chapter 9 in relation to water quality, to ensure that no development will have a negative effect on natural, cultural heritage or water quality.	
<b>Chapter 11: Transport</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To support the implementation of the NRA projects as outlined.	B1 P2 S3 W1 A1 H1 L1
<b>Mitigation included in Plan: See Chapters 1,8 &amp; 9:</b> The planning of any road project is subject to environmental assessment to ensure no adverse effects on the environment. Mitigation measures are also included in Chapters 1 and 8 as development management standards in relation to natural and cultural heritage to ensure that no development will have a negative effect on natural/cultural heritage or landscape. Development management standards are also included in Chapter 9 in relation to air and noise pollution.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To reserve the proposed line of the western bypass for the city from the Castlecomer Road to the Callan Road free from development.	B1 P2 S3 W1 A1 H1 L1
<b>Mitigation included in Plan: See Chapters 1 &amp; 8:</b> No detailed design work has been carried out for this project to date. The Plan is merely reserving the line free from development. The implementation of any such project will require environmental assessment and Chapters 1 & 8 contain mitigation measures in relation to the protection of natural and cultural heritage.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
To seek an upgrade of the R700 between New Ross and Kilkenny to National Secondary status and to provide a relief road for Thomastown.	B1 S2 S3 W1 H1
<b>Mitigation:</b> The provision of a relief road for Thomastown was subject to a Part 8 process in 2007, and as part of this, a <i>Route Selection and Environmental Report</i> was compiled by Clifton Scannell Emerson Associates Consulting Engineers. This Report included mitigation measures to offset any adverse environmental effects, which will be incorporated into the scheme.	



## 8 Development 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 the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action. The Manager's Report on the implementation of the Development Plan, which must be carried out within two years of the making of the Plan, will include detail on the monitoring of the indicators.

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 6. While considerable environmental data is directly available to the Council such as water quality, and information on the RPS etc, other sources of information may need to be accessed to provide a comprehensive view of the impact of the Plan. 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, a variation may be considered during the lifetime of the Plan.

<b>Table 8.1 Monitoring proposals for environmental categories</b>				
<b>Environmental Category</b>	<b>Targets</b>	<b>Selected indicators</b>	<b>Data Sources</b>	<b>Monitoring frequency</b>
<b>Biodiversity -Flora and Fauna</b>	No loss of important and/or designated habitats	Number of sites.	Kilkenny County Council/National Parks and Wildlife Service/Fisheries Board (depending on available information from relevant statutory authorities).	At monitoring evaluation
	No deterioration in the quality of protected areas	Overall conservation status of habitats in Co. Kilkenny	NPWS, Report on Overall Conservation Status of Habitats in Ireland listed under the Habitats Directive.	Every 6 years
	No loss of protected species	Overall conservation status of species in Co. Kilkenny, distribution of protected species in Co. Kilkenny	NPWS, Report on Overall Conservation Status of Habitats in Ireland listed under the Habitats Directive. National Biodiversity Data Centre	Every 6 years
	All actions contained within the Biodiversity Plan to be achieved during the lifetime of the County Development Plan.	Number of actions achieved.	Heritage Officer	At monitoring evaluation
	No spread of invasive species within the County	Numbers of new cases identified over 2013 levels	National Biodiversity Data Centre	At monitoring evaluation
<b>Population and Human health</b>	No further loss of population within Kilkenny Borough boundary and Castlecomer; total population within Kilkenny Borough boundary and Castlecomer not to decrease on 2011 levels.	Total population within Kilkenny Borough boundary and Castlecomer.	Census	Next Census
<b>Soil</b>	No significant increase in number of landslides	Total number of landslides	National Landslide Database	At monitoring evaluation

	No significant reduction in peatland; total area not to reduce by 20% over 2013 level.	Total area of peatland	Corine mapping resurvey	Unknown
<b>Water</b>	No decline in river water quality; no increase in percentage of sample stations in seriously polluted rivers.	Percentage of sample stations in seriously polluted rivers.	EPA Reports on River water quality	At monitoring evaluation
	No decline in estuarine water quality; no decline in status of estuarine waters from current status (good or moderate)	Status of estuarine waters	EPA	At monitoring evaluation
	No decline in surface water quality; no decline in status of surface waters from current status	Status of surface water	EPA	At monitoring evaluation
	No decline in groundwater quality; no decline in status of groundwater from current status	Status of groundwater	EPA	At monitoring evaluation
	No reduction in processing of waste water and treated effluent quality; no increase in number of waste water treatment plants that fail recommended EPA limits.	Number of waste water treatment plants that fail recommended EPA limits.	EPA	At monitoring evaluation
	Improvement in treatment of waste water; Reduction in number of waste water treatment plants with no secondary treatment, which was 6 in 2013.	Number of waste water treatment plants with no secondary treatment	Kilkenny County Council Water Services/ Irish Water	At monitoring evaluation
	Improvement in quality of drinking water; Reduction in numbers of public water supplies on the EPA's Remedial Action List, from 2 in 2012.	Numbers of public water supplies on the EPA's Remedial Action List.	EPA	At monitoring evaluation
	Improvement of application of ground water protection scheme.	Number of source protection areas that have been mapped.	GSI & Kilkenny County Council Environment	At monitoring evaluation

<b>Air</b>	Increase in proportion of people using sustainable transport	Proportion of people walking, cycling or using public transport to get to school or work.	Census	Next Census
	No decrease in air quality; no exceedances in Nitrogen Dioxide and Ozone.	Exceedances in Nitrogen Dioxide and Ozone.	EPA	At monitoring evaluation
<b>Climatic factors</b>	Improved Climate Change Adaptation measures.	Completion of Climate Change Adaptation Strategy.	Kilkenny County Council.	At monitoring evaluation
<b>Material Assets</b>	Increase in afforestation of appropriate woodlands; increase in proportion of mixed and deciduous forest cover over coniferous forestry, as compared to 2006.	Proportion of mixed and deciduous forest cover.	Corine mapping resurvey	Unknown
<b>Cultural Heritage (architectural and archaeological)</b>	Addition in number of structures listed on the RPS; increase in number of protected structures over that listed in 2008 Plan.	Number of protected structures.	Kilkenny County Council	At monitoring evaluation
<b>Landscape</b>	No decrease in sensitive land cover; proportion of county comprising sensitive land cover should not decrease from 2006 level of 10%.	Proportion of county comprising sensitive land cover.	Corine mapping resurvey	Unknown