

# ENVIRONMENTAL REPORT

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ON THE

## STRATEGIC ENVIRONMENTAL ASSESSMENT

OF THE

### KILKENNY COUNTY DEVELOPMENT PLAN 2008-2014



**For: Kilkenny County Council**

County Hall  
John Street  
Kilkenny



**By: CAAS (Environmental Services)**

4<sup>th</sup> Floor, 7 Red Cow Lane  
Smithfield  
Dublin 7



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# Section 1 SEA Introduction and Background

## 1.1 Introduction and Terms of Reference

This is the Environmental report of the Kilkenny County Development Plan (CDP) Strategic Environmental Assessment (SEA). The purpose of the report is to provide a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in County Kilkenny.

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 in the County. This report should be read in conjunction with the County Development Plan.

## 1.2 SEA Definition

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. *Environmental Impact Assessment*, or EIA, is generally used for describing the process of environmental assessment which is limited to individual projects such as waste incinerators, housing developments or roads while *Strategic Environmental Assessment*, or SEA, is the term which has been given to the environmental assessment of plans, and other strategic actions, which help determine what kind of individual projects take place.

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 insure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic and social considerations.

What kind of development occurs in County Kilkenny and where it occurs will be significantly determined by the implementation of a County Development Plan. By anticipating the effects and avoiding areas in which growth cannot be sustainably accommodated and by directing development towards more compatible and robust receiving environments real

improvements in environmental management and planning can occur in County Kilkenny - planning applications are more likely to be granted permission and the scope of any EIAs which may be required are likely to be reduced.

## 1.3 Legislative Context

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, referred to hereafter as the SEA Directive, introduced the requirement that SEA be carried out on plans and programmes which are prepared for a number of sectors, including land use planning. The SEA Directive was transposed into Irish Law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 [Statutory Instrument Number (SI No.) 435 of 2004], and, the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004). Both sets of regulations became operational on 21 July 2004.

## 1.4 Implications for Kilkenny County Council and the Elected Members

As a result of the above legislation, certain plans and programmes which are prepared by Kilkenny County Council- including County Development Plans - are required to undergo SEA. The findings of the SEA are expressed in an Environmental Report which is submitted to the Elected Members alongside the CDP. The Elected Members must take account of the Environmental Report before the adoption of the plan.

When the plan is adopted a statement must be made public, summarising, inter alia: how environmental considerations have been integrated into the plan, and; the reasons for choosing the plan as adopted over other alternatives detailed in the Environmental Report.

## Section 2 SEA Methodology

### 2.1 Introduction

This section details how the SEA for the CDP has been undertaken alongside the preparation of the Plan. The SEA process up until the submission of this report has been carried out from October 2006 until August 2008.

Consultations were made with: the EPA; the Department of the Environment, Heritage and Local Government (DEHLG); the Department of Communications, the Marine and Natural Resources, and; a number of departments at Kilkenny County Council. The material gathered by Kilkenny County Council during the preliminary consultation phase of the CDP review process, as summarised in the County Manager's Report, was also utilised.

The findings of the SEA were communicated to the plan making team at Kilkenny County Council on an ongoing basis from the outset in order to allow for their integration into the CDP thus minimising the potential for significant negative environmental effects arising from implementation of the plan.

### 2.2 Screening

Screening, or evaluation of the need for SEA to be carried out, was not required for the CDP as SEA is mandatory for the preparation or review of County Development Plans under the SEA Regulations.

### 2.3 Scoping

In consultation with the relevant authorities, the scope of environmental issues to be dealt with by the SEA together with the level of detail to be addressed was broadly decided after preliminary data collection. Scoping of the SEA was continuous with certain issues being selected for further examination after certain data was obtained. Scoping helped the SEA to become focused upon the important issues, such as those relating to existing environmental problems, not wasting resources on unnecessary data collection.

The most important issues in County Kilkenny were identified as being:

- Water quality;
- Waste water treatment infrastructure;
- Landscape;
- Ecology, and;
- Cultural heritage.

### 2.4 Environmental Baseline Data and Other Strategic Actions

The SEA process is led by the environmental baseline, the current state of the environment, to facilitate the identification, evaluation and subsequent monitoring of the effects of the plan and the alternatives. Data was collected to describe the environmental baseline and its likely evolution without implementation of the plan or programme. Information is provided on existing environmental problems which are relevant to the CDP, thus, helping to ensure that the CDP does not make any existing environmental problems in County Kilkenny worse.

The SEA Directive requires that information on the baseline environment be focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected and the likely evolution of the current environment in the absence of the strategic action. Any information that does not focus upon this is surplus to requirements; therefore, the CDP SEA focuses on the significant issues, disregarding the less significant ones. Also, the SEA Directive aims to avoid duplication of the assessment whereby a strategic action forms part of a hierarchy- if certain matters are more appropriately assessed at different levels of the hierarchy in which the CDP is positioned, or, if certain matters have already been assessed by a different level of the hierarchy then additional assessment is not needed.

In order to describe the baseline - the current state of the environment - in County Kilkenny, data was collated from currently available, relevant environmental sources.

## 2.5 Alternatives

The SEA Directive requires that reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated for their likely significant effects on the environment.

Taking into account the objectives and the geographical scope of the CDP, alternatives were formulated through consultation with the plan-making team at Kilkenny County Council and a number of departments at the Council.

## 2.6 The SEA Environmental Report

In this Environmental Report, which accompanies the CDP, the likely environmental effects of the CDP and the alternatives are predicted and their significance evaluated with regard to the environmental baseline. The Environmental Report has provided the decision-makers, the Elected Members of Kilkenny County Council, who decided what type of plan to adopt, with a clear understanding of the likely environmental consequences of decisions regarding the future accommodation of growth in the County. Mitigation measures to prevent or reduce significant adverse effects posed by the CDP, or to maximise any benefits arising, which were recommended for inclusion in the Plan are identified under Section 9. The alternatives are also presented in this report, as are measures concerning monitoring.

The Environmental Report was required to be altered as the Elected Members adopted a CDP which includes policies and objectives which were not originally included in the Draft CDP.

## 2.7 The SEA Statement

As required by the SEA Directive and the SEA Regulations a document referred to as an SEA Statement (DEHLG, 2004)<sup>1</sup> has been produced and made available to the public. The SEA Statement includes information on: how environmental considerations have been

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<sup>1</sup> Department of the Environment, Heritage and Local Government (2004) *Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities* Dublin: Government of Ireland.

integrated into the CDP - highlighting the main changes to the Plan which resulted from the SEA process; how the Environmental Report and consultations have been taken into account - summarising the key issues raised in consultations and in the Environmental Report indicating what action, if any, was taken in response and; the reasons for choosing the CDP in the light of the other alternatives, identifying the other alternatives considered, commenting on their potential effects and explaining why the CDP was selected.

As required, information is included on how environmental considerations have been integrated throughout the process as is a description on how the preferred alternative was chosen.

## 2.8 Legislative Conformance

This report complies with the provisions of the SEA Regulations and is written in accordance with Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004).

Table 2.1 (overleaf) is a reproduction of the checklist of information to be contained in the Environmental Report (DEHLG, 2004)<sup>2</sup> and includes the relevant sections of this report which deal with these requirements.

## 2.9 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. This difficulty was overcome by the provision of sufficient time resources and through the use of Geographical Information Systems.

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<sup>2</sup> Ibid.



<b>Information Required to be included in the Environmental Report</b>	<b>Corresponding Section of this Report</b>
(A) Outline of the contents and main objectives of the plan, and of its relationship with other relevant plans and programmes	Sections 5, 6 and 7
(B) Description of relevant aspects of the current state of the environment and the evolution of that environment without implementation of the plan	Section 3
(C) Description of the environmental characteristics of areas likely to be significantly affected	Sections 3, 4, 7 and 8
(D) Identification of any existing environmental problems which are relevant to the plan, particularly those relating to European protected sites	Section 3
(E) List environmental protection objectives, established at international, EU or national level, which are relevant to the plan and describe how those objectives and any environmental considerations have been taken into account when preparing the plan	Sections 4, 5 and 7
(F) Describe the likely significant effects on the environment	Section 7 and 8
(G) Describe any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse environmental effects of implementing the plan	Section 9
(H) Give an outline of the reasons for selecting the alternatives considered, and a description of how the assessment was undertaken (including any difficulties)	Sections 2, 7 and 8
(I) A description of proposed monitoring measures	Section 10
(J) A non-technical summary of the above information	Appendix II
(K) Interrelationships between each Environmental topic	Addressed as it arises within each Section

**Table 2.1 Checklist of Information included in this Environmental Report**

## Section 3 County Kilkenny's Baseline Environment

### 3.1 Introduction

County Kilkenny's environmental baseline is described in this section. This baseline together with the Strategic Environmental Objectives, which are outlined in Section 4, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the CDP and in order to determine the required monitoring measures. The environmental baseline is described in line with the legislative requirements, encompassing the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape and the interrelationship between these components. A description is also included of the likely effects upon each environmental component under a *do-nothing scenario* i.e. the likely evolution of the environment without the implementation of the CDP.

### 3.2 Biodiversity and Flora and Fauna

#### 3.2.1 Special Areas of Conservation

There are 8 sites in County Kilkenny designated and protected under the under the Habitats Directive 1992 (92/43/EEC) as Special Areas of Conservation (SACs) due to their conservation value for habitats and species of importance in the European Union. These sites are listed under Table 3.1 and mapped on Figure 3.1.

SACs in Kilkenny cover, inter alia, the riverbanks of the Nore River, crossing the County in a north-south direction, as well as the western banks of the River Barrow and the eastern banks of the River Suir.

SACs, together with Special Protection Areas, of which there are none in County Kilkenny, form Natura 2000 - a network of protected areas throughout the EU established under the Habitats Directive.

Site Synopses<sup>3</sup> for the SACs are included in Appendix I to this report.

#### 3.2.2 Natural Heritage Areas

There is one Natural Heritage Area in County Kilkenny designated and protected under the Wildlife (Amendment) Act 2000. There are an additional 37 sites for which Natural Heritage Area designations are proposed. Natural Heritage Areas are designated due to their national conservation value for ecological and/or geological/geomorphological heritage.

Designated and proposed NHAs (pNHAs) are listed under Table 3.1 and Table 3.2 and mapped on Figure 3.1. Many pNHAs are located in the corridors of the Rivers Nore, Barrow and Suir and the remainder are dispersed throughout the County including a number of woodlands, bogs and fens.

Table 3.3 shows that a number of the pNHAs are designated as SACs. It is noted that where SAC and NHA boundaries overlap the SAC designation effectively takes precedence.

Site Synopses<sup>4</sup> for designated and proposed NHAs are included in Appendix I.

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<sup>3</sup> National Parks and Wildlife (various) *Site Synopses for Special Areas of Conservation* Dublin: Government of Ireland

<sup>4</sup> National Parks and Wildlife (various) *Site Synopses for Natural Heritage Areas and proposed Natural Heritage Areas* Dublin: Government of Ireland

Site Name	Site Code	Site Area (hectares)
Hugginstown Fen	000404	63.34
The Loughans	000407	40.74
Cullahill Mountain	000831	54.61
Spa Hill and Clomantagh Hill	000849	147.24
Galmoy Fen	001858	25.05
Lower River Suir	002137	10456.07
River Barrow & River Nore	002162	19086.08
Thomastown Quarry	002252	4.23

**Table 3.1 Special Areas of Conservation**

Site Name	Site Code
Coan Bogs	002382

**Table 3.2 Natural Heritage Areas**

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

**Table 3.3 Proposed Natural Heritage Areas**

(\* = also designated SAC)

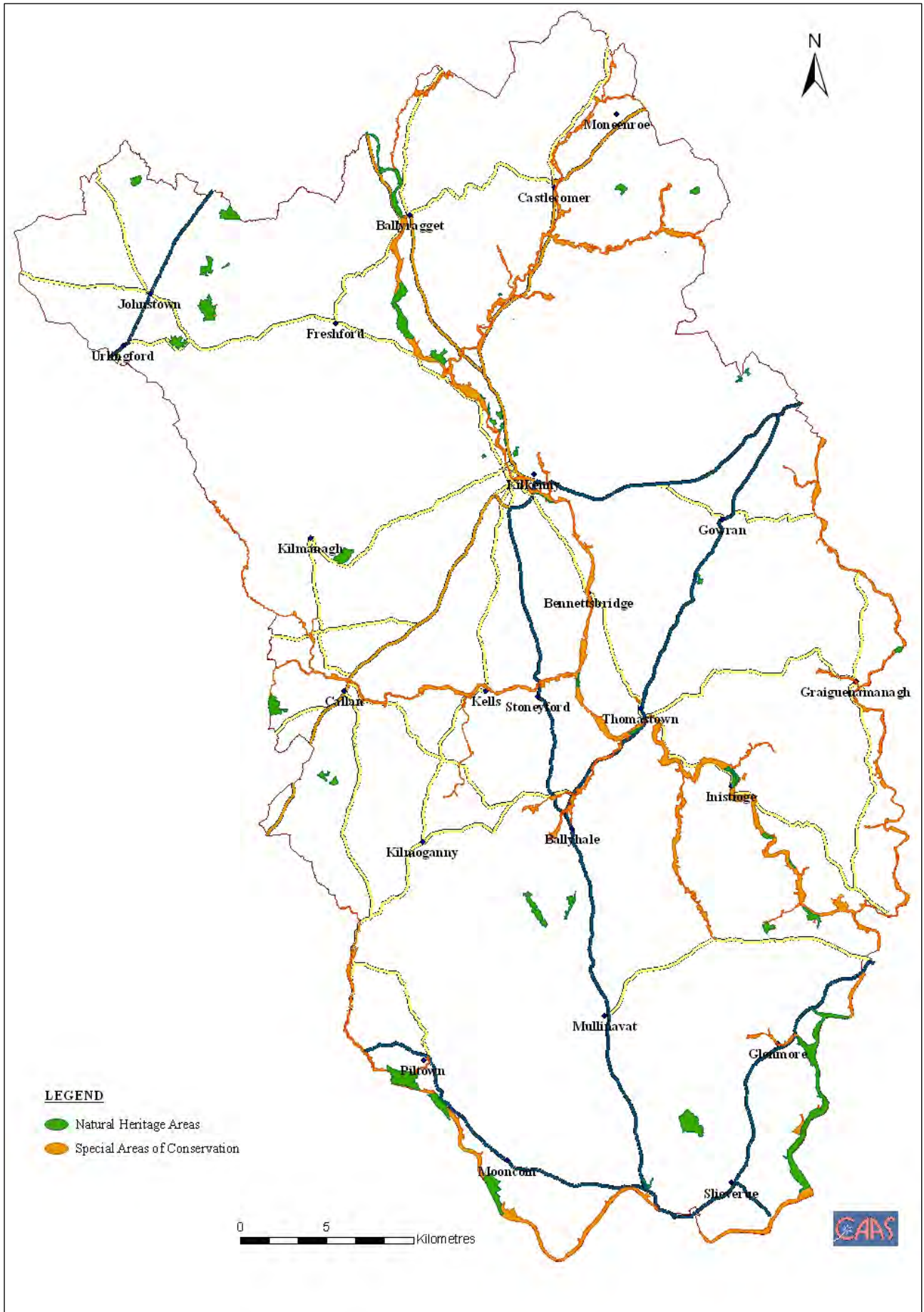


Figure 3.1 Ecological Designations

### 3.2.3 Nature Reserves

Nature Reserves are state-owned land, inland waters or foreshore areas forming the habitat of a species or community of flora and fauna of scientific interest or forming part of an ecosystem of scientific interest, which would benefit from protection measures, established under the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000. Nature Reserves are protected under Ministerial order. There are four of these reserves in County Kilkenny the descriptions of which are given below (NPWS, 2007)<sup>5</sup>.

#### 3.2.3.1 Fiddown Island (Nature Reserve No. 51; 62.6 ha)

Fiddown Island Nature Reserve is a long narrow island of marsh/woodland on the River Suir. It is covered in willow scrub and bordered by reed swamps and is the only known site of its type in Ireland. The Nature Reserve was established on 21 September, 1988 and is state owned.

This Nature Reserve is also designated under the Lower River Suir (Site Code 002137) site designation.

#### 3.2.3.2 Ballykeefe 6 km north of Callan town (Nature Reserve No. 52; 55.4 ha)

Nature Reserves No.'s. 52, 53 and 54 are good examples of young quasi-natural elm/ash/oak woods on fertile soil and constitute some of the largest woods of their kind left in Ireland.

Nature Reserves No.'s. 52, 53 and 54 were all established on 18 December, 1980 and are state owned.

A NHA designation is also proposed for Ballykeefe Nature Reserve (Site Code 000400).

#### 3.2.3.3 Garryrickin 5km S.S.W. of Callan (Nature Reserve No. 53; 27.9 ha)

The description under Section 3.2.3.2 applies to this Nature Reserve.

A NHA designation is also proposed for Garryrickin Nature Reserve (Site Code 000403).

#### 3.2.3.4 Kyleadohir 5 km W.S.W. of Callan (Nature Reserve No. 54; 58.7 ha)

The description under Section 3.2.3.2 applies to this Nature Reserve.

A NHA designation is also proposed for Kyleadohir Nature Reserve (Site Code 000405).

### 3.2.4 Areas of Scientific Interest

Areas of scientific interest occurring in the County include Ballyfoile, Ballylogue Wood, Brownsbarn Bridge, Castlecomer Estate Woodland, Tintine and Ullard.

Areas of Scientific Interest were first identified by An Foras Forbartha in their 1970 National Heritage Inventory. In more recent years the NHA designations have replaced this old system of Areas of Scientific Interest which provided no protection under legislation.

Although these areas have no legislative protection they are recognised and protected under the current County Development Plan.

### 3.2.5 Non- Designated Biodiversity and Flora and Fauna

Most habitats in the County Kilkenny have been impacted upon to varying degrees by human beings over time. The clearing of vegetation centuries ago from most of the County resulted in the replacement of natural habitats with semi-natural, low biodiversity habitats. This replacement was accentuated throughout the 20<sup>th</sup> century with the intensification of agriculture on the County's fertile and well drained soils.

The vegetation of County Kilkenny is characterised by improved agricultural grasslands - large fields of well maintained grassland bordered by hedgerows. Patches of wheat and crop fields intertwine with well-defined grass and pasturelands forming a mosaic pattern on the lowland areas. Dairy farming is found in several areas throughout the region while tillage is concentrated around Kilkenny City and on the fertile central plain of the River Nore.

Trees are found in overgrown hedgerows around smaller fields in some areas. Small areas

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<sup>5</sup> National Parks and Wildlife Service (2007) *Statutory Nature Reserves: County Kilkenny* Dublin: Government of Ireland

of deciduous trees can be found along the river valleys and a number of deciduous woodlands throughout the County are designated as Special Areas of Conservation (SACs) or have Natural Heritage Area (NHA) designations proposed. Large conifer plantations consisting largely of non native species, which support lower biodiversity than native deciduous woodlands, occur on hilltops and foothills. Trees are also found in estates/demesnes, old graveyards and in some towns and villages.

The effects of the recent decoupling of agricultural payments and production are beginning to be seen in less productive, marginal areas in the County such as the foothills where agriculture is beginning to decline with the maintenance of lands decreasing and resulting in the covering of lands with scrub and trees - either due to the development of plantations or through natural colonisation processes. This development is resulting in the development of new woodland habitats, supporting varying levels of biodiversity.

In the most productive lands, agriculture is likely to continue to be intensively practiced and the corresponding low biodiversity value of these lands is likely to remain.

Figure 3.2 shows the spatial configuration of land uses in County Kilkenny. The majority of the County is covered with pastures (light green) and arable land (pink). There are areas of forestry (darker greens), scrub (lime green), bogs and moors and heathland (purple) dispersed throughout the County.

### **3.2.6 Aquatic Biodiversity and Flora and Fauna**

There are three major rivers in the County – the Nore flows through central parts of the County while the Barrow and Suir Rivers form much of the County's southern and eastern borders. These rivers are important parts of the County's ecological networks, functioning as corridors traversing from the County's inland uplands down to the lowlands and across the County to the coast at Waterford. They are of particular conservation interest due to the presence of a number of animals that are protected under Annex II of the Habitats Directive. These are freshwater crayfish, salmon, thwaite shad, three species of lamprey and the freshwater pearl

mussel. The Barrow and Nore are the only sites in the world where the hardwater form of this mussel is found. The extensive tidal reaches of these two rivers further adds to the richness of these habitats.

In addition, the main channel of the River Nore is designated a Salmonid Water under the European Communities (Quality of Salmonid Waters) Regulations 1998 (SI No. 293 of 1988) which implements the European Freshwater Fish Directive 1978 (78/659/EEC). Designated Salmonid Waters are capable of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*). In reality there are many more salmonid waters throughout the County supporting varying amounts of salmonid species in varying quantities which have not been designated under the legislation. Salmonid species occur in each of the County's three main rivers - the Nore, the Suir and the Barrow - as well as in many of their tributaries.

The County's rivers also support significant populations of coarse fish which together with the salmonid species, help make them into a considerable angling resource.

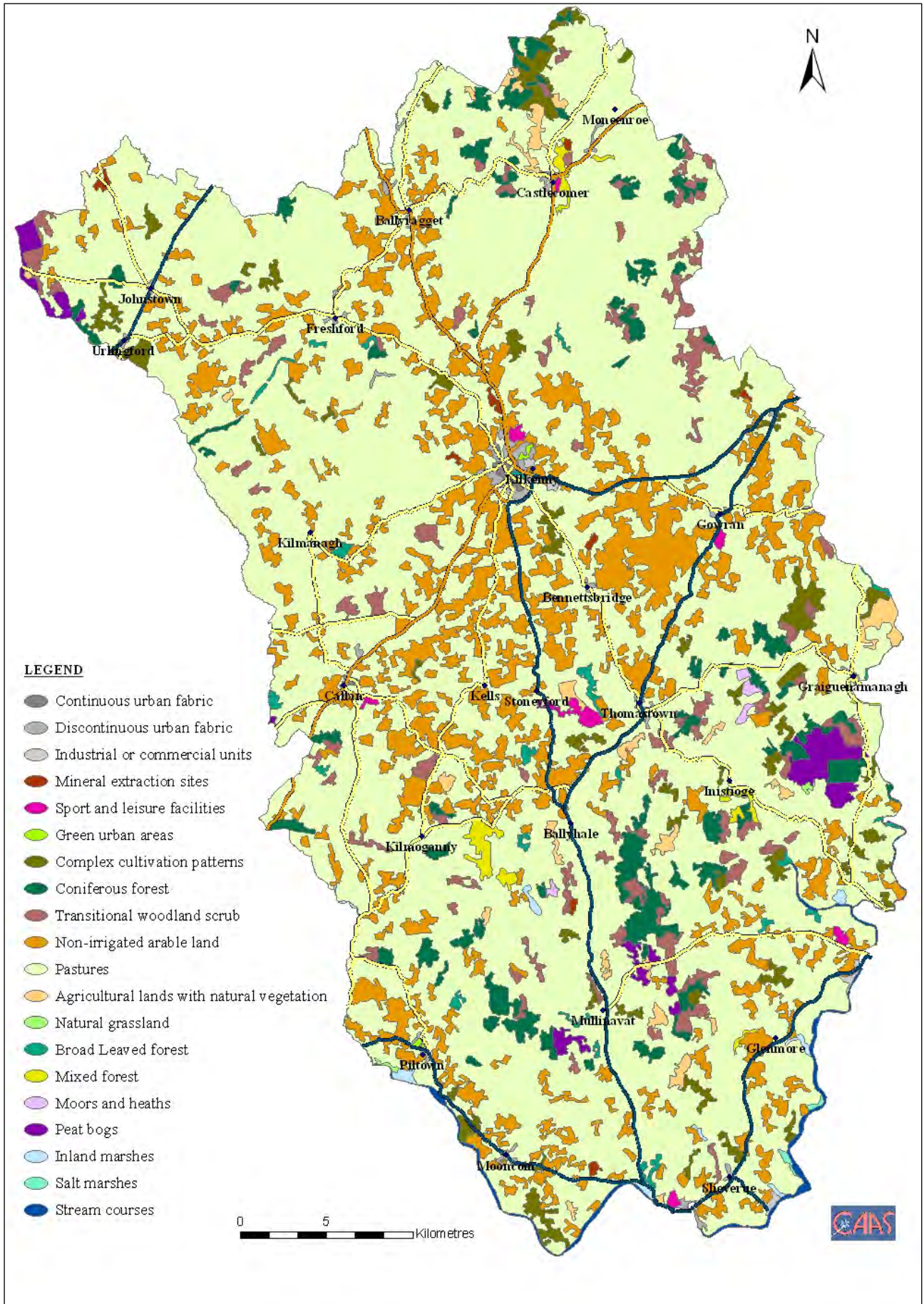
Most of the channels and corridors of the Nore, Suir and Barrow rivers - together with some of their tributaries - are designated as SACs and/or pNHAs. These riverine sites comprise the bulk of County Kilkenny's designated ecological areas.

### **3.2.7 Ecological Networks**

Article 10 of the Habitats Directive also recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. The Directive requires that ecological connectivity and areas of ecological value outside the network of designated ecological sites are maintained and it recognises the need for the management of these areas through land use planning and development policies.

Ecological networks are important in connecting areas of local biodiversity with each other and with nearby designated sites so as to prevent islands of habitat from being isolated entities. They are composed of linear features, such as treelines, hedgerows and rivers/streams, which provide corridors or stepping stones for wildlife





**Figure 3.2 Land Use [CORINE]**

species moving within their normal range. They are particularly important for mammals, especially for bats and small birds.

The County's various rivers and their banks and the wealth of hedgerows all play important parts in the County's ecological networks facilitating linkages both between and within the designated ecological sites and the non-designated surrounding countryside.

### 3.2.8 Existing Problems

Generally development in County Kilkenny is not significantly impacting upon designated ecological sites however localised adverse impacts on designated sites may be occurring as a result of individual developments.

With regard to terrestrial flora and fauna, all greenfield development causes an impact - the replacement of natural and semi natural habitats with artificial surfaces results in loss of flora and fauna and therefore adversely impacts upon this environmental component. The significance of the impact of greenfield development depends on whether individual greenfield developments result in the loss of habitats or species of importance together with the cumulative amount of habitats and species lost and fragmented as a result of all greenfield developments. It is noted that development of brownfield sites and re-development can also have impacts on terrestrial flora and fauna.

Ecological networks have been adversely impacted upon by the development of infrastructure such as roads which result in the habitat fragmentation as well as by the development of housing which results in the removal of hedgerows or housing which occurs along the edges of inland surface waters.

Aquatic flora and fauna is vulnerable to all forms of pollution such as soil erosion, silage and slurry from agriculture, industrial and municipal effluents. As identified under Section 3.5, a high proportion of the water catchment areas in the County are 'at risk' with regard to meeting legislative water quality objectives under the Water Framework Directive.

### 3.2.9 Evolution of Biodiversity and Flora and Fauna in the absence of a CDP

In the absence of a CDP, development would have no guidance as to where to be directed and planning applications would be assessed on an individual basis with flora and fauna, habitats and ecological connectivity protected under a number of strategic actions relating to biodiversity and flora and fauna protection.

Any future development along the edges of designated ecological sites would be likely to result in a reduction in habitats and would therefore be likely to reduce ecological connectivity on the edges of these sites.

Development along or adjacent to the banks of rivers could result in a reduction in ecological connectivity within and between these and other habitats.

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

Agriculture in less productive, marginal areas in the County is likely to continue to decline resulting in a reduction in the maintenance of these lands and the covering of these lands with scrub and trees - either due to the development of plantations or through natural colonisation processes. This development is resulting in the development of new woodland habitats, supporting varying levels of biodiversity.

## 3.3 Population and Human Health

### 3.3.1 Population

#### 3.3.1.1 Current Population Change Trends

Preliminary analysis of the 2006 Census Data indicates that in the period 2002 to 2006, County Kilkenny experienced a significant population increase of 8.8% in four years from a population of 80,339 in 2002 to a population of 87,394 in 2006 (see Table 3.4 and Figures 3.3



and 3.4). The average annual rate of population increase in this four-year period was 2.2%, which was higher than the rate of increase

experienced during the three previous inter-census periods (see Table 3.4).

Year	1986	1991	1996	2002	2006
Persons	73,186	73,635	75,336	80,339	87,394
% Change in population since previous	-	.6	2.3	6.6	8.8

**Table 3.4 Population Change over recent Census periods**

### 3.3.1.2 Current Population Distribution

County Kilkenny's population structure is still very rural whereby Kilkenny City is the dominant urban centre. Other towns in the County are generally very much smaller than Kilkenny City.

The distribution of population throughout County Kilkenny's nine Districts is shown on Table 3.5. Over half of the County's population is located within three Districts - Kilkenny Rural Area (30.4%), Waterford No. 2 Rural Area (15.1%) and Thomastown Rural Area (14.6%). The largest increases in population within the period 2002-2006 have been experienced in the Waterford No. 2 Rural Area (15%), Carrick-on-Suir No. 3 Rural Area (12.3%), Kilkenny Rural Area (11.7%) and Callan Rural Area (11.3%).

Overdeveloped districts which have been preliminarily identified include Kilkenny City, Callan, Thomastown, Mooncoin and Slieveroe.

Almost all towns as well as 93 of the 111 rural Electoral Districts within the County have experienced growth in population between 2002 and 2006 experienced growth in population. The population of the County within aggregate town areas as defined by the census has increased from 30.6 % in 2002 to 35.3% in 2006. This is an indication that as the County population increases, a greater percentage of the resulting population are living within the urban areas of the county i.e. Kilkenny City, the Environs of Waterford City and to a lesser extent the towns of Thomastown, Castlecomer and Callan.

District	2002 Persons	2006 Persons	Change in population 2002-2006
Kilkenny Borough	8,591	8,625	0.4
Callan Rural Area	6,271	6,980	11.3
Carrick-on-Suir No.3 Rural Area	3,578	4,019	12.3
Castlecomer Rural Area	7,856	8,272	5.3
Ida Rural Area	2,493	2,653	6.4
Kilkenny Rural Area	23,767	26,548	11.7
Thomastown Rural Area	12,117	12,745	5.2
Urlingford Rural Area	4,211	4,377	3.9
Waterford No. 2 Rural Area	11,455	13,175	15
<b>Total Kilkenny County</b>	<b>80,339</b>	<b>87,394</b>	<b>8.8</b>

**Table 3.5 Population Change by Electoral District 2002 - 2006**

### 3.3.2 Human Health

Human health has the potential to be impacted upon by environmental vectors including water, soil and air. Hazards or nuisances to human health can arise as a result of exposure to these vectors and incompatible landuses. These factors are examined in appropriate detail under

the relevant environmental component headings.

### 3.3.3 Existing Problems

Any impacts upon the quality of drinking water sources (see Section 4) have the potential to impact upon human health.

The occurrence of growth in areas not identified as having environments which are compatible to such land uses can result in significant adverse impacts on the environment. As there is likely to be further increases in population over the coming years, there is a need to zone sufficient amounts of land in order to ensure that growth is directed towards the most compatible environments.

Demand management techniques that seek to restrict those who can reside in smaller towns and villages to persons from a local catchment areas or working locally have the potential to beneficially impact upon: reducing air pollution and greenhouse gas emissions; reducing the need to travel and; improving people's quality of life with regard to sustainable travel patterns.

### **3.3.4 Evolution of Population and Human Health in the Absence of a CDP**

In the absence of a CDP for Kilkenny there would be no framework for the provision of infrastructure to serve existing and future development. The lack of a framework would be likely to result in a lack of infrastructural provision which would have the potential to result in impacts on environmental vectors to which humans are exposed e.g. a lack of appropriate waste water treatment infrastructure could adversely impact upon drinking water quality and subsequently upon human health.

In the absence of a CDP there would also be no framework directing growth away from the most sensitive environments and this could result in significant adverse impacts.

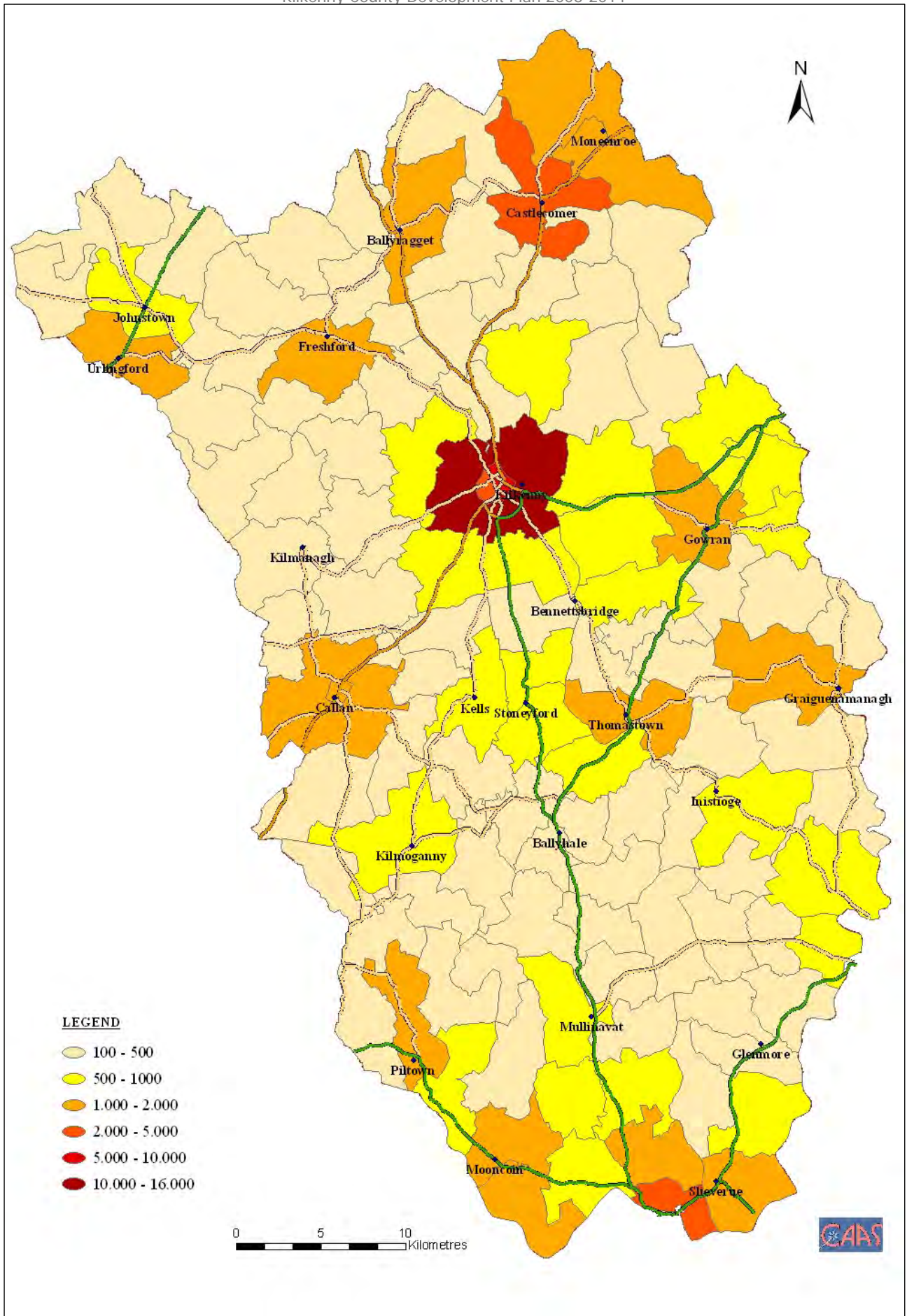


Figure 3.3 Census Figures 2006



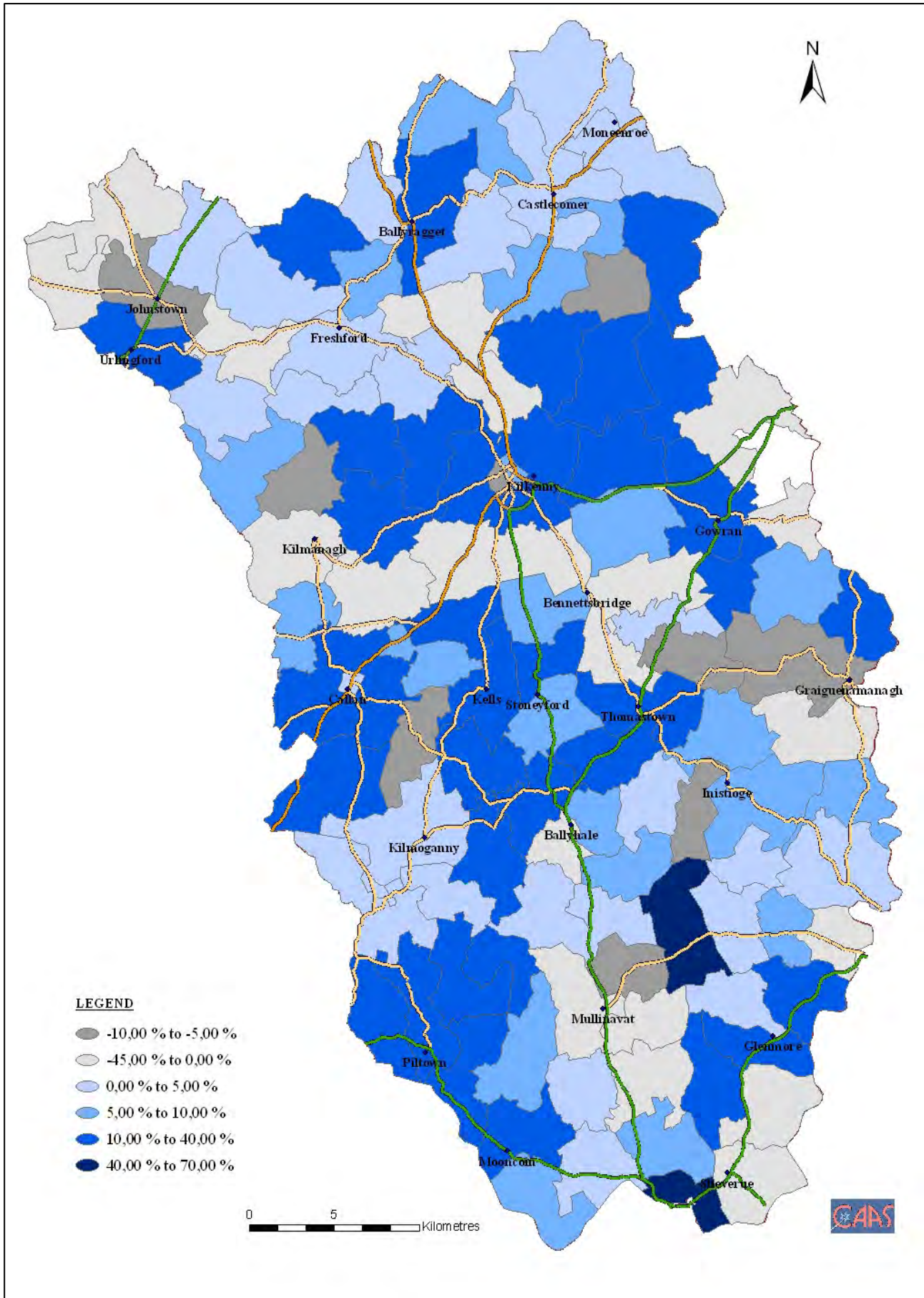


Figure 3.4 Population Change 2002 to 2006

## 3.4 Soil

### 3.4.1 Introduction

Soil is the top layer of the earth's crust. It is formed by mineral particles, organic matter, water, air and living organisms. Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance.

Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action. The parent material of soils in County Kilkenny consists of a mantle of glacial drift with a considerable variation in geological composition, physical constitution and thickness. The variation in geological composition is due mainly to the influence of the coal-bearing hills to the north of the County.

To date, there is no legislation which is specific to the protection of soil resources. However, there is currently an EU Thematic Strategy on the protection of soil which includes a proposal for a Soil Framework Directive which proposes common principles for protecting soils across the EU. Soil is protected under the various ecological designations identified in Section 3.2.

### 3.4.2 Soil Types

Soils in County Kilkenny<sup>6</sup> (An Foras Talúntais, 1977) (Figure 3.5) are generally classified as fertile, due to the existing rivers and streams that run through the County providing fluvial soils and consequently, lush, rich, and fertile valleys with prosperous pasture and farming lands. Soils survey investigations show that the large portion of the County possesses a very high proportion of deep fertile soils.

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<sup>6</sup> An Foras Talúntais (1977) *National Soil Survey of Ireland* Wexford: An Foras Talúntais

Grey Brown Podzolic soils are dominant with medium-heavy texture and great depth of profile. They derive from calcareous glacial drift deposits and provide some of the best soils in Ireland. Furthermore they are the most important soils in the region and occur extensively in the centre and north of the County. They are deep, well drained soils which are derived from calcareous drift composed mainly of limestone with some coal shales and sandstone. These grey brown podzolic soils are fertile and all-purpose soils, excellent for grassland and also for the production of a wide range of vegetable crops.

To the north east of the County, heavy textured wet gleys are predominant (resulting from shales, grits and flagstones of glacial drift). Gleys are poorly drained due to a combination of heavy texture (influence of shales and grits), gently undulating topography and/or high ground-water level. As a result, the land use range of these soils is limited and they are best suited for grassland production.

The south of the County is covered by a mixture of brown podzolics and acid brown earths. The acid brown earths are associated with Regosols - lighter, shallower soils which are found on the shores of the Rivers Nore, Barrow and Suir, and are derived from alluvial deposits, i.e. coarse textured gravels and sands. These soils are free-draining soils subject to flooding. They are best suited for grass production but also support good crops of cereals.

In summary, poorly drained gleys occur on lower grounds and on rolling topography to the west (where the parent material is rather dense and impermeable), while the freely-drained, fertile soils are found on more favourable slopes and the central lowlands. Alluvial soils occur in the flat areas adjacent to streams and rivers.

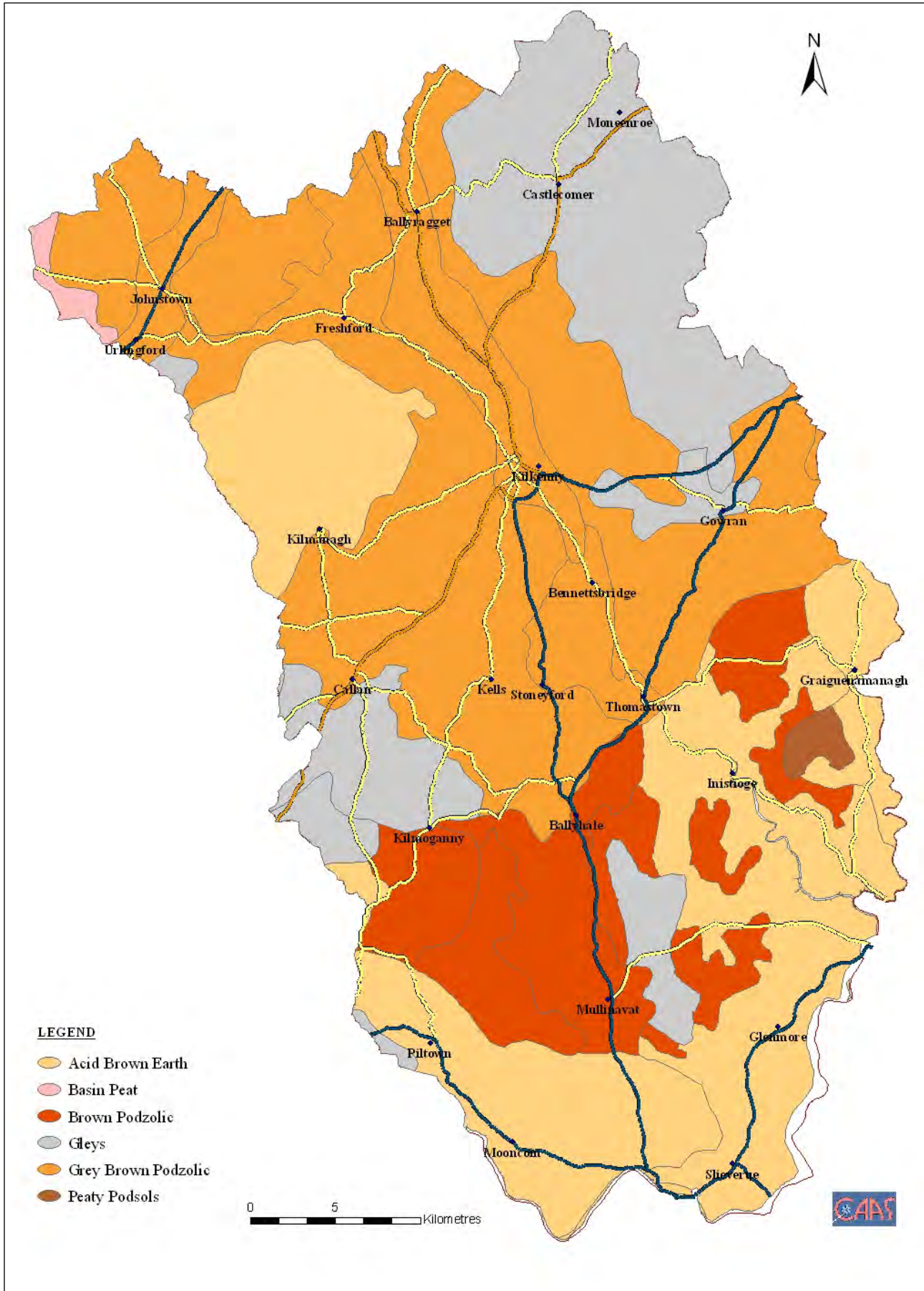


Figure 3.5 Soil Map



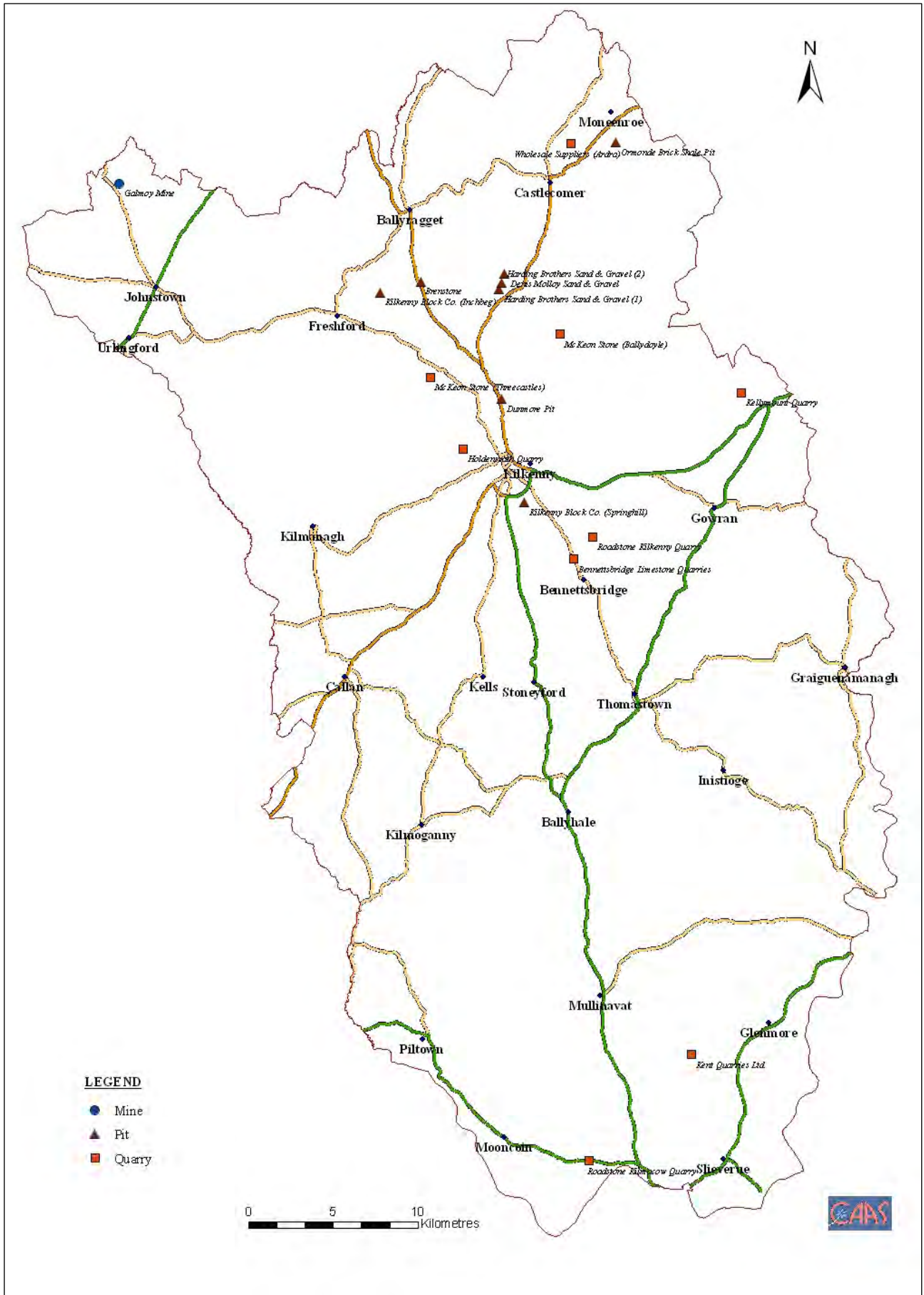


Figure 3.6 Registered Quarries, Pits and Mines (GSI, 2001)

### 3.4.3 Bedrock Geology

The basic rock formation of County Kilkenny consists almost completely of limestone. The bedrock geology across County Kilkenny consists of sedimentary rocks - including sandstones, slate, and conglomerates - of various types and ages (glacial and recent sediments).

### 3.4.4 Quaternary Geology

Quaternary geology comprises the study of soils which have been deposited or formed during the last 2 million years. The quaternary geology underlying the soils in County Kilkenny supports a range of quarrying activities including mining and quarrying.

Stratified gravels - derived from various limestone, sandstone and shale types and ages - as well as alluvium are largely found along the valleys of the Rivers Nore, Barrow and Suir. Diamictons derived from limestone, gravel and diverse sedimentary rocks, form a layer over the solid geology of the County.

The most recent Geological Survey of Ireland Directory of Active Quarries, Pits and Mines (GSI, 2001)<sup>7</sup> identifies a number of extractive industries which are operating in the County (see Figure 3.6). It is noted that since the introduction of requirements under Section 261 of the Planning and Development Act 2000 the number of registered quarries is likely to have increased. However, the 2001 figures provide a broad pattern as to where activity is occurring and as to what materials are being excavated. GSI identify nine active pits - all of which are located in the northern half of the County - , nine active quarries - five of which are located in the north of the County and two of which are located in the south of the County - and one active mine - located in the north west of the County. Material originating from Limestone is the most common material being excavated with various sizes and types of sand, gravel and aggregates being excavated.

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<sup>7</sup> Geological Survey of Ireland (2001) *Directory of Active Mines, Pits and Quarries in Ireland* Dublin: Government of Ireland

### 3.4.5 Sites of Geological Interest

A joint study between the Heritage Office of Kilkenny county Council and the Geological Survey of Ireland to identify geological and geomorphological sites of heritage interest throughout the city and county is currently underway. The study is due to be completed by December 2007 and it is recommended that the relevant findings are integrated into County forward planning policy.

### 3.4.6 Existing Problems

Greenfield development involves the building upon and thereby sealing off of non-renewable subsoil as well as topsoil thus representing a significant environmental problem.

Soil can be polluted and contaminated by development which is not serviced by appropriate waste water infrastructure and by agricultural activities.

Soil erosion due mainly to surface erosion resulting from construction works and agricultural / forestry operations has major potential to impact on water quality and fishery resources. In addition to water quality and fishery impacts, these can impact on infrastructure and can have health and safety implications.

The development of extractive industry at certain locations in County Kilkenny has led to the depletion of both subsoils, the material which has been quarried, and topsoil, which has been removed in order to obtain the subsoil.

Generally, development in County Kilkenny is not significantly impacting Blanket Bog sites which are found within a number of designated ecological sites (see Appendix I). Blanket bog outside these sites may be experiencing localised losses as a result of individual developments. Any development on peat bogs has the potential adverse consequences on the integrity of the bog environment; for example infrastructural development - such as roads or wind farms - has the potential to cause landslides while afforestation has the potential to result in losses to biodiversity and flora and fauna.



### **3.4.7 Evolution of Soil in the Absence of a CDP**

The currently proposed Soil Directive suggests encouraging the rehabilitation of brownfield sites, thus reducing the depletion of greenfield sites. However, in the absence of a CDP there would be no framework for the direction of growth towards brownfield sites in the County, where such direction is appropriate. As a result greenfield development would be likely to occur on an increased basis and would result in the building upon and thereby sealing off of the non-renewable subsoil and soil resources.

It is likely that there would be applications to expand quarrying activities in certain areas which are underlain by valuable deposits. Such development would result in the reduction of the non-renewable subsoil and soil resources.

There would be no framework for the provision of infrastructure - such as that relating to waste water treatment - to serve existing and future development and therefore soil would have the potential to be polluted and contaminated as a result of pollution from development which is not serviced by appropriate waste water infrastructure.

## **3.5 Water**

### **3.5.1 Introduction**

Water in County Kilkenny is an integral part of the County's landscape - surface waters support diverse ecosystems across the county, with most of the main river channels subject to ecological designations, and they are important in the supply of drinking water through direct abstraction and through their role in groundwater recharge.

Water sustains the biodiversity and flora and fauna described under Section 3.2 as well as providing for productive agriculture. There are 128 river catchments in the County which drain the land through a number of rivers and streams. The River Barrow flows in a north south direction between County Kilkenny and Counties Carlow and Wexford and forms the most part of Kilkenny's eastern County border. The River Nore is a tributary of the Barrow, entering County Kilkenny at its northern border and flowing through Kilkenny City before it flows into the Barrow at New Ross.

The River Suir comprises Kilkenny's southern boundary. Ground water bodies in County Kilkenny follow the pattern of the County's geology the empty spaces of which they are contained in.

Groundwater is stored in the void spaces in underground layers of rock, or aquifers.

### **3.5.2 The Water Framework Directive**

The principal legislation governing water quality in Ireland is the European Communities (Water Policy) Regulations 2003 (SI No. 722 of 2003) which transposes the Water Framework Directive (2000/60/EC). The Water Framework Directive (WFD) requires that all member states implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving good status by 2015. All public bodies, including Kilkenny County Council, are also required to: coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted, and; improve polluted water bodies to good status by 2015.

For the purpose of implementing the WFD, Ireland has been divided into eight river basin districts or areas of land that are drained by a large river or number of rivers and the adjacent estuarine/coastal areas. County Kilkenny is located in the South Eastern River Basin District (SERBD) which includes parts of Counties Carlow, Cork, Kildare, Kilkenny, Laois, Limerick, Tipperary, Offaly, Waterford, Wexford and Wicklow.

Local Authorities located in the SERBD, including Kilkenny County Council, are preparing a management plan which will be implemented in order to help protect and improve all waters in the SERBD.

### **3.5.3 SERBD Risk Assessment**

For the purposes of assessment, reporting and management, water in the SERBD has been divided into groundwater, rivers, lakes, estuarine waters and coastal waters which are in turn divided into specific, clearly defined *water bodies*.

Each water body has been assessed, on the basis of human activity, whether it is *at risk* or *not at risk* of failing to achieve the WFD's objectives by 2015. In order to facilitate this assessment, a four-class risk classification scheme was applied using the following terminology:

- Not at Significant Risk
- Probably Not at Significant Risk
- Probably at Significant Risk
- At Significant Risk

Water bodies placed in the *At Significant Risk* category will need improvement to achieve the required status while water bodies in the *Probably at Significant Risk* category are likely to need improvement in order to achieve the required status. A Characterisation Report was published by the SERBD Project Office in 2005<sup>8</sup> including the various risk assessments.

### 3.5.4 Rivers

#### 3.5.4.1 EPA Monitoring

As monitored by the Environmental Protection Agency (EPA), river and stream water quality in County Kilkenny is generally unpolluted (Q4, Q4-5 or Q5)<sup>9</sup> however there are a number of channel lengths which have been measured as being slightly (Q3-4) or moderately polluted (Q2-3 or Q3)<sup>10</sup>.

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<sup>8</sup> SERBD Project Office (2005) *Article 5 Characterisation Summary Report* Carlow: WRBD Project Office

<sup>9</sup> The Biotic Index Values, or Q values, are assigned to rivers in accordance with biological monitoring of surface waters - low Q ratings, as low as Q1, are indicative of low biodiversity and polluted waters, and high Q ratings, as high as Q5, are indicative of high biodiversity and unpolluted waters. Good status as defined by the Water Framework Directive equates to approximately Q4 in the national scheme of biological classification of rivers as set out by the EPA.

<sup>10</sup> Slightly polluted waters (Q3-4) support reduced or much reduced biological community diversity, have water quality which is fair or doubtful, and, may be of a satisfactory or unsatisfactory condition, referring to the likelihood of interference with beneficial or potential beneficial uses. Moderately polluted waters (Q2-3 or Q3) support much reduced or low biological community diversity, have water quality which is doubtful or poor, and, are of unsatisfactory condition.

A number of tributaries of the Nore, Barrow and Suir as well as stretches of the main rivers are identified as being slightly or moderately polluted. Stretches of the River Glory are identified as being moderately polluted while the Kings River and Arigna River have stretches which are identified as being slightly polluted (EPA, 2005)<sup>11</sup>.

#### 3.5.4.2 SERBD Risk Assessment

Figure 3.7 shows the SERBD Risk Assessment for river catchments in County Kilkenny. In terms of achieving the WFD's objectives by 2015 only 11 out of 128 river catchments in the County are classed as being either *not at risk* or *probably not at significant risk* of failing to achieve the WFD's objectives by 2015 while 117 of the 128 are either *at significant risk* or *probably at significant risk*.

It is noted that river catchments in which most development and settlement has taken place in the past and is likely to take place in the future are generally assessed as being *at significant risk* or *probably at significant risk* of failing to achieve the WFD's objectives by 2015.

### 3.5.5 Lakes

#### 3.5.5.1 EPA Monitoring

There are few lakes in County Kilkenny reflecting the free draining nature of the County's soils. The EPA has not monitored or received water quality data on any lakes in the County. There is no SERBD Risk Assessment for Lakes in County Kilkenny.

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<sup>11</sup> Environmental Protection Agency (2005) *Water Quality in Ireland 2001-2003* Wexford: Environmental Protection Agency

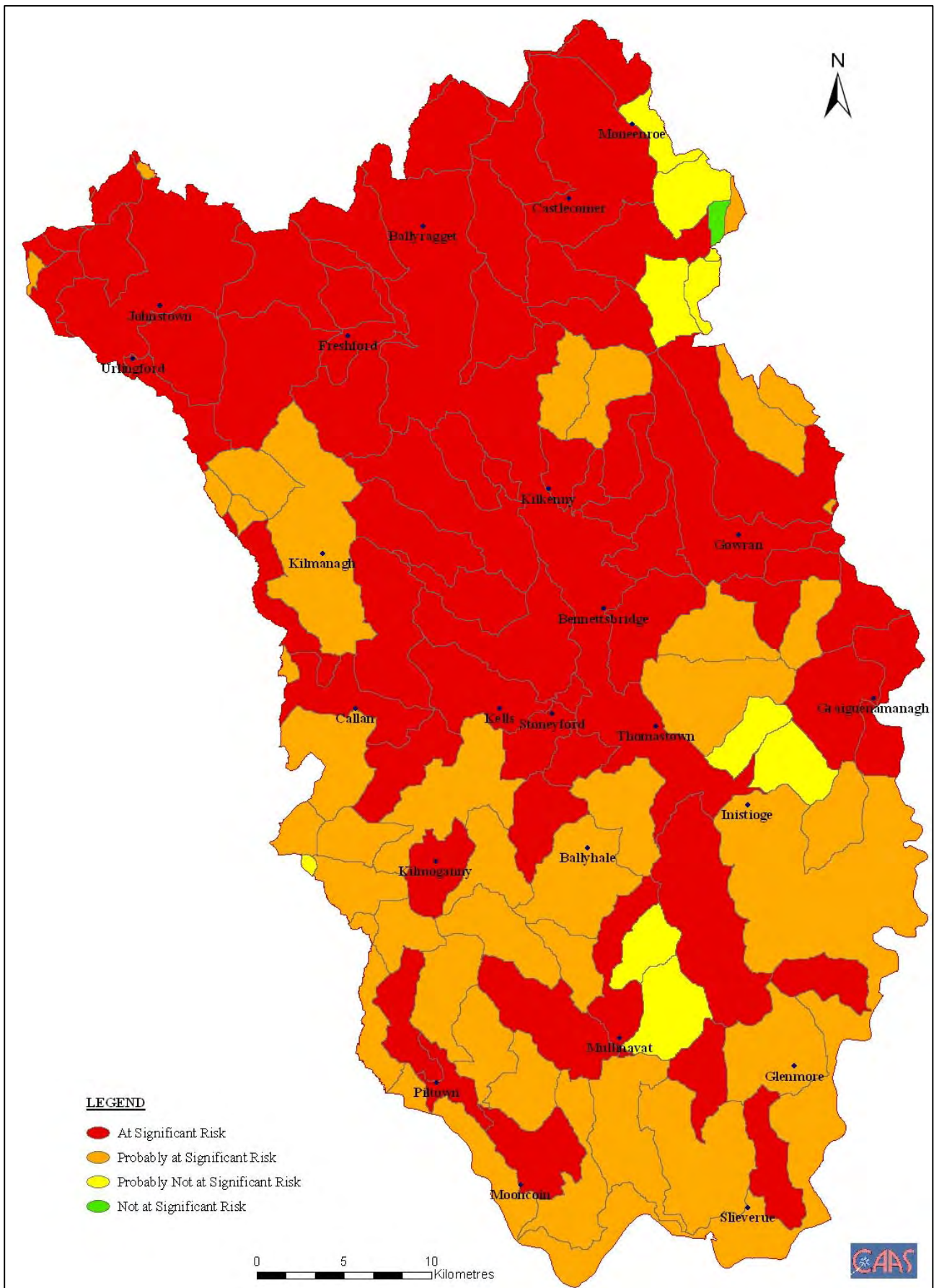


Figure 3.7 SERBD River Catchment Risk Assessment

### 3.5.6 Coastal, Bathing, Estuarine Waters

#### 3.5.6.1 EPA Monitoring for Bathing Waters

Coastal waters are important for tourism, for use as bathing locations and for supporting marine wildlife. Although County Kilkenny does not have a coastline, the Rivers Barrow and Suir which drain County Kilkenny flow into Waterford Harbour to the south of the County. The EPA monitors three coastal bathing waters in the Harbour: Duncannon Bay (located in the east of County Wexford), Dunmore East Councillors Strand and Dunmore East Main Strand (both of which are located in the west of County Waterford).

With regard to the most recently published figures (EPA, 2005)<sup>12</sup> these three waters showed compliance with guide values as set out in the Bathing Waters Directive 1976. The Directive aims, inter alia, to protect the environment and public health, through reducing the pollution of bathing water and to protecting such water against further deterioration. Compliance with guide values exceeds guidance with mandatory values and can be regarded as quality objectives which all bathing sites should endeavour to achieve. Mandatory Values are values which must be observed if the bathing area is to be deemed compliant with the Directive.

#### 3.5.6.2 EPA Monitoring for Estuarine Waters

Estuarine waters which are monitored by the EPA in County Kilkenny include those of the Upper River Suir, Upper River Barrow and the River Nore.

With regard to the most recently published figures (EPA, 2005)<sup>13</sup> categories of criteria for nutrient enrichment, accelerated growth, and undesirable disturbance are used by the EPA's Assessment of Trophic Status of Estuaries and Bays in Ireland (ATSEBI) system in order to classify the estuarine and coastal waters using the following classifications:

- *Eutrophic* - elevated nutrient concentrations, accelerated growth of plants and undesirable water quality disturbance occur simultaneously.
- *Potentially Eutrophic* - two of the criteria are breached and the third falls within 15 per cent of the relevant threshold value/values.
- *Intermediate* - breaches of one or two of the criteria occur;
- *Unpolluted* - no criteria are breached.

The estuarine waters of the Upper River Suir, Upper River Barrow and the River Nore are identified as being eutrophic (EPA, 2005)<sup>14</sup>. It is noted that good status as defined by the WFD requires the achievement of the "unpolluted" classification under the ATSEBI by estuarine and coastal waters.

#### 3.5.6.3 SERBD Risk Assessment

Figure 3.9 shows the SERBD Risk Assessment for estuarine waters which flow along County Kilkenny's borders. The Suir and Nore estuarine waters are assessed as being *probably at significant risk* of failing to achieve the WFD's objectives by 2015 while the waters of Waterford Harbour into which these waters flow are assessed as being *probably at significant risk* under the SERBD classification system.

### 3.5.7 Groundwater

#### 3.5.7.1 Baseline

Groundwater is stored in the void spaces in underground layers of rock, or aquifers. These aquifers are permeable, allowing both the infiltration of water from the soils above them and the yielding of water to surface and coastal waters. Groundwater is the part of the subsurface water that is in the saturated zone - the zone below the water table, the uppermost level of saturation in an aquifer at which the pressure is atmospheric, in which all pores and fissures are full of water. Ground water is important for drinking water supply together as well as the source of some surface waters across County Kilkenny.

The Geological Survey of Ireland rates aquifers according to their vulnerability to pollution (see Figure 3.9).

<sup>12</sup> Environmental Protection Agency (2005) *Bathing Water Quality in Ireland 2005* Wexford: Environmental Protection Agency

<sup>13</sup> Ibid.

<sup>14</sup> Environmental Protection Agency (2005) *Water Quality in Ireland 2001-2003* Wexford: Environmental Protection Agency

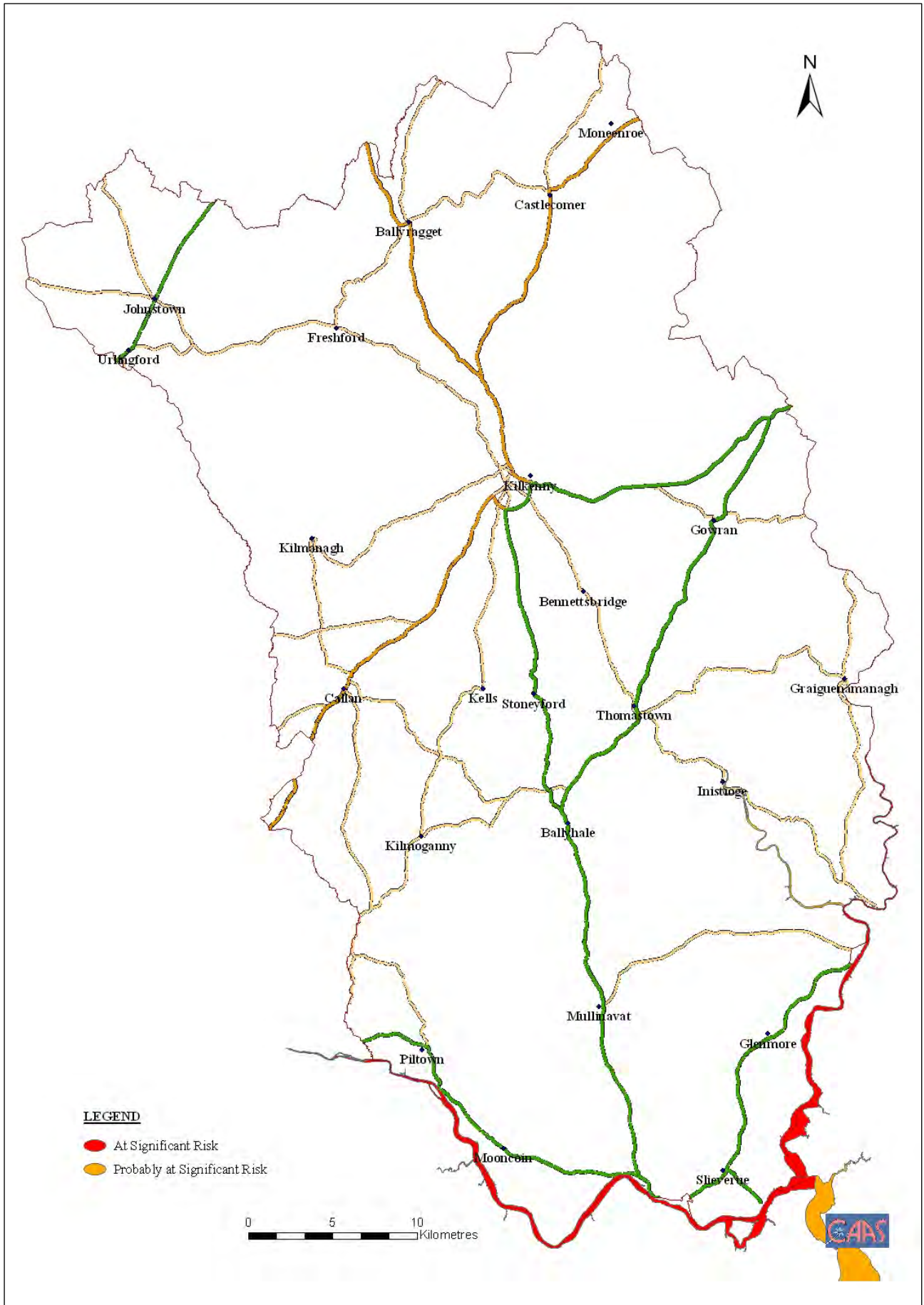


Figure 3.8 SERBD Transitional Waters Risk Assessment



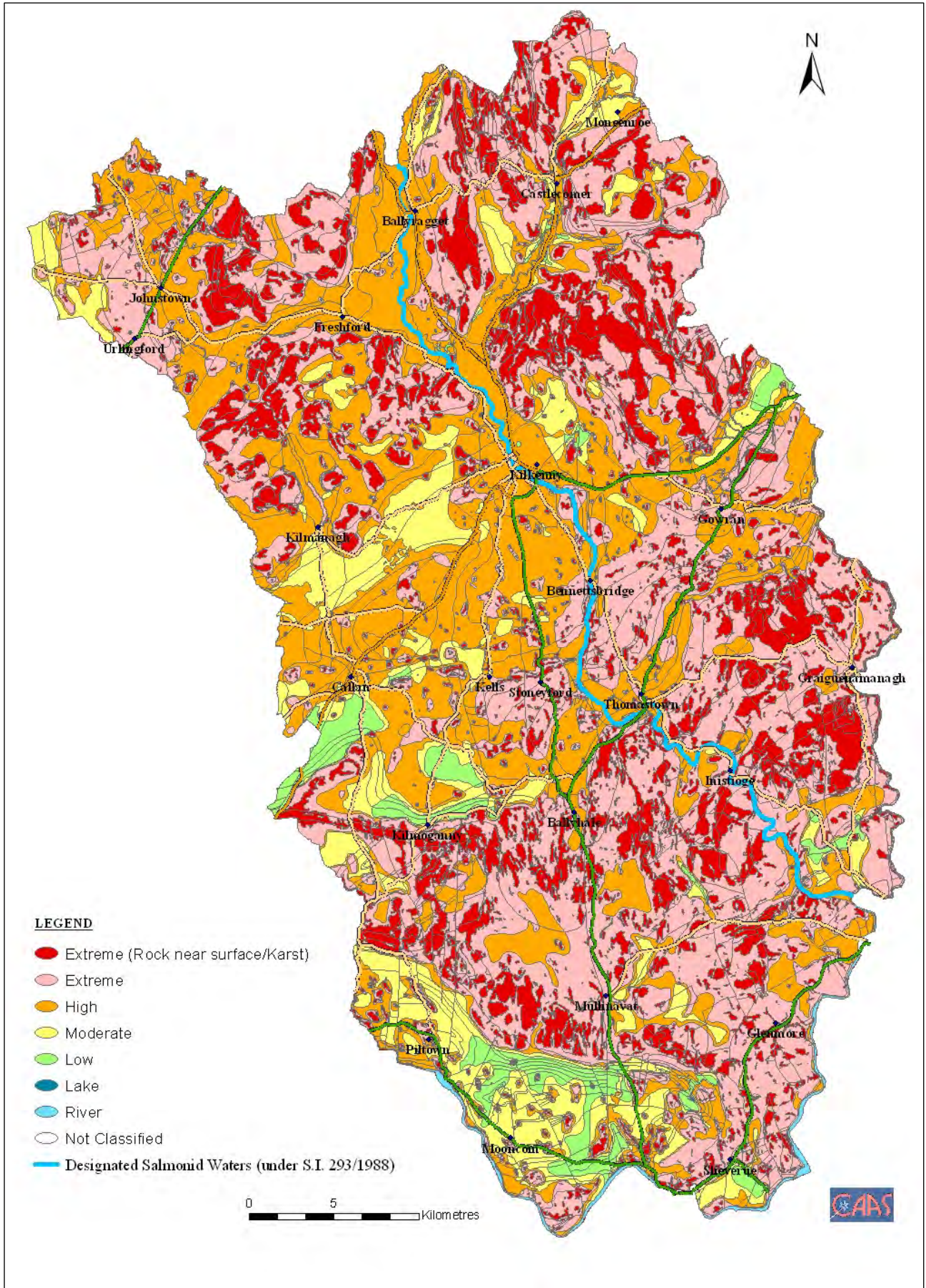


Figure 3.9 Ground Water Vulnerability Rating



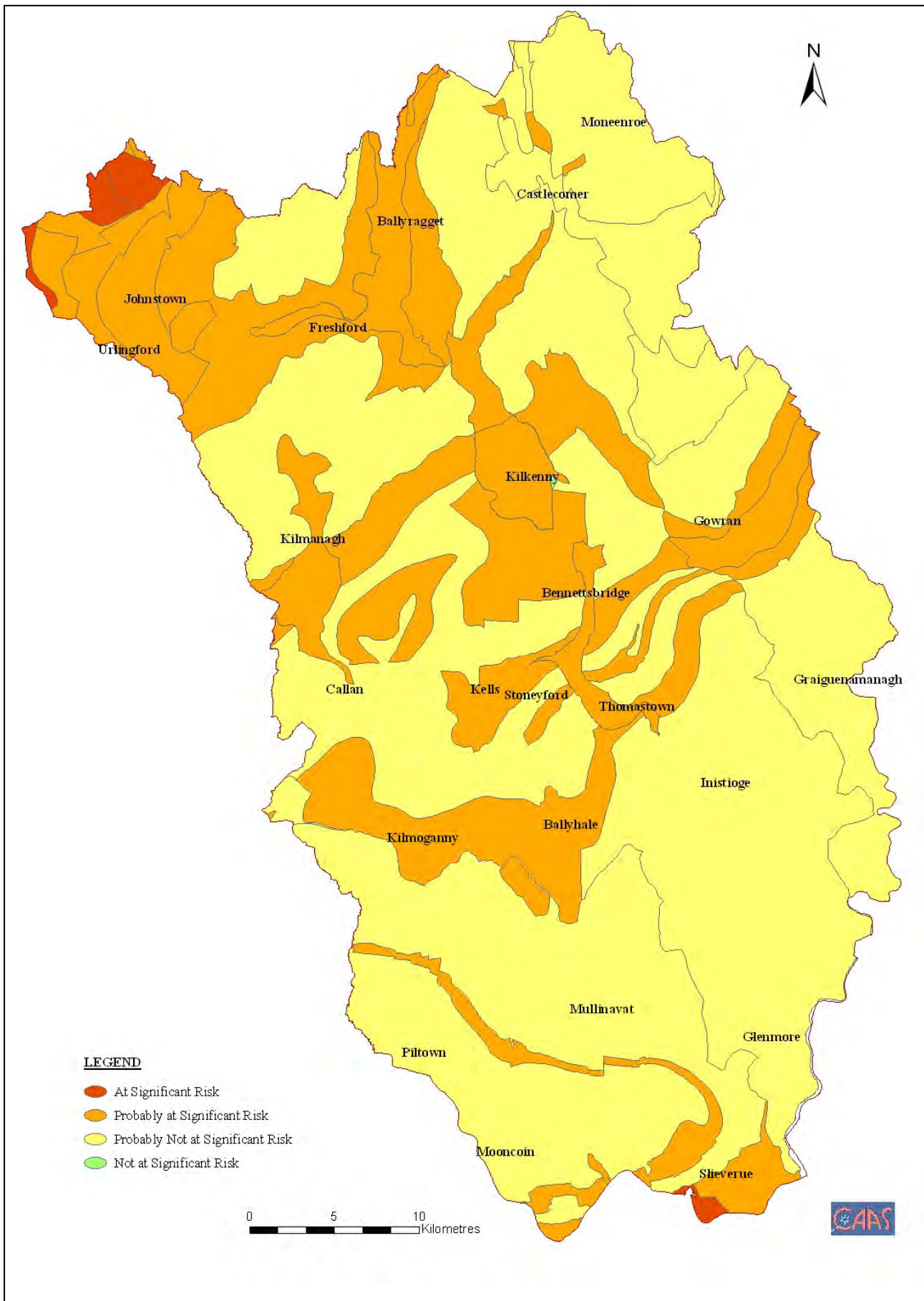


Figure 3.10 SERBD Ground Water Risk Assessment

Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Aquifers of extreme vulnerability (which can be found through much of the southern, northern and eastern parts of the County) and aquifers of high vulnerability (which predominate in the low lying central areas) are the two classifications of aquifers which are most sensitive to an imposed contaminant load - the majority of the County's ground waters are classified as being either of extreme or high vulnerability.

### 3.5.7.2 SERBD Risk Assessment

Figure 3.10 shows the SERBD Risk Assessment for Groundwater in County Kilkenny. Most of the aquifers in the County Kilkenny are assessed as being probably not *at significant risk* however it is noted that ground water bodies closest to locations in which most development and settlement has taken place in the past and is likely to take place in the future are generally assessed as being *probably at significant risk* of failing to achieve the WFD's objectives by 2015.

### 3.5.8 Flooding

The risk of flooding in County Kilkenny has been increased in the past by human actions including the clearing of vegetation to make way for agriculture and the development of settlements in the flood plains of rivers.

Infrastructural development, culverting and forestry operations all present an ongoing flooding hazard.

### 3.5.9 Existing Problems

There are severe environmental problems in County Kilkenny with regard to water quality which have the potential for significant adverse impact upon biodiversity and flora and fauna, drinking water supplies and human health.

The majority of river catchments, all estuarine waters and ground waters which are located closest to the largest settlement centres are classified as being either *at significant risk* or *probably at significant risk* of failing to achieve the WFD's objectives by 2015. In addition: there are a number of channel lengths - including stretches of and tributaries of the Nore, Barrow and Suir - which have been measured as being slightly or moderately polluted; the majority of the County's ground waters are classified as

being either of extreme or high vulnerability; the estuarine waters of the Upper River Suir, Upper River Barrow and the River Nore have been identified as being eutrophic, and; the majority of the County's ground waters are classified as being either of extreme or high vulnerability.

### 3.5.10 Evolution of Water in the Absence of a CDP

Based on the risk assessment included in the SERBD Characterisation Report (2005)<sup>15</sup>, a sizable proportion of water bodies in County Kilkenny would be unlikely to meet their commitments under the Water Framework Directive.

If development was to occur without appropriate waste water infrastructure then it is likely that additional water bodies would fail to meet WFD commitments. Also, the extent and severity of adverse impacts with regard to biodiversity and flora and fauna, drinking water supplies and human health as a result of poor water quality would be likely to increase.

## 3.6 Air and Climatic Factors

### 3.6.1 General Description

Climate is quite uniform throughout County Kilkenny. Relative to the rest of the Country, the continental climate type of the County is mild and moist with an average annual rainfall of 800-1000mm. Mean daily temperatures range from 5.2°C to 13.4°C, however it is known that temperatures vary throughout the year (the highest temperature ever recorded in Ireland, 33.3°C, was in June 1887 at Kilkenny Castle and; Kilkenny often sees some of the lowest winter temperatures in the Country). Nevertheless, the climate is generally fairly stable as located in an area of the Country that is least affected by the sea. Kilkenny experiences an average of 4 days per year with snow lying, 9 days per year with hail, and 5 days per year with thunderstorms (CAAS, 2003)<sup>16</sup>.

<sup>15</sup> SERBD Project Office (2005) *Article 5 Characterisation Summary Report* Carlow: WRBD Project Office

<sup>16</sup> CAAS (2002) *Kilkenny Landscape Appraisal* Kilkenny: Kilkenny County Council [data from Met Éireann, Dublin.]



The prevailing wind direction in County Kilkenny is south-west to north-east. The presence of certain upland areas together with the low lying nature of most of the County gives it significant wind energy potential.

Air quality is monitored by the EPA at one location in County Kilkenny, Kilkenny City. The 2005 Air Quality Assessment for the city showed 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 PM<sub>10</sub> exceeded the upper assessment threshold – a probable result of high traffic levels.

### 3.6.2 Existing Problems

Travel related emissions to air have significantly increased throughout the entire country in recent years and have been cited by the EPA as a probable cause of the exceedences of air quality thresholds in Kilkenny City.

Climate change effects have the potential to alter precipitation and drainage patterns and should be considered particularly with reference to water supply and flooding issues.

### 3.6.3 Evolution of Air and Climatic Factors in the Absence of a CDP

In the absence of a CDP for Kilkenny there would be no framework for the location of new development and as a consequence development would be likely to occur in a piecemeal fashion, spread out across wide areas. This would result in significant increases in travel related emissions to air.

In the absence of a revised wind strategy for the County the wind strategies of surrounding counties would not be likely to be considered and new windfarm developments might not be directed to the most appropriate locations.

## 3.7 Material Assets

### 3.7.1 Waste Water

The treatment of wastewater is governed by the Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive

98/15/EEC) transposed into Irish law by the Urban Waste Water Treatment Regulations 2001 (SI 254 of 2001). The Directive aims to protect the environment from the adverse effects of the wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. The Regulations stipulate that sewage treatment facilities are in place in all towns by 2005. The treatment of wastewater is also relevant to the Water Framework Directive which requires all public bodies, including Kilkenny County Council, to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and bring polluted water bodies up to good status by 2015 (see Section 3.5).

The policy of Kilkenny County Council is to improve and extend Water Services in the County. The National Development Plan (2007-2013) recognises the need to address the infrastructural deficit in the water services sector and an increased level of funding is now in place. This funding should have the effect of accelerating the provision of waste water infrastructure over the next number of years.

Expansion and improvement of waste water treatment infrastructure is necessary to encourage and facilitate industrial and commercial development in the County as well as to serve existing and proposed development. Maintaining a proper balance between protecting and enhancing the environment and economic and sustainable development is a central goal of Kilkenny County Council.

Kilkenny County Council's Water Services and Environmental Department's 2007 *'A Programme for the provision of Water and Wastewater Infrastructure in Kilkenny City and County'* identifies that there is insufficient waste water treatment infrastructure in County Kilkenny to serve existing and proposed populations. The programme identifies that there is a need to upgrade a number of existing sewerage schemes and outlines areas to be prioritised for waste water infrastructure, under the major schemes programme, serviced land initiative and small schemes programme.

It is noted that a mitigation measure proposed by this report (see Section 9 MM5) is likely to contribute to the avoidance of significant impacts as a result of inappropriately treated waste water.

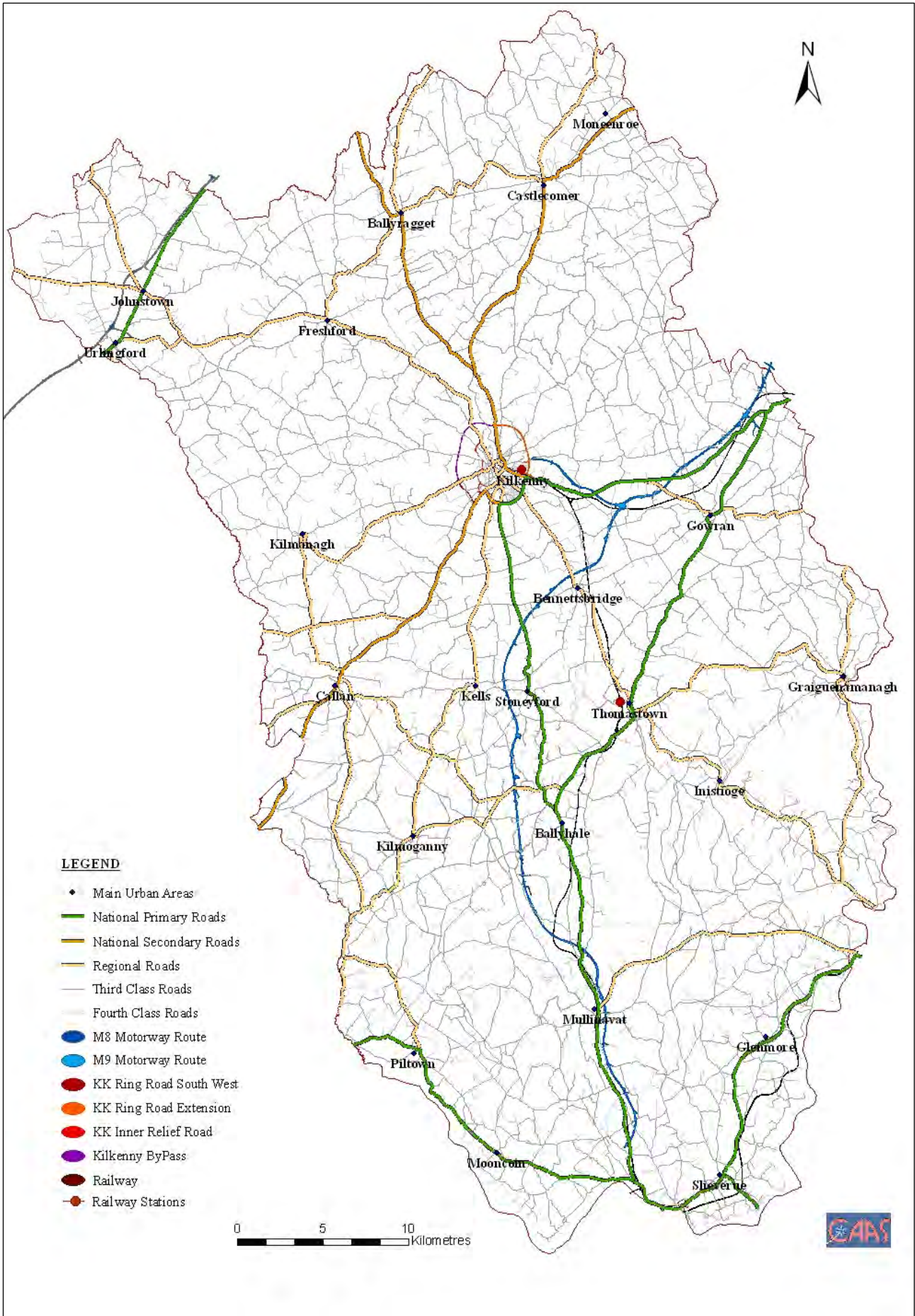


Figure 3.11 Transport Infrastructure

## 3.7.2 Drinking Water

### 3.7.2.1 Introduction

The EPA publishes annual reports on the quality of drinking water in Ireland which utilises the monitoring data collected by Local Authorities. Drinking water quality in County Kilkenny is discussed under the sections below with reference to the two most recent EPA reports *The Quality of Drinking Water in Ireland- A Report for the Year 2004* (EPA, 2005) and *The Quality of Drinking Water in Ireland- A Report for the Year 2005* (EPA, 2006).

Drinking water is supplied in County Kilkenny via a range of public and private schemes (Table 3.6). The vast majority of the population are served by 'Public Water Supplies'. These are sanitary authority operated schemes (though these may be run by a private contractor on behalf of the sanitary authority) and they supply water to the majority of households in Ireland.

Other drinking water supply schemes which are present in the County include:

- 'Public Group Water Schemes' - schemes where the water is provided by the sanitary authority but responsibility for distribution of the water rests with the group scheme. These schemes tend to be supplied off larger public water supplies.
- 'Private Group Water Schemes' are schemes where the owners of the scheme (usually representatives of the local community) source and distribute their own water. Combined; the 'public' and 'private' group water schemes supply water to around 10% of the population of Ireland.
- 'Small Private Supplies' is a large group of different types of supplies comprising industrial water supplies (such as those used in the brewing industry) to boreholes serving single houses. The majority of these supplies are exempt from the requirements of the Regulations, except where the water is supplied as part of a public or commercial activity.

Type of Supply	Number of Supply Zones	Population Served
Public Water Supplies	15	51,320
Public Group Water Schemes	8	768
Private Group Water Schemes	35	3,463
Small Private Supplies	59	Not available

**Table 3.6 Summary of Water Supplies<sup>17</sup>**

### 3.7.2.2 Assessment of Monitoring for 2004

In general, appropriate sampling in the majority of public water supplies was carried out. However, in 2004 Kilkenny County Council did not carry out monitoring in 57 public group water schemes and 3 private group water schemes that were covered by the Drinking Water Regulations.

There was no monitoring carried out in private supplies that supply water as part of public or commercial activities in Kilkenny during 2004. The EPA identified that 'these discrepancies must be corrected in future monitoring programmes'.

### 3.7.2.3 Assessment of Monitoring for 2005

No monitoring was carried out in 7 of the 8 public group water schemes in Kilkenny during 2005 and no audit samples were analysed in 5 public water supplies.

### 3.7.2.4 Overall Compliance in 2004

The overall rate of compliance in Kilkenny County Council, 94.6%, was below the national average during 2004. The quality of drinking water in public water supplies was, in general, satisfactory while the quality of drinking water provided by private group water schemes was below average and was unsatisfactory.

### 3.7.2.5 Overall Compliance in 2005

The overall rate of compliance in Kilkenny County Council, 96.7%, was above the national average (up from 94.6% compliance in 2004).

<sup>17</sup> Environmental Protection Agency (2006) *The Quality of Drinking Water in Ireland- A Report for the Year 2005* Wexford: Environmental Protection Agency

Compliance in most public water supplies, public group water schemes and private group water schemes was satisfactory during 2005.

### **3.7.2.6 Compliance with E. coli Standard in 2004**

There were 5 incidents of E. coli contamination in public water supplies in Kilkenny County during 2004 [at Bennetsbridge, Gowran-Goresbridge- Paulstown, Kilkenny City (Troyswood), Mooncoin and Thomastown]. All these incidents were moderate and were once off incidents. The number of private group water schemes in which E. coli was identified was unacceptable as 28 of the 33 private group water schemes tested failed to meet the standards at least once during 2004. In their report, the EPA noted that the situation was "unacceptable and [that] action must be taken by the sanitary authority to ensure that these group schemes take the appropriate measures to ensure that they are capable of supplying potable water on a consistent basis".

### **3.7.2.7 Compliance with E. coli Standard in 2005**

There were 2 incidents of E. coli contamination in public water supplies in Kilkenny during 2005 in the Bennetsbridge and Callan supplies; however, both incidents were due to one-off detections of a single organism. The microbiological quality of the majority of private group water schemes was satisfactory although 7 of the 35 schemes monitored were contaminated with E. coli. This is a significant reduction in the number of schemes that were contaminated compared to 2004 when 28 of the 33 private group water schemes monitored were contaminated.

### **3.7.2.8 Compliance with Coliform bacteria parametric value in 2004**

The overriding feature of the monitoring of the indicator parameters in the private group water schemes was the relatively low percentage of samples complying with the coliform bacteria parametric value (52%). In total, 30 of the 33 private group water schemes monitored exceeded the parametric value for coliform bacteria at least once during 2004. The EPA identified that the Council must address the quality bacteriological quality deficiencies in the private group water schemes as a matter of urgency.

### **3.7.2.9 Compliance with Coliform bacteria parametric value in 2005**

The poor rate of compliance with the coliform bacteria parametric value in both the private group water schemes and the private water supplies remains the overriding issue in relation to compliance with the indicator parametric values. 80% of samples analysed in private group water schemes (up from 52% in 2004) were compliant while 69% of the samples analysed in the private water supplies were free of coliform bacteria in Kilkenny in 2005.

### **3.7.2.10 Statutory Notices Served in 2004**

A Statutory Notice was served to the Council in 2004 as a result of direct discharge of sludge to the River Nore from Troyswood Treatment Plant. The Council failed to meet deadline of 17th December 2004 for the cessation of the discharge and was served with a Proposed Direction in August 2005 directing them to cease the discharge which it complied with.

### **3.7.2.11 Statutory Notices Served after 2005**

The 2005 EPA Report identifies that a Statutory Notice was served to Kilkenny County Council in 2006 as a result of chronic discharge from the Mooncoin Regional Treatment Plant which was causing pollution of the River Pollanassa. The Council are currently improving sludge treatment facilities at the Mooncoin plant.

## **3.7.3 Energy Infrastructure**

Due to County Kilkenny's climatic and topographical characteristics there is ongoing interest in the development of wind power and this is likely to continue with implications for other resources, particularly the landscape. A revised wind strategy for the County is to be included alongside the CDP which will identify the most appropriate locations for wind energy development within the County.

New telecommunications infrastructure, new powerlines or upgrading of existing powerlines all have the potential to impact on the landscape and require considerable planning effort.

## **3.7.4 Transport Infrastructure**

### **3.7.4.1 Roads**

Due to sensitivities including landscape, archaeology and proximity to residences any

significant improvement(s) to the County's road network must be preceded by EIA(s) and consent from the planning authority. Kilkenny is connected to Laois in the north through the R432 and R436 Regional Roads, to Carlow in the east through the N10 National Primary Road, to Waterford in the south through the N10 National Primary Road and to Tipperary in the west through the N76 and a number of Regional Roads. Transport infrastructure is mapped on Figure 3.11.

#### 3.7.4.2 Rail

Iarnród Éireann provides train services through County Kilkenny on the Kildare/Monasterevin to Waterford City line, passing through Kilkenny City and Thomastown stations. This line is integrated into the entire national rail network, joining the Dublin to Galway line to the north of Kilkenny and the Rosslare to Ennis line to the south of the County. A disused line stretches through Kilkenny from Waterford to New Ross however there are no plans in the foreseeable future to provide services along this line.

The County Council is committed to the promotion of rail services and the growth of settlements along the rail corridor between Kilkenny City and Thomastown.

#### 3.7.4.3 Cyclists

In order to minimise traffic related emissions to air, the provision of inter-linked cycle ways infrastructure throughout the County, between and within settlements, is important.

### 3.7.5 Agricultural and Forestry

Kilkenny's very fertile and well drained soils support a productive agricultural industry which includes tillage and dairying farming.

As a result of decoupling, some less productive, marginal areas in the County are experiencing a decline in agriculture and an increase in forestry either as a result of commercial ventures or natural colonisation processes.

### 3.7.6 Existing Environmental Problems

Kilkenny has experienced relatively large growth in recent years and there are certain areas whereby development has exceeded infrastructural development, for example where

construction of development has preceded waste water treatment infrastructure or exceeded existing waste water treatment infrastructure capacity.

There is a lack of appropriate waste water treatment infrastructure in many parts of County Kilkenny. The lack of this infrastructure is likely to be adversely impacting upon water bodies identified under Section 3.5 as being *at significant risk* or *probably at significant risk* in terms of achieving the WFD's objectives by 2015.

As identified above, the EPA (2005)<sup>18</sup> found that the overall rate of compliance in Kilkenny for drinking water quality was below the national average in 2004. Although this overall compliance improved for the year 2005, monitoring for both 2004 and 2005 identified non-compliance with the coliform bacteria parametric value. It is also noted that for both years there were discrepancies in the number of supplies monitored.

In order to accommodate recent and future growth, programmes of waste water treatment plants and networks, water supply infrastructure, transport infrastructure and powerlines etc need to be implemented. These programmes are likely to have significant adverse impacts on the environment if not mitigated. These programmes would require environmental assessments to be carried out on them in order to prevent such impacts.

### 3.7.7 Evolution of Material Assets in the Absence of a CDP

In the absence of a CDP for Kilkenny there would be no framework to provide the infrastructure which is necessary across the County to serve existing and proposed development such as waste water treatment plants and networks, water supply infrastructure, transport infrastructure and powerlines etc.

Failure to provide sufficient infrastructure for development would be likely to result in

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<sup>18</sup> Environmental Protection Agency's (2005) *The Quality of Drinking Water in Ireland- A Report for the Year 2004* Wexford: Environmental Protection Agency<sup>18</sup>

significant adverse impacts. For example, failure to upgrade and provide new waste water infrastructure would be likely to adversely impact upon water quality and indirectly significantly adversely impact upon biodiversity and flora and fauna, drinking water supplies and human health.

## 3.8 Cultural Heritage

### 3.8.1 Introduction

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.

The heritage of Kilkenny is a unique resource which is fundamental to the cultural identity of the county and the quality of life of its citizens- it is central to how we see ourselves and to our identity as individuals and communities. Historic buildings can define a region's localities and communities and can become a focus of community identity and pride. An historic church or park, for example, can help define a neighbourhood and create a sense of local cohesion.

### 3.8.2 Archaeological Heritage

#### 3.8.2.1 Introduction

Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. Archaeological heritage consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence. As archaeological heritage can be used to gain knowledge and understanding of the past it is of great cultural and scientific importance.

Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological

deposits and underwater features such as wrecks.

Archaeological sites may have no visible surface features; the surface features of an archaeological site may have decayed completely or been deliberately removed but archaeological deposits and features may survive beneath the surface. Such sites may sometimes be detected as crop-marks visible from the air or have their presence indicated by the occurrence of artefact scatters in ploughed land, but in other cases may remain invisible unless uncovered through ground disturbance. Wetland environments such as peatlands have a high potential to contain archaeological sites (including trackways, field systems, and settlement sites) which are either difficult or impossible to identify from surface examination alone.

Archaeology in Ireland is protected under the National Monuments Acts 1930 to 2004. Recorded Monuments, National Monuments subject to Preservation Orders and the Register Historic Monuments (detailed below) for County Kilkenny are widely dispersed throughout the County and provide plentiful evidence of early settlement, their distribution showing the spread of historic settlements). Clusters of monuments are found in and around the areas of Callan, Thomastown, Graiguenamanagh, Gowran, Inistioge, Kilkenny City, Kells, Newtown Jerpoint, Killamery, Ahenny and Kilmogue.

The Christian era, which resulted in the establishment of large monasteries and village clusters, and proceeding successive invasions modified the landscape of County Kilkenny and left behind archaeological heritage - the Vikings strengthened urban areas and their commercial function, whilst Norman invaders modified and strengthened villages and towns.

#### 3.8.2.2 The Record of Monuments and Places

The Record of Monuments and Places for County Kilkenny lists and protects monuments and places under Section 12 of the National Monuments (Amending National Monument Acts from 1930 to 1994) Act, 1994 by requiring ministerial consent for any alteration of a Recorded Monuments or Place.

The term 'monument' includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical



purposes. All monuments in existence before 1700 AD are automatically considered to be historic monuments within the meaning of the Acts. Monuments of architectural and historical interest also come within the scope of the Acts. Monuments include: any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections; any cave, stone or other natural product, whether or not forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position; any, or any part of any, prehistoric or ancient tomb, grave or burial deposit, or, ritual, industrial or habitation site, and; any place comprising the remains or traces of any such building, structure or erection, any such cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site, situated on land or in the territorial waters of the State', but excludes 'any building or part of any building, that is habitually used for ecclesiastical purposes'.

Recorded Monuments and Places are listed under Table 3.7 and mapped on Figure 3.12.

### **3.8.2.3 National Monuments subject to Preservation Orders**

Section 8 of the 1930 Act (as amended) provides for the preservation of a national monument which is in danger of being or is actually being destroyed, injured or removed, or is falling into decay through neglect by way of a Preservation Order from the Minister of the Environment, Heritage and Local Government. Preservation Orders forbid any person without Ministerial consent to, inter alia, demolish, interfere with, disturb the ground within, around, or in proximity to, renovate, restore or sell any national monument without approval set out in a Ministerial Order.

The term 'national monument' refers to a monument or the remains of a monument together with the site of the monument, the preservation of which is of national importance by reason of historical, architectural, traditional, artistic, or archaeological interest.

National Monuments which are the subject of preservation orders in Kilkenny are listed under Table 3.8.

### **3.8.2.4 The Register for Historic Monuments**

Section 12 (1) of the 1994 Act provides for the establishment and maintenance of a Register of Historic Monuments. Historic Monuments are protected under Section 5 (10) of the 1994 Act which requires Ministerial consent in order to demolish or remove wholly or in part or disfigure, deface, alter or in any manner interfere with a historic monument entered in the Register.

A 'historic monument' includes prehistoric monuments and any monuments associated with the commercial, cultural, economic, industrial, military, religious or social history of the place where it is situated or of the country and also includes all monuments in existence before 1700 A.D. or such later date as may be appointed by regulations.

Areas containing no known archaeological monuments may be included in the Register of Historic Monuments as archaeological areas if such an area is of archaeological interest, including on the grounds of its: potential for containing archaeological monuments or objects; its interest in respect of palaeoenvironmental studies, and/or; its importance in respect of protecting the amenities of an archaeological monument.

Entries in the Register for Historic Monuments for Kilkenny are listed under Table 3.9.

Site (Townland)	Site (Townland)
Church and round tower (Aghaviller)	Kilfane church and graveyard (Kilfane demesne)
Church (Ballylarkin upper)	High cross (Killamery)
Castle and tower (Burnchurch)	Portal dolmen (Kilmogue)
St. Mary's church (Callan south)	Church (Kilree)
Augustinian friary (Callan north)	Round tower (Kilree)
Motte (Callan north)	Cross (Kilree)
Kilkieran high crosses (Castletown)	Church tower (Knocktopher)
Castle (Clara upper)	Dunmore cave (Mohil)
Church (Clonamery)	Rath (Rathealy)
Ruined part of St Mary's Grange (Gowran)	Kells augustinian priory (Rathduff (Madden))
Church and round tower (Fertagh)	Church (in ruins) (Sheepstown)
Grannagh castle (Grannagh)	Tullaherin church (in ruins) (Tullaherin)
Templeteahan (in ruins) (Grenan)	Church (in ruins) (Ullard)
Cistercian abbey (Jerpoint)	Moated house site (Raheenarran)

**Table 3.7 National Monuments protected under the Monuments Acts**

Site (Townland)	Site (Townland)
Tower (Baleen)	Jerpoint Abbey (Jerpoint Church)
Ring fort (Carigeen)	Motte and bailey (Powerstown east)
Ring fort (Danesfort)	Ring fort (Tullaroan)
Ring fort (Dunbell big)	Motte and bailey (Moat park)
Duiske Abbey (Graiguenamanagh)	Moated house site (Raheenarran)

**Table 3.8 Monuments protected by Preservation Orders**

Site (Townland)	Site (Townland)
Tower House (Goslingtown)	Ring Fort (Farrantemple)
Ring fort (Church Hill)	Ring Fort (Parksgrove)
Ballyshanemore Castle (Gowran Demesne)	Newtown Castle (Newtown (Shea))
Castle (Grenan)	Two Ringforts (Mohil)
Motte and Bailey (Kells)	Burial Cairn and Hillfort (Clomantagh)
Dovecote (Pottlerath)	Two Ringforts (Dunbell)
Motte (Garrynamann Lower)	Motte (Moat)
Mound (Ballyfereen)	Medieval Moated Site (Carran)
Castle (Inistioge)	Ringfort (Pigeonpark)
Ring fort (Ballylarkin Lower)	Ringfort + Souterrain (Garryricken)
Ring fort (Baunnahara)	Motte and Bailey (Portnascully)
Ring fort (Garryricken)	Church and Castle (Dysart)
Castle Site (Brownsford)	Fullacht Fiadh (Donaguile)
Mound (Dunmore Park)	Moated Site (Ballyogan)
Ballyragget Castle (Ballyragget)	Ringfort (Rathealy)
Passage Tomb (Knockroe)	Ringfort (New England)
Ringfort (Rathealy)	Enclosure (New England)
Castle Site (Belline)	Castle (Bamford)
Abbey View House (Thomastown)	12th Century Tower (Kilkenny)

**Table 3.9 Monuments to be protected by Listing Orders**



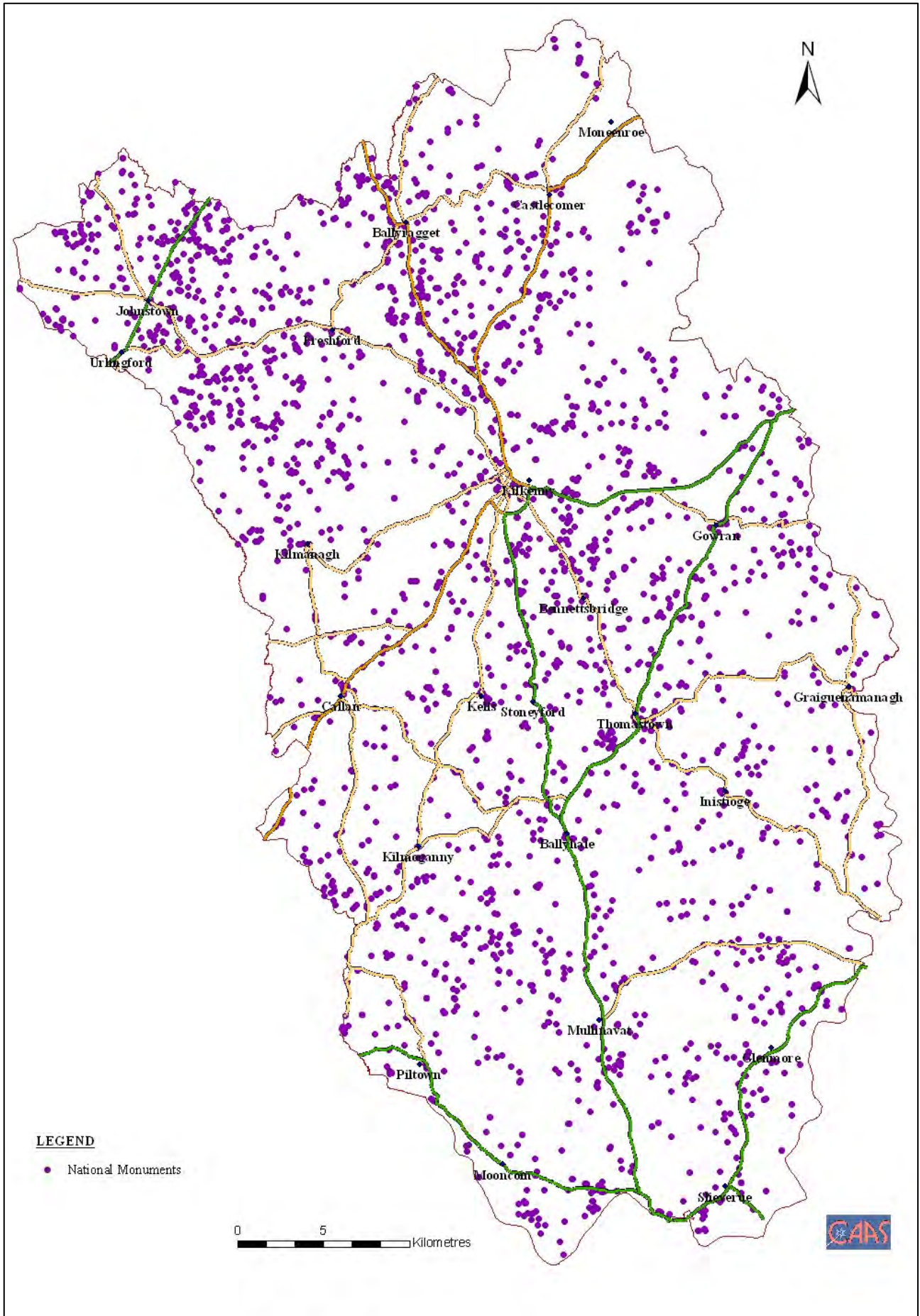


Figure 3.12 National Monuments

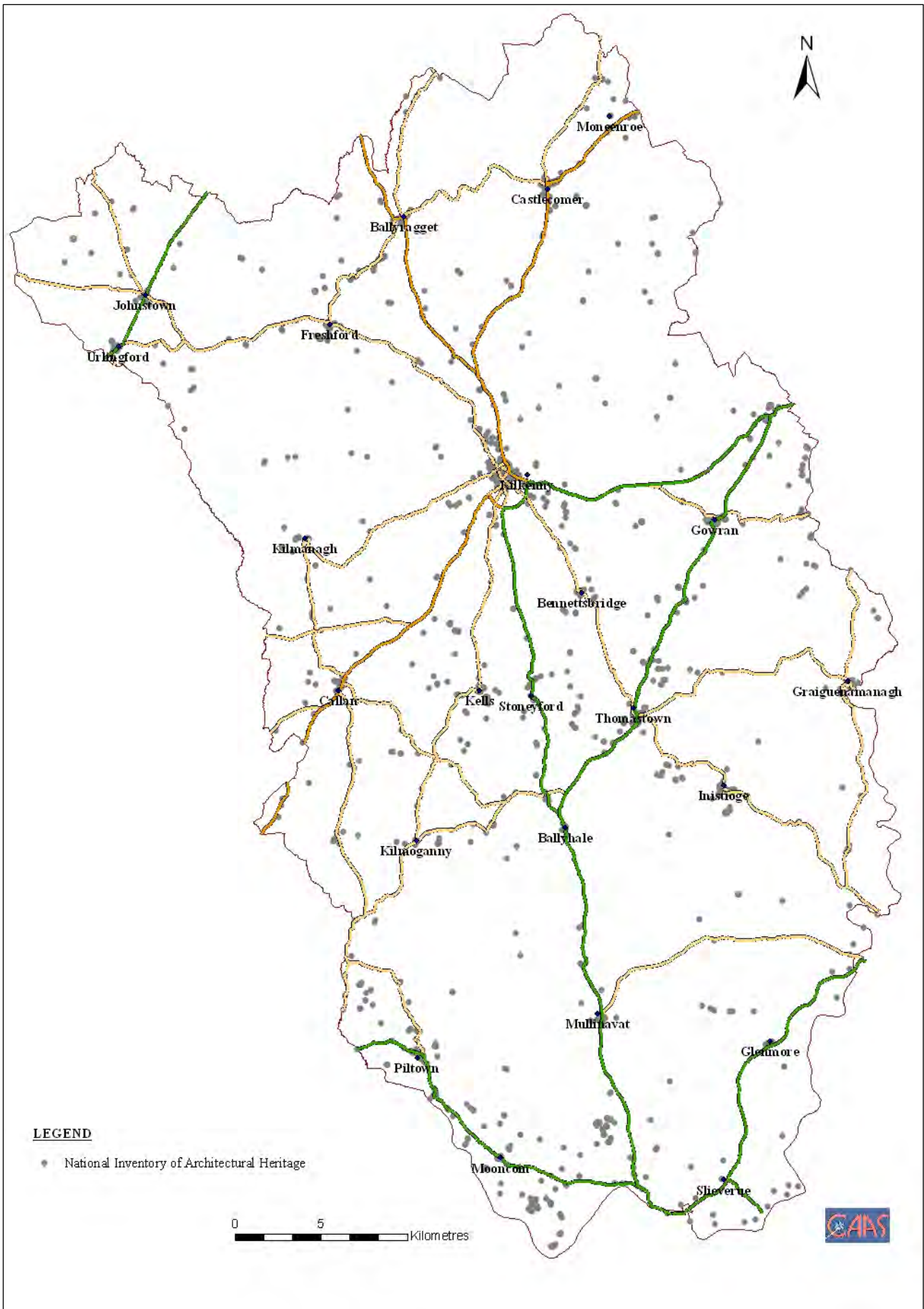


Figure 3.13 Architectural Heritage (NIAH)

### 3.8.3 Architectural Heritage

Kilkenny has a rich architectural heritage to be found in Kilkenny City and the County's towns and villages and dispersed around the countryside (Figure 3.13). This heritage includes country houses, castles, old mills, thatched cottages, monasteries, towers, churches and bridges.

The Record of Protected Structures (RPS) included in the current Development Plan is legislated for under Section 51 of the Planning and Development Act 2000 and includes structures which form part of the architectural heritage and which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. All structures, buildings, or erections, which came into existence after 1700 A.D. can be protected through enlistment in the RPS.

Protected Structures are defined as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view. The term 'structure' encompasses the interior of the structure, the surrounding land or 'curtilage' of the structure, any other structures lying within that curtilage.

There are around eight hundred RPS entries in Kilkenny County and City with nine Architectural Conservation Areas (ACAs) found in Kilkenny City and ACAs found in Gowran, Freshford, Inistioge and Ballyragget across the county. As well as there being a number of buildings in Kilkenny included on the RPS, there a number of additional structures that are listed in the National Inventory of Architectural Heritage (NIAH).

The NIAH is a state initiative under the administration of the DEHLG which was established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. Its purpose is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. It is intended that the NIAH provides the basis for the inclusion of particular structures in the RPS. All RPS entries are entries to the NIAH.

### 3.8.4 Existing Environmental Problems

Although the aforementioned cultural heritage is protected under legislation, impacts can still occur as a result of development.

Development on sites adjoining protected monuments, places or structures can adversely impact upon the context of these cultural heritage items in both townscapes and landscapes if unmitigated against.

Previously unknown archaeology can be damaged as a result of development which causes ground disturbance.

Development which involves material alteration or additions to protected structures can detract from the special character of the structure and its setting, and have the potential to result in the loss of features of architectural or historic interest and the historic form and structural integrity of the structure are retained.

Encouraging and facilitating the accommodation of growth on brownfield sites will contribute to mitigating a number of the adverse impacts associated with greenfield development, however, brownfield development has the potential to significantly adversely impact upon cultural heritage - both archaeological and architectural - if unmitigated against. These impacts are most likely in heritage towns.

### 3.8.5 Evolution of Cultural Heritage in the Absence of a CDP

In the absence of a CDP for Kilkenny, development would have no guidance as to where to be directed and planning applications would continue to be assessed on an individual basis with cultural heritage protected under a number of strategic actions relating to archaeological and architectural protection. Cultural heritage would be impacted upon by the nature of permitted applications.

## 3.9 Landscape

### 3.9.1 Introduction

Landscapes are areas which are perceived by people and are made up of a number of layers:

landform, which results from geological and geomorphological history; landcover, which includes vegetation, water, human settlements, and; human values which are a result of historical, cultural, religious and other understandings and interactions with landform and landcover.

### **3.9.2 Landscape Character Units**

The Landscape Appraisal of County Kilkenny subdivides the County into twenty three distinct landscape character units (Figure 3.14) each containing an area of land with similar character-contributing elements such as slope, vegetation and landuse. The appearance of the landscape is relatively uniform within each character unit. Landscapes of note include the Nore, Barrow, Suir and Kings River Valleys, Castlecomer Plateau and the Slieveardagh Hills (CAAS, 2003)<sup>19</sup>.

### **3.9.3 Landscape Sensitivity, Robustness and Designated Scenic Views**

As well as defining distinct landscape character units, the 2003 Appraisal identifies specific components as sensitivities in the County (Figure 3.15) - these sensitivities reduce the ability of the landscape to accommodate change or intervention without suffering unacceptable effects to character and values.

Areas where enclosing topography, screening vegetation and/or existing development are present generally have a high potential to absorb new development while areas of elevated topography, with low growing or sparse vegetation and little existing development generally have a low potential to absorb new development.

Sensitive components are defined by linear environmental features such as the shores of the main water bodies and the ridges or skylines of mountains and hills. Major skylines are visible over a wide area (any area will be visible against the skyline if viewed from a lower elevation). Such linear shores or skylines are conspicuous features of the natural landscape to which the eye is drawn because of strong contrasts of

form and colour where there is contact between the land and sky or water. Therefore, they represent sensitive features on the landscape as any development on or in the vicinity of shores or skylines has the potential to affect the visual integrity of the surrounding environment.

In addition to showing landscape sensitivity and robustness factors Figure 3.15 shows designated scenic views which are protected from the effects of development under the current County Development Plan.

### **3.9.4 Landscape Policy Areas**

With regard to, inter alia, both the landscape character units and the sensitive and robustness factors, the Landscape Appraisal groups together character units into Policy Areas which provide for the guidance of development across the County. There are four Landscape Policy Units in County Kilkenny (Figure 3.16).

#### **3.9.4.1 Uplands Policy Area 1**

These distinctive areas of the County form a single large policy unit due to the similar visual characteristics. These include undulating topography, areas of low-growing vegetation, steep slopes and prominent ridgelines.

These areas are conspicuous when seen from lowland areas. However, these character units also have areas of 'internal' visual robustness (due to high degree of enclosures) despite 'external' visual vulnerability - due to elevation, ridgelines and steep slopes. Therefore, within the upland areas mixed robustness/vulnerability zones can be found, depending on configuration and topography.

#### **3.9.4.2 Lowlands Policy Area 2**

The lowland plains of County Kilkenny principally comprise fertile lands with relatively high levels of local population and intensive land management. The slope and topography of such units occurs in a shallow/gradual transition; the area is generally characterised by flowing terrain and low vegetation. Concentrations of tillage lands in this lowland area tend to be characterised by extensive views across large fields with low and highly maintained hedges.

<sup>19</sup> CAAS (2003) *Landscape Appraisal of County Kilkenny* Kilkenny: Kilkenny County Council



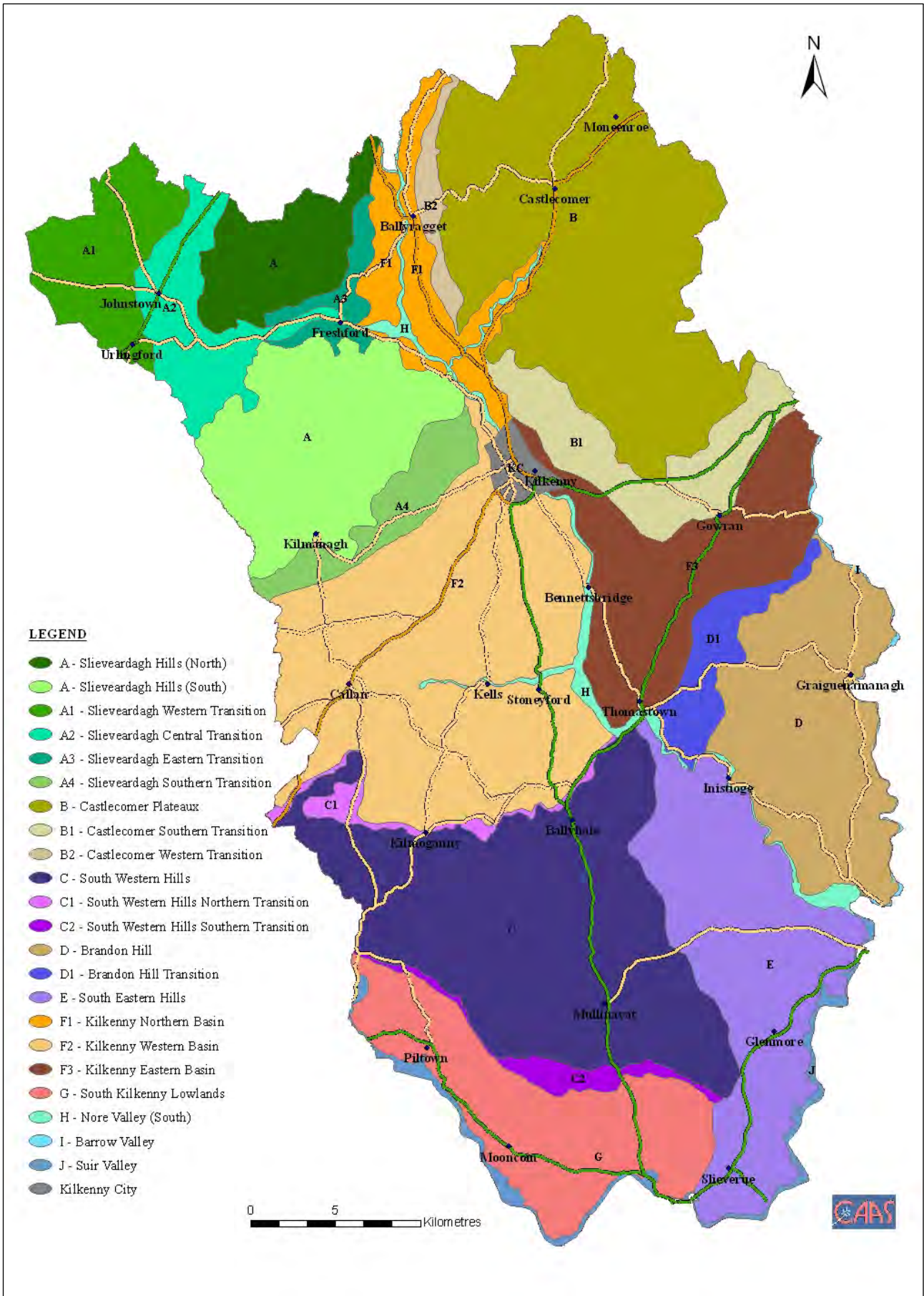


Figure 3.14 Landscape Character Areas



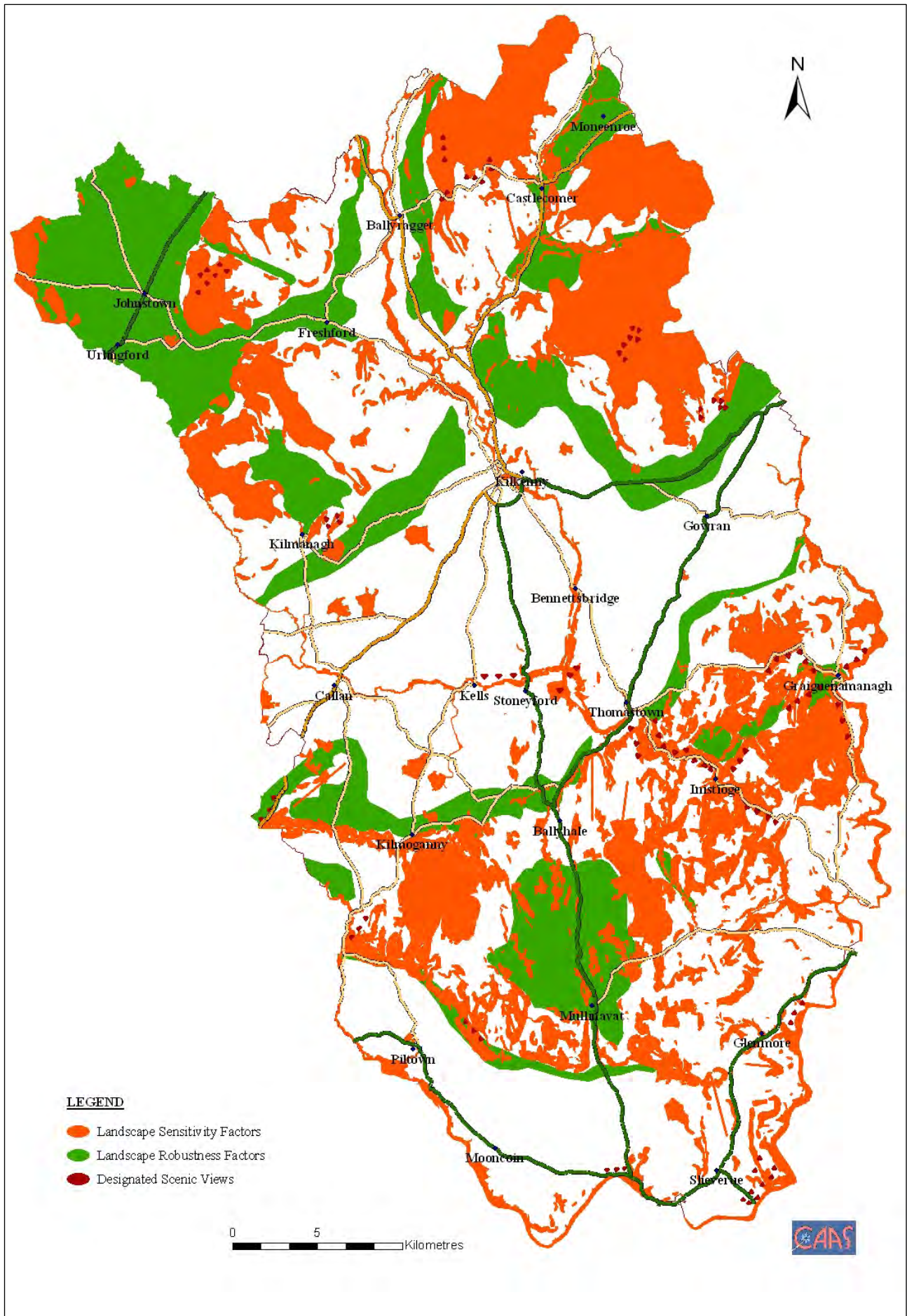


Figure 3.15 Landscape Sensitivity and Robustness Factors and Designated Scenic Views

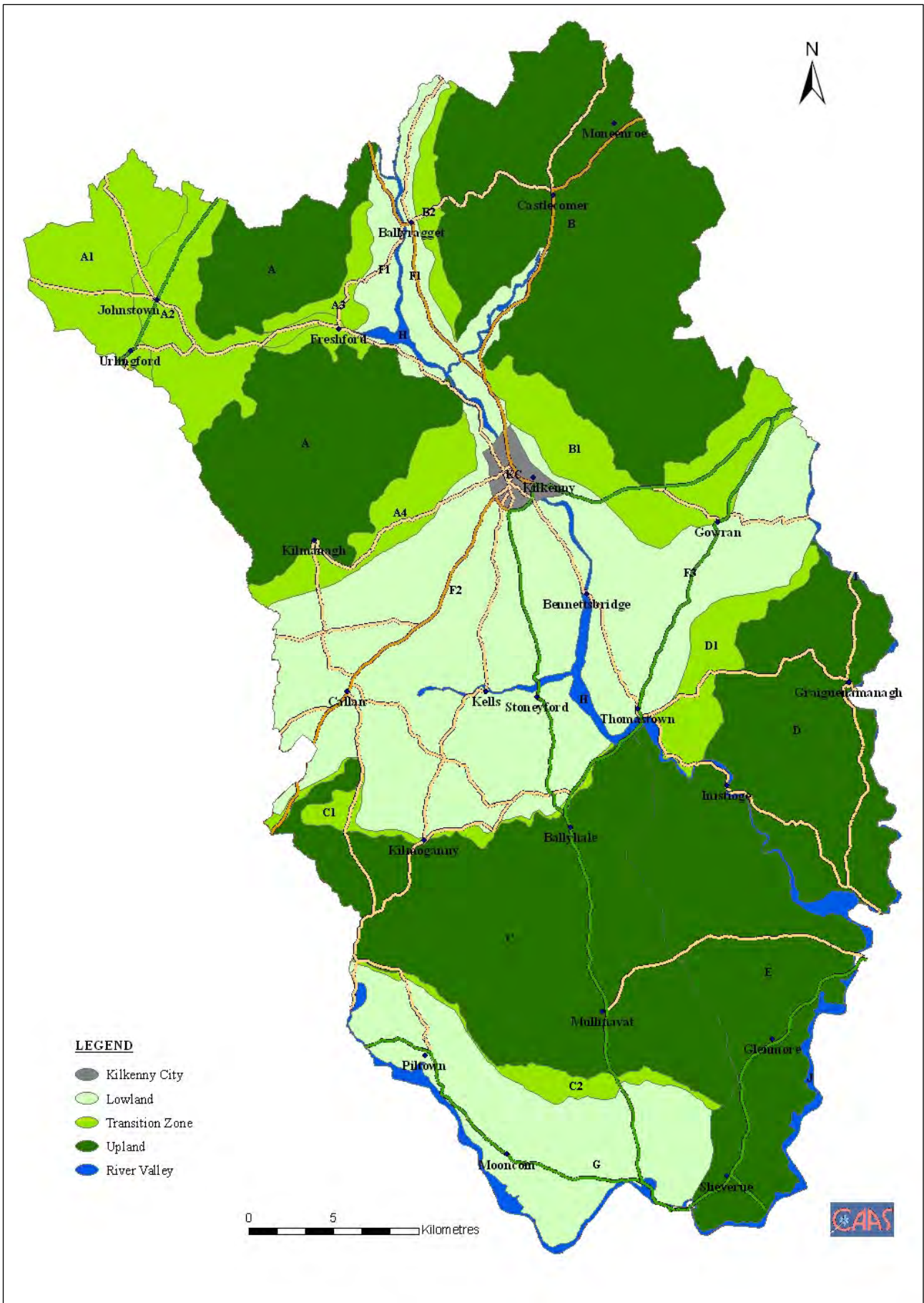


Figure 3.16 Landscape Policy Areas

### **3.9.4.3 River Valleys Lowlands Policy Area 3**

River valley areas represent potentially vulnerable linear landscape features, as they are often highly distinctive in the context of the general landscape. However, landscape sensitivities are often very localized or site-specific within this unit. The river valley landscape is composed by 3 main areas:

- Floodplain slopes. Such slopes are often steep areas of mature vegetation.
- Floodplains levels. Such areas tend to be characterized by smooth terrain, mixed land uses and open views.
- Riverbanks. Vegetation generally occurs along the riverbanks, often consisting of mature trees and extensive areas of natural vegetation

### **3.9.4.4 Transition Zones Lowlands Policy Area 4**

Transitional areas contain some of the elements of both the upland and lowland areas. This character unit is highly variable over short distances but is generally characterised by poorer drainage, higher water table, lower fertility and/or limited landuse potential, vigorous hedges, many hedgerow trees and lower levels of land management.

Transitional areas may also contain large fields with low hedges and scattered trees. The land is mostly used for stock rearing or some mixed tillage. Blocks of coniferous forestry (both old and new), some new deciduous forestry and some successional woodland on steep also occur within this character unit.

### **3.9.5 Summary of Policy Area Sensitivities**

Landscapes located in the uplands policy areas and river valley policy areas are the most vulnerable in the County and are most sensitive to change. Landscapes located in the lowland policy area are the most robust and are least sensitive to change.

### **3.9.6 Existing Environmental Problems**

An environmental problem with regard to the environmental component of landscape is the

visual impact which occurs in sensitive landscape areas, such as those in river valleys, as a result of developments such as one off housing developments. Such developments, which individually often do not have significant adverse impacts, have the potential to cumulatively and adversely significantly impact upon these sensitive landscapes.

### **3.9.7 Evolution of Landscape in the Absence of a CDP**

It is likely that in the absence of a CDP there would be no framework directing housing developments to appropriate locations and one off housing units applications would increase and as would the potential that sensitive landscapes would be impacted upon.

New windfarm developments would not be directed to the most appropriate locations and would have to be assessed on an application by application basis.

## **3.10 Overlay Mapping of Environmental Sensitivities**

### **3.10.1 Introduction**

In order to identify where most sensitivities in the County occur, a number of the environmental sensitivities described above were weighted and mapped overlapping each other.

Environmental sensitivities are indicated by colours which range from acute vulnerability (red) to high vulnerability (orange) to moderate vulnerability (yellow) and low vulnerability (green). Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development will conflict with these sensitivities and cause environmental deterioration. This is particularly the case where the cumulative development of small-scale projects, such as rural housing, gradually causes a slow deterioration of a resource, such as water quality.

### **3.10.2 Methodology**

A weighting system applied through Geographical Information System (GIS) software



was used in order to calculate the vulnerability of all areas in the County. Equal value is given to all environmental aspects (landscape, water, biodiversity etc.) although a distinction made between the various sensitivity factors of each aspect:

- High sensitivity factors are given a weighting of ten points and include: ecological designations; river basins, groundwater and transitional waters at significant risk; national monuments (entries to the RMP); architectural heritage (entries to the NIAH), and; upland and river valley landscape policy areas.
- Moderate sensitivity factors are given half the weighting of the high sensitivity factors and include river basins, groundwater and transitional waters probably at significant risk as well as lowland landscape policy areas.

The scale of sensitivity for each area of the County corresponds to the sensitivity factors: - 5 points corresponds to one moderate sensitivity factor; 10 points corresponds to two moderate sensitivity factors *or* one high sensitivity factor; 20 points corresponds to four moderate sensitivity factors *or* two moderate sensitivity factors and one high sensitivity factor *or* two high sensitivity factors (and so on).

The scores for each area are added together in order to determine overall vulnerability as is shown on Table 3.10.

Score	Vulnerability Area
5-20	Low
20-30	Moderate
30-40	Vulnerable
40-50	High
50-65	Extreme
> 60	Acute

**Table 3.10 Overall Vulnerability Areas**

### 3.10.3 Mapping

Figure 3.17 is an overlay of environmental sensitivities with all environmental factors given equal weight.

The weighting system used for Figure 3.18 assumes that the public perceives landscape sensitivities to be the most significant

environmental sensitivities (consequently these factors are given double the rating of other factors). Similarly Figure 3.19 assumes that the public perceives ecological sensitivities to be the most significant.

### 3.10.4 Quantification of Sensitivities

Table 3.11 quantifies the area of the County which falls under each of the vulnerability area classifications. It is noted that the majority of lands are classified, under this weighting system, as being of a low or moderate vulnerability with relatively smaller areas classified as being vulnerable, high or extreme. None of the County is classified as being acute.

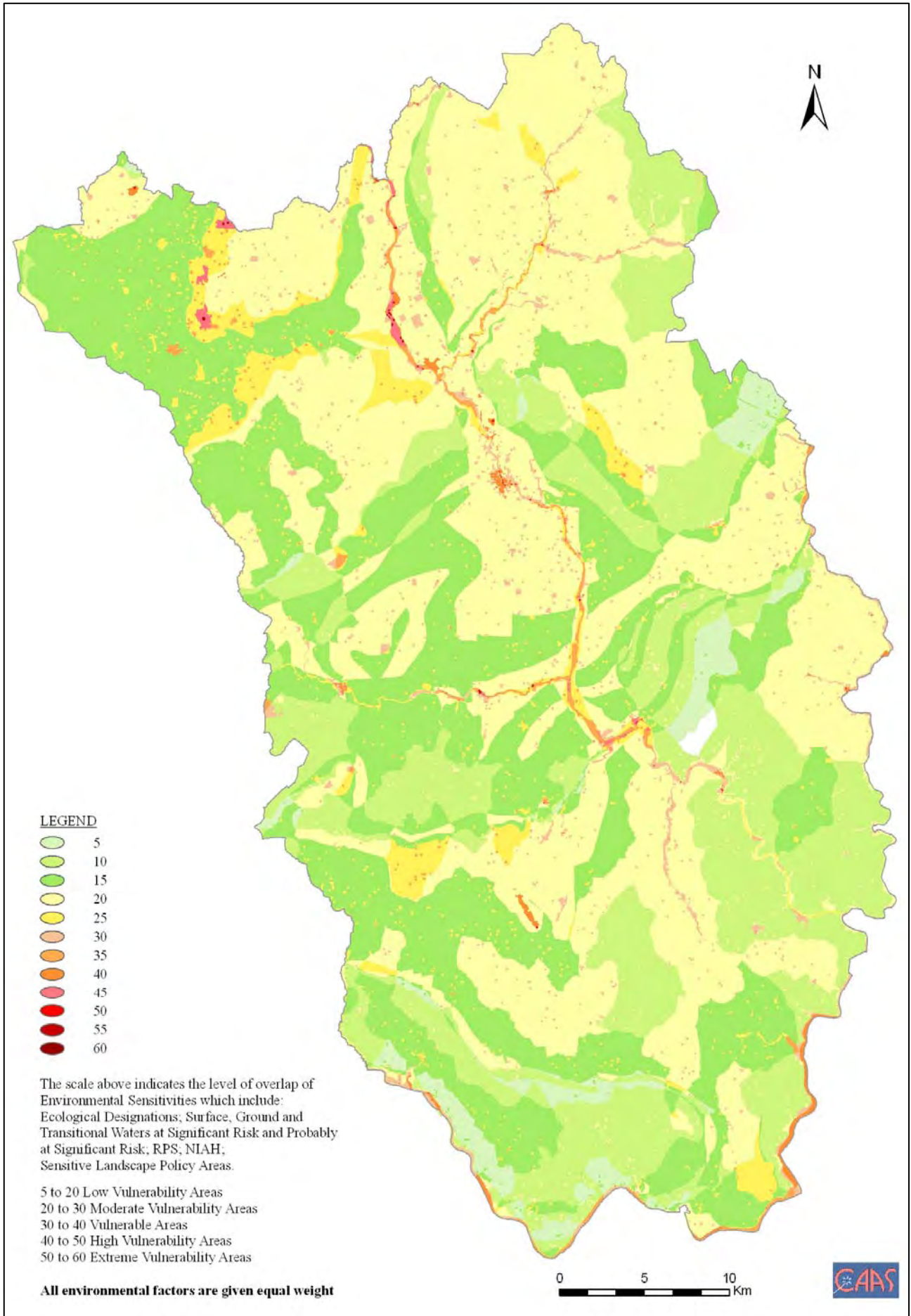
Vulnerability Area	Area (km <sup>2</sup> )
Low	1099.56
Moderate	903.93
Vulnerable	56.93
High	11.50
Extreme	0.45
Acute	0

**Table 3.11 Classification and Quantification of Environmentally Vulnerability Areas in County Kilkenny**

### 3.10.5 Limitations

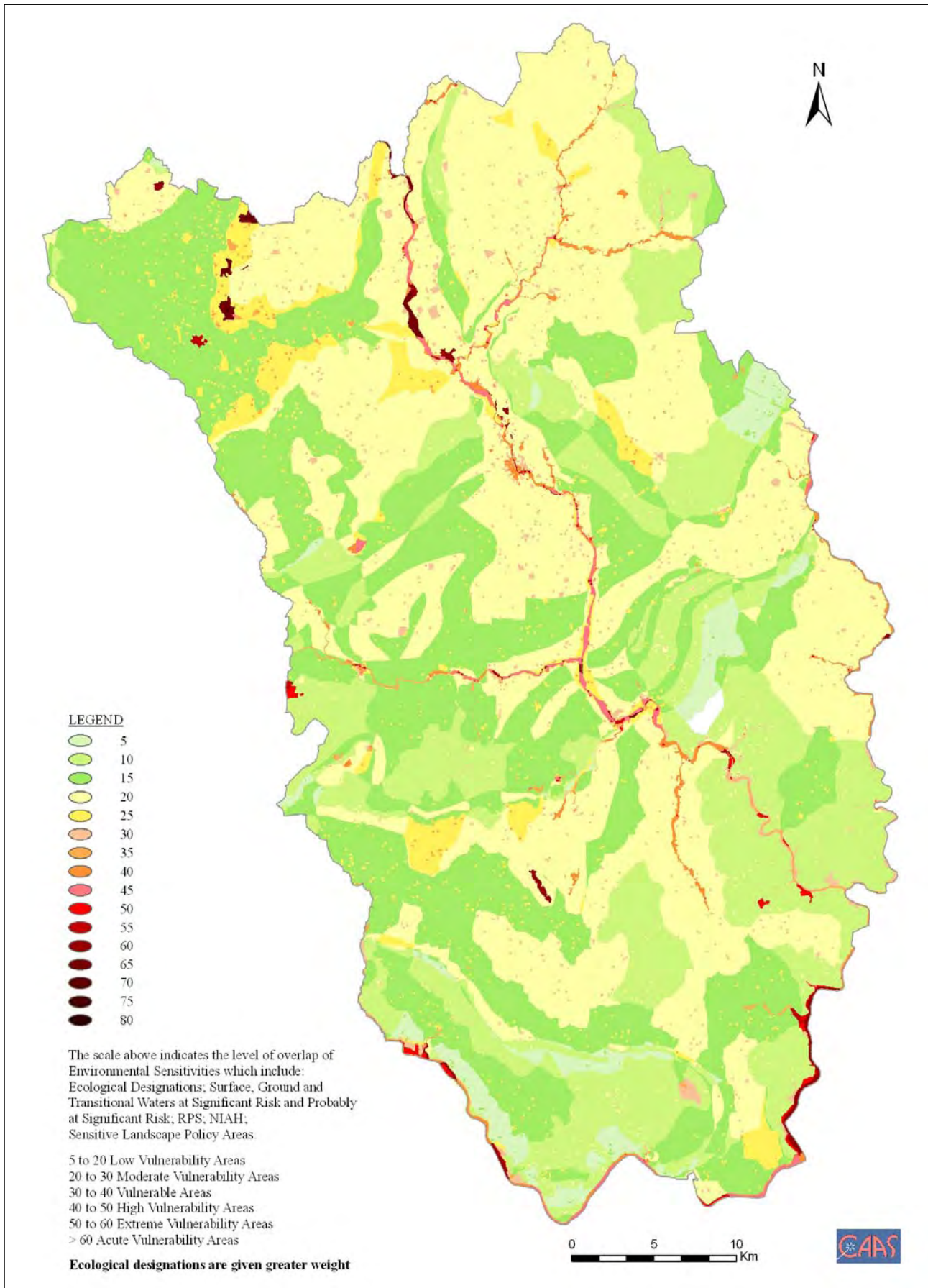
It is noted that there are elements of subjectivity to the weighting systems used in this section.

However, it is also noted that efforts were made to be as objective as possible - for Figure 3.17 each factor was given an equal weighting depending on whether it is a *highly* or a *moderately* sensitive factor while for Figures 3.18 and 3.19 an attempt has been made to take account of potential perceptions.

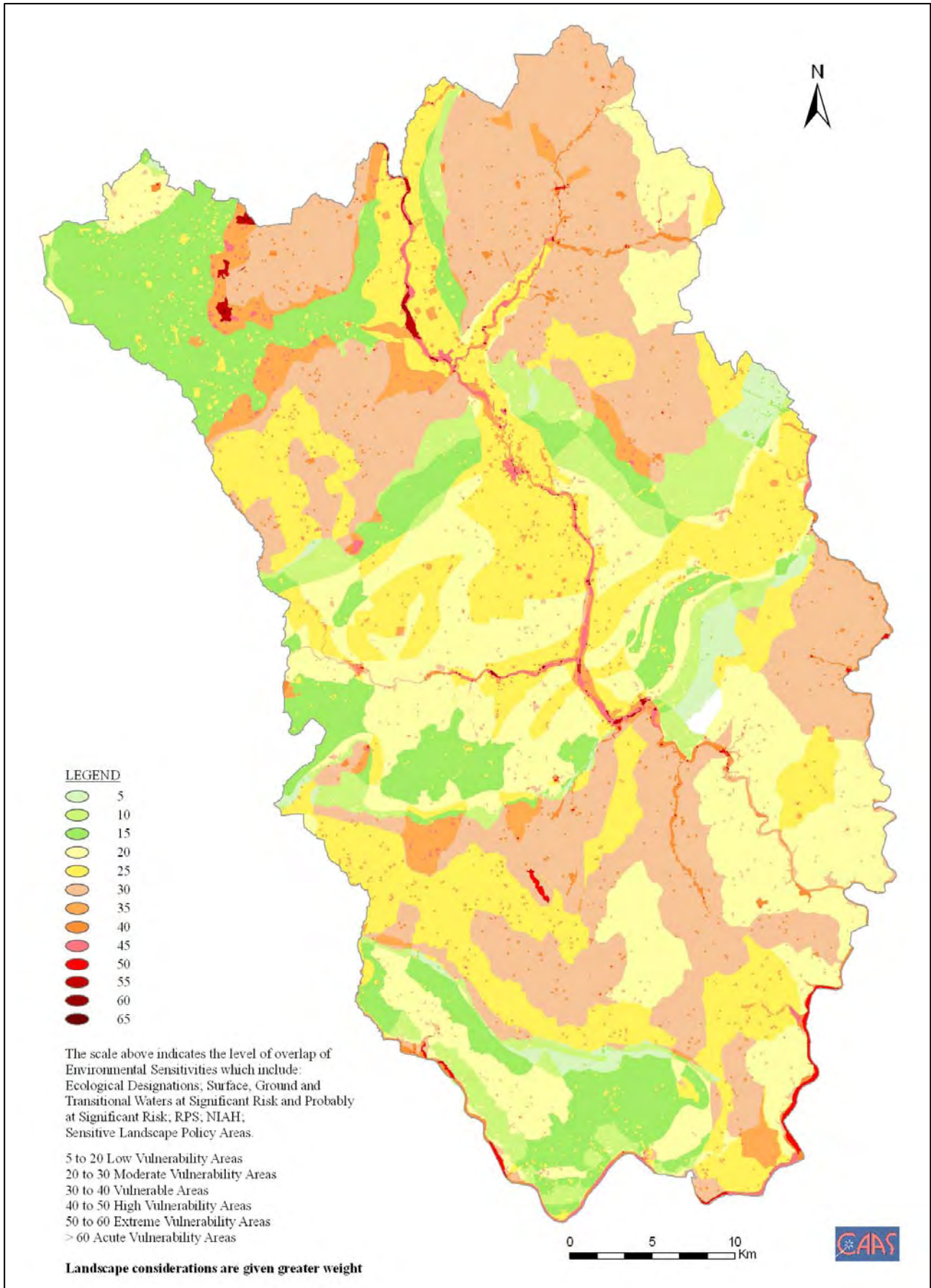


**Figure 3.17 Overlay of Weighted Environmental Sensitivities (all factors given equal weighting)**





**Figure 3.18 Overlay of Weighted Environmental Sensitivities (Ecological Designations given greater weight)**



**Figure 3.19 Overlay of Weighted Environmental Sensitivities (Landscape Constraints given greater weight)**

## Section 4 Strategic Environmental Objectives

### 4.1 Introduction

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the CDP can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the plan. The SEOs are set out under a range of topics and are used as standards against which the development strategies, policies and objectives of the CDP can be evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated.

SEOs are distinct from the objectives of the CDP - although they will often overlap - and are developed from international, national and county policies which generally govern environmental protection objectives. Such policy includes that of various European Directives which have been transposed into Irish law and relevant other Irish environmental legislation all of which are intended to be implemented at county level in Kilkenny and integrated into any plan for the County.

The SEA Directive requires that the evaluation of plans be focused upon the relevant aspects of the environmental characteristics of areas likely to be significantly affected. In compliance with this requirement, SEOs have been developed for the relevant environmental components of this SEA. Focus has been developed throughout the SEA, from the scoping stage to the compilation of the existing environmental baseline. Most attention has been given to environmental components which are likely to be impacted as a result of implementation of a CDP.

A number of SEOs are linked to indicators which facilitate the monitoring of the CDP as well as to targets which the CDP can help work towards.

The primary source used in formulating the SEOs was Table 4B of the SEA Guidelines (DEHLG, 2004)<sup>20</sup>. This list has been amended to give affect to objectives that are considered relevant to this CDP. The use of SEOs, although not a statutory requirement, does fulfil

<sup>20</sup> Department of the Environment, Heritage and Local Government (2004) *Implementation of SEA Directive (2001/42/EC): Guidelines for Regional Authorities and Planning Authorities* Dublin: Government of Ireland.

obligations set out in Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No. 436 of 2004).

### 4.2 Biodiversity, Flora and Fauna

#### 4.2.1 Convention on Biological Diversity 1992 and National Biodiversity Plan 2002

The United Nations Convention on Biological Diversity 1992 requires the promotion of the conservation and sustainable use of biodiversity.

The preparation and implementation of Ireland's National Biodiversity Plan (DAHGI, 2002)<sup>21</sup> complies with an obligation under the Convention. The overall goal of the Plan is to secure the conservation, including where possible the enhancement and sustainable use of biological diversity in Ireland and to contribute to conservation and sustainable use of biodiversity globally. Objectives following on from this goal are to:

- Conserve habitat diversity, including all sites of special biodiversity importance;
- Conserve species diversity;
- Conserve genetic diversity, both wild and domesticated;
- Contribute to the conservation and sustainable use of biodiversity and to advancing other obligations of the CBD in the EU, regionally and internationally.

#### 4.2.2 Designated Ecological Sites

##### 4.2.2.1 Special Areas of Conservation

Special Areas of Conservation (SACs) are designated and protected under the under the Habitats Directive 1992 (92/43/EEC) due to their conservation value for habitats and species of importance in the European Union.

<sup>21</sup> Department of Arts, Heritage, Gaeltacht and the Islands (2002) *National Biodiversity Plan* Dublin: Government of Ireland

The habitats and species occurring SACs<sup>22</sup> are protected from effects of development occurring outside their boundaries under Section 18 "Prohibition of works on lands outside a European site" of the European Communities (Natural Habitats) Regulations 1997. The Regulations require that where a development is proposed to be carried out, on any land that is not within a protected site and is liable to have an adverse impacts on the protected site in question, including direct, cumulative and indirect impacts, an appropriate assessment, which conforms to an environmental impact assessment, of the likely effects of the proposed development on the site is undertaken. Depending on the conclusions of this assessment such development may be refused planning permission.

The Habitats Directive seeks to establish Natura 2000, a network of protected areas throughout the EU. It is the responsibility of each member state to designate SACs to protect habitats and species, which, together with the SPAs designated under the 1979 Birds Directive, form Natura 2000.

#### **4.2.2.2 Natural Heritage Areas**

Natural Heritage Areas are designated and protected due to their national conservation value for ecological and/or geological/geomorphological heritage under the Wildlife (Amendment) Act 2000<sup>23</sup>.

#### **4.2.2.3 Statutory Nature Reserves**

Statutory Nature Reserves are state-owned land, inland waters or foreshore areas forming the habitat of a species or community of flora and fauna of scientific interest or forming part of an ecosystem of scientific interest, which would benefit from protection measures, established under the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000. Statutory Nature Reserves are protected under Ministerial order<sup>24</sup>.

### **4.2.3 Ecological Networks**

Development in County Kilkenny has led to loss of ecological networks and connectivity as identified in the description of County Kilkenny's Baseline Environment.

The Habitats Directive aims to ensure the conservation of certain natural habitats and species which are at favourable conservation status. Article 10 of the Habitats Directive also recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. The Directive requires that ecological connectivity and areas of ecological value outside the network of designated ecological sites are maintained and it recognises the need for the management of these areas through land use planning and development policies.

### **4.2.4 Aquatic Biodiversity and Flora and Fauna**

The description of County Kilkenny's Baseline Environment has identified the County's rich aquatic biodiversity resources.

Certain aquatic species occurring in the County are protected under Annex II of the Habitats Directive and the Nore is designated as Salmonid water under the Quality of Salmonid Waters Regulations 1988. Most of the channels and corridors of the Nore, Suir and Barrow rivers - together with some of their tributaries - are designated as SACs and/or pNHAs. These riverine sites comprise the bulk of County Kilkenny's designated ecological areas.

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<sup>22</sup> See Section 3.2.1 for further details

<sup>23</sup> See Section 3.2.2 for further details

<sup>24</sup> See Section 3.2.3 for further details



#### 4.2.5 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to the County's environmental baseline and the objectives of the above strategic actions.

<b>SEO B1:</b>	To avoid loss of relevant habitats, geological features, species or their sustaining resources in designated ecological sites
Indicator B1:	Percentage of relevant habitats and designated ecological sites lost as a result of implementation of the CDP
Target B1:	No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the CDP

<b>SEO B2:</b>	To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources, in designated ecological sites by development within or adjacent to these sites
Indicator B2:	Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP
Target B2:	No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP

<b>SEO B3:</b>	To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity
Indicator B3:	Percentage loss of connectivity between areas of local biodiversity as a result of implementation of the CDP – as evidenced from a resurvey of CORINE mapping and any habitat mapping which is produced
Target B3:	No ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity to be lost without remediation as a result of implementation of the CDP



Note: the impact of implementing the CDP on aquatic biodiversity and flora and fauna is influenced by impacts upon the quality of surface, estuarine and coastal waters which relate to SEO's W1, 2, and 3.

### 4.3 Population and Human Health

The impact of implementing the CDP on human health is determined by the impacts which the CDP has upon environmental vectors including water, soil and air.

<b>SEO HH1:</b>	To protect human health from hazards or nuisances arising from exposure to incompatible landuses
<b>Indicator HH1:</b>	Occurrence (any) of a spatially concentrated deterioration in human health
<b>Target HH1:</b>	No spatial concentrations of health problems arising from environmental factors

## 4.4 Soil

### 4.4.1 Proposal for a Soil Framework Directive

To date, there is no legislation which is specific to the protection of soil resources. However, there is currently an EU Thematic Strategy on the protection of soil which includes a proposal for a Soil Framework Directive which proposes common principles for protecting soils across the EU.

Article 5 of the proposed Directive states that, for the purposes of preserving the various functions of soil; sealing, the development of artificial surfaces on top of soil resources, should be limited. The proposed Directive suggests that this may be achieved through rehabilitating brownfield sites, thus reducing the depletion of greenfield sites. The proposed Directive also states soil should be used in a sustainable manner which preserves its capacity to deliver ecological, economic and social services, while maintaining its functions so that future generations can meet their needs.

### 4.4.2 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to the environmental baseline and the proposed Soil Directive.

<b>SEO S1:</b>	Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands <sup>25</sup>
<b>Indicator S1:</b>	Area of brownfield land developed over the plan period
<b>Target S1:</b>	Reduced availability of brownfield land (subject to availability on the open market, the demand for such land and the ability for such lands to be sustainably re-used within the provisions of the CDP) at the end of the CDP lifespan

<b>SEO S2:</b>	To permit sustainable quarrying of non-renewable sand, gravel, rock deposits
<b>Indicator S2:</b>	Proportion of excavated area returned to productive use.
<b>Target S2:</b>	All extraction sites to have progressive rehabilitation programmes in place with agreed rehabilitation targets

Note: the impact of implementing the CDP on soil quality is influenced by impacts upon the quality of surface and ground waters which relate to SEOs W1 and 2.

<sup>25</sup> SEO S1 was identified as conflicting with SEOs CH1 and CH2

## 4.5 Water

### 4.5.1 The WFD 2000

#### 4.5.1.1 Overview

The basis of the WFD is described in Section 3.5.2. As described in the environmental baseline description for County Kilkenny, the South Eastern River Basin District's (SERBD) Characterisation Report includes a risk assessment which classifies waters in the SERBD as being either at risk or not at risk in the context of the Directive's objectives. Water bodies placed in the "at risk" category will need improvement to achieve the required status while water bodies in the "probably at risk" category are likely to need improvement in order to achieve the required status.

#### 4.5.1.2 Surface Waters

Good status as defined by the Water Framework Directive equates to approximately Q4 in the national scheme of biological classification of rivers as set out by the EPA.

#### 4.5.1.3 Quality Standards and Threshold Values for Ground Water

Detailed provisions to achieve the aims of the WFD for ground water have been presented in a Groundwater Daughter Directive (Directive 2006/118/EC on the protection of groundwater against pollution and deterioration).

This Directive sets up environmental objectives of good groundwater quantitative and chemical status, as well as ensuring a continuity to the 1980 Groundwater Directive (Directive 80/68/EEC on the protection of groundwater against pollution caused by dangerous substances) which is due to be repealed under the WFD by the end of 2013.

Article 3 of the 2006 Directive required that the assessment of the chemical status of groundwater use both quality standards identified in Annex I of the Directive and threshold values to be set by individual member states.

Groundwater quality standards are environmental quality standards expressed as the concentration of a particular pollutant, group of pollutants or indicator of pollution in groundwater, which should not be exceeded in

order to protect human health and the environment. Annex I of the Directive sets standards for two pollutants: Nitrates - 50mg/l - and; Active substances in pesticides<sup>26</sup>, including their relevant metabolites, degradation and reaction products - 0,1 µg/l and 0,5 µg/l (total<sup>27</sup>).

Irish groundwater threshold values<sup>28</sup> are currently in the process of being set by the EPA.

#### 4.5.1.4 Estuarine Waters

Good status of estuarine waters as defined by the Water Framework Directive can be attained by transitional waters through the achievement of *unpolluted* status in the Assessment of Trophic Status of Estuaries and Bays in Ireland (ATSEBI) System which is used by the EPA in order to classify the quality status of transitional waters.

#### 4.5.1.5 Bathing Water

It is noted that although County Kilkenny does not have a coastline, there exists three monitored coastal bathing waters in Waterford Harbour into which the Rivers Barrow and Suir after draining County Kilkenny.

EU Mandatory and Guide levels for bathing waters are set out in the 1976 Bathing Water Directive (76/160/EEC) as implemented into Irish law by the Quality of Bathing Water Regulations (SI No. 155 of 1992).

Mandatory Values are values which must be observed if the bathing area is to be deemed

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<sup>26</sup> 'Pesticides' means plant protection products and biocidal products as defined in Article 2 of Directive 91/414/EEC and in Article 2 of Directive 98/8/EC, respectively.

<sup>27</sup> 'Total' means the sum of all individual pesticides detected and quantified in the monitoring procedure, including their relevant metabolites, degradation and reaction products.

<sup>28</sup> Threshold values are to be established by Member States for all pollutants and indicators of pollution which characterise groundwater bodies classified as being at risk of failing to achieve good groundwater chemical status under the WFD. Threshold values are required to be established in a way that, should the monitoring results at a representative monitoring point exceed the thresholds, this will indicate a risk that one or more of the conditions for good groundwater chemical status - with regard to the ability of groundwater to support human uses and with regard to waters used for the abstraction of drinking water - are not being met.

compliant with the Directive. Compliance with guide values exceeds guidance with mandatory values and can be regarded as quality objectives which bathing sites should endeavour to achieve.

A new Bathing Water Directive (2006/7/EC) - which entered into force in March 2008 - revises the 1976 Directive with the purpose of: preserving, protecting and improving the quality of the environment and protecting human health by complementing the Water Framework Directive (2000/60/EC). The 2006 Bathing Water Directive is implemented by the Bathing Water Quality Regulations 2008 (SI No. 79) of 2008.

#### 4.5.2 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to County Kilkenny's environmental baseline and the objectives of the above strategic actions.

<b>SEO W1:</b>	To maintain and improve, where possible, the quality of rivers
Indicator W1:	Biotic Quality Rating (Q Value)
Target W1i:	To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015
Target W1ii:	To improve biotic quality ratings, where possible, to Q5

<b>SEO W2:</b>	To prevent pollution and contamination of ground water
Indicator W2:	Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
Target W2:	Compliance with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC

<b>SEO W3:</b>	To maintain and improve, where possible, the quality of estuarine waters
Indicator W3:	Trophic Status (ATSEBI)
Target W3:	To maintain or to improve trophic status, where relevant, to unpolluted in line with the requirement to achieve good water status under the Water Framework Directive, by 2015

<b>SEO W4:</b>	To prevent pollution and contamination of bathing water
Indicator W4:	Mandatory and Guide values as set by Directive (76/160/EEC)
Target W4:	To achieve - as a minimum - Mandatory values, and where possible to achieve Guide values as set by Directive (76/160/EEC)

## 4.6 Air and Climatic Factors

In order to reduce greenhouse gas emissions the internationally agreed Kyoto Protocol established emissions reduction targets for developing countries. Ireland's emission target for greenhouse gases is to limit the increase in their combined emissions during the five-year period 2008-2012 to 13 per cent above 1990 levels.

### 4.6.1 SEOs, Indicators and Targets

The following SEO, Indicators and Targets have been developed with regard to the environmental baseline description and the objectives of the above strategic action.

<b>SEO A1:</b>	To minimise increases in travel related greenhouse emissions to air
Indicator A1i <sup>29</sup> :	Percentage of population within the plan area travelling to work or school by public transport or non-mechanical means
Target A1i:	An increase in the percentage of the population travelling to work or school by public transport or non-mechanical means
Indicator A1ii <sup>30</sup> :	Average distance travelled to work or school by the population of the County
Target A1ii:	A decrease in the average distance travelled to work or school by the population of the County

## 4.7 Material Assets

### 4.7.1 Infrastructural Programmes

In order to accommodate recent and future growth programmes of waste water treatment plants and networks, water supply

<sup>29</sup> As measured by the Central Statistics Office

<sup>30</sup> As measured by the Central Statistics Office

infrastructure, transport infrastructure and powerlines etc need to be implemented. These programmes are likely to have significant adverse impacts on the environment if not mitigated. These programmes would require environmental assessments to be carried out on them in order to prevent such impacts.

### 4.7.2 Waste Water

The treatment of wastewater is governed by the Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC) transposed into Irish law by the Urban Waste Water Treatment Regulations 2001 (SI 254 of 2001). The Directive aims to protect the environment from the adverse effects of the wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. Also the treatment of waste water is relevant to the Water Framework Directive which requires all public bodies, including KCC, to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and bring polluted water bodies up to good status by 2015.

### 4.7.3 Drinking Water

Drinking water quality values set by the European Communities (Drinking Water) Regulations, 2000 and trigger values set by the Geological Survey of Ireland (1999)<sup>31</sup> are integrated into SEO W2.

### 4.7.4 Transport

Transport issues have been determined to be more appropriately assessed at higher levels in the land use and environmental protection hierarchies, at national and regional levels by the National Roads Association, as well as at programme and individual project levels.

Issues relating to traffic are required to be evaluated and considered at project and programme level with regard to the preparation of, for example, Environmental Impact Assessments for new road projects.

<sup>31</sup> Geological Survey of Ireland (1999) *Protocol for the delineation of Source Protection Zones (including Nitrate Vulnerable Zones) around public groundwater supply sources* Dublin: Geological Survey of Ireland

#### 4.7.5 SEOs, Indicators and Targets

The following SEO, Indicator and Target have been developed with regard to County Kilkenny's environmental baseline and the objectives of the above strategic actions.

<b>SEO M1:</b>	To serve new development under the CDP with appropriate waste water treatment
<b>Indicator M1:</b>	Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP
<b>Target M1:</b>	No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP

### 4.8 Cultural Heritage

#### 4.8.1 Archaeological Heritage

As identified as part of County Kilkenny's environmental baseline, there is a rich archaeological heritage in the County.

There are many entries in the Record of Monuments and Places for County Kilkenny which are legislated for under Section 12 of the National Monuments (Amending National Monument Acts from 1930 to 1994) Act, 1994.

There also a number of Major Sites of Archaeological importance and National Monuments which are the subject of Preservation Orders in state

Any direct impacts on Major Sites of Archaeological importance require the consent of the Minister for the Environment Heritage and Local Government under Section 14 of the National Monuments Act 1930 as amended by Section 5 of the National Monuments Act 2004.

#### 4.8.2 Architectural Heritage

In addition to its archaeological heritage, County Kilkenny has a rich architectural heritage which

is displayed by the number of entries in the Record of Protected Structures (RPS) for the County. RPSs are legislated for under Section 51 of the Planning and Development Act 2000.

#### 4.8.3 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to County Kilkenny's environmental baseline and the above strategic actions.

<b>SEO CH1:</b>	To protect the archaeological heritage of County Kilkenny with regard to: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.
<b>Indicator CH1:</b>	Number of unauthorised developments occurring over the lifespan of the CDP which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.
<b>Target CH1:</b>	No unauthorised developments occurring over the lifespan of the CDP which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.



**SEO CH2:** To preserve and protect the special interest and character of County Kilkenny's architectural heritage with regard to: entries to the Record of Protected Structures; Architectural Conservation Areas; entries to the National Inventory of Architectural Heritage, and; the context of the above within the surrounding landscape where relevant.

**Indicator CH2:** Number of unauthorised developments occurring over the lifespan of the CDP which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.

**Target CH2:** No unauthorised developments occurring over the lifespan of the CDP which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.

Sensitive landscapes in County Kilkenny have been identified within the environmental baseline description of the County. Vulnerable features which have been identified include the coastline, skylines, river banks and lake shorelines.

#### 4.9.2 SEOs, Indicators and Targets

The following SEO, Indicator and Target have been developed with regard to County Kilkenny's environmental baseline and the above strategic action.

**SEO L1:** To avoid significant adverse impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views

**Indicator L1:** Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views - resulting from development which is granted permission under the CDP

**Target L1:** No developments permitted which result in avoidable impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views - resulting from development which is granted permission under the CDP

## 4.9 Landscape

### 4.9.1 Sensitive Landscapes & Vulnerable Features

Ireland signed and ratified the European Landscape Convention in 2002 with the Convention entering into force in Ireland from in 2004. The aims of the Convention include: to conserve and maintain the significant or characteristic features of a landscape, justified by its heritage value derived from its natural configuration and/or from human activity; to harmonise changes in the landscape which are brought about by social, economic and environmental processes, and to enhance landscapes.

## Section 5 A County Development Plan for Kilkenny

### 5.1 Introduction

Under Section 9 of the Planning and Development Act 2000, every planning authority must make a development plan, setting the framework for all future development in the planning authority's area for the stated period, for the whole functional area of the authority every six years. The plan consists of a written statement and a plan(s) indicating the development objectives of for the area in question. It is required to set out an overall strategy for the proper planning and sustainable development of the area in question. It is in this context in which Kilkenny County Council has prepared the County Development Plan to which this report refers.

The Kilkenny County Development Plan (CDP), with which this report should be read in conjunction with, has been prepared in response to the aforementioned requirement, in response to the development pressures facing County Kilkenny and the need to provide a positive framework for the future development of the County that is consistent with the policies and objectives contained in higher level forward planning strategic actions such as the National Spatial Strategy 2002 - 2020 and the South East Regional Planning Guidelines 2004 - 2020.

The CDP is intended to provide for the proper planning and sustainable development for County Kilkenny for a duration of six years from the date on which it is adopted. It consists of a written statement and maps which give a graphic representation of the proposals of the Plan, indicating land use and other development standards together with various local objectives.

### 5.2 Structure of the CDP

The CDP consists of a written statement and accompanying maps and includes policies, strategies and actions for the County at large.

The written statement is made up of ten chapters (which contain policies and actions in relation to specific policy areas) and a number of appendices. Each chapter is not a stand-alone chapter, but should be read in conjunction with all other chapters and policies.

In assessing any development in the County, the overall context will be informed by all relevant policies, including the settlement strategy, housing, community, economic, heritage and infrastructure considerations, underpinned by the County Vision and Strategic Goals. Therefore, no one policy takes precedence over another, but rather all policies converge, founded as they are on the goal of sustainable development.

### 5.3 Vision and Strategic Goals

The CDP vision is to advance the position of the County as a centre of excellence for creativity in all sectors whilst ensuring the continued protection and enhancement of the county's magnificent built and natural heritage, its thriving cultural, sporting and artistic base and its strong and dynamic services economy through the promotion of sustainable economic, social and cultural development.

The strategic goals identified within the CDP are as follows:

- To provide the highest quality living environments possible, in both urban and rural areas to all members of our community;
- To sustain rural communities, by supporting agriculture, tourism and other rural based economic activity & promoting balanced development of rural settlements;
- In conjunction with the Kilkenny City & Environs Development Plan to provide for a sustainable spatial development strategy to guide the location of development within the County; and,
- To protect, conserve and enhance the built and natural heritage of County Kilkenny for future generations.

### 5.4 Alternatives

Sections 6 and 7 of this report identify, describe and evaluate different alternatives of how to achieve the overall strategy which is set out for a CDP for Kilkenny taking into account the relevant land use strategic actions (see Section

5.2 below), the SEOs identified in Section 4 as well as the geographical scope of the CDP.

## **5.5 Relevant Forward Planning Strategic Actions**

### **5.5.1 Introduction**

The Kilkenny CDP is nested in a hierarchy of land use forward planning strategic actions. The CDP must be consistent with the objectives of these strategic actions while any programmes or projects which take place in County Kilkenny must be consistent with the CDP.

### **5.5.2 National Spatial Strategy 2000 – 2020**

This National Spatial Strategy (NSS) is a twenty year planning framework designed to achieve a better balance of social, economic, physical development and population growth between regions, adding a spatial dimension to social and economic planning in Ireland. The Strategy provides a national framework for regional, county and town plans in relation to policy guidance for the long-term development of Ireland.

In a regional context the NSS aims to boost the performance of strategically placed growth centres or gateways, acting at the national level to drive development over the urban and rural areas they influence and support more balanced patterns of development. Waterford is the gateway which is most likely to influence development in Kilkenny.

At the regional level, a number of strategically located hubs have been identified which will support and be supported by the gateway and act as drivers of local sub-regional development. In the South East region it is envisaged that critical mass will be enhanced through Waterford performing as a gateway, supported by Kilkenny and Wexford as hubs and the three together forming a nationally strategic 'growth triangle'.

The NSS also identifies an important need to support the role of rural towns and villages at the local level, as a focus for investment, economic activity and housing development, which at the same time will support the vitality of wider rural areas. Towns with a population

between 1,500 and 5,000 within the region traditionally served a prosperous agricultural hinterland that generally endowed them with townscapes of high visual quality, compact form and a rich built heritage. Such towns within County Kilkenny include Callan, Graiguenamanagh, Castlecomer and Thomastown. The quality of life attractions and scale of these towns form strong attractions for residential development along with small and medium enterprises.

The NSS recommends these strengths be capitalised on by local authorities through local planning and development promotion activities, with the support of urban renewal and other improvement initiatives, improvements to water services and improved capacity for development through, for example, better access to back-land areas. In this way these smaller towns can offer a distinctive alternative for people attracted to the quality of life such towns can offer.

### **5.5.3 South East Regional Planning Guidelines 2004- 2016**

Ireland is divided into eight regional forward planning regions, Dublin, Midlands, Mid East, Mid West, South East, South West, West and Border, each with its own regional planning authority composed of Elected Members selected by the constituent local government councils. Regional planning authorities are required, under the Planning and Development (Regional Planning Guidelines) Regulations 2003 (S.I. No. 175 of 2003), to draw up regional planning guidelines (RPGs), long term strategic planning frameworks, for their relevant region.

County Kilkenny is located in the South East Regional Authority which has prepared Regional Planning Guidelines 2004–2016 for the South East Region (SERPGs).

The SERPGs give effect to the National Spatial Strategy at the regional level and strengthen local authority development plans by setting out broad regional planning objectives and identifying development roles for different types of urban centres. The typology developed clearly describes the functioning of the different centres and the issues that need to be addressed to achieve the Regional Development Strategy.

The role of Kilkenny City under the SERPGs is to act as a 'Hub', a strategic urban centre that supports and reaches out to wider rural areas of the region that the RPGs are targeting for significant levels of growth.

The SERPGs designate Thomastown as a District Town. However Castlecomer and Callan now also have a population in excess of 1,500 and therefore must be considered as District Towns. District Towns have populations between 1,500 and 5,000 and have a role in driving the development of a particular spatial component of the overall region.

Within the region and below the level of District Town a well-developed network of smaller towns and villages was also identified in the SERPGs that play particularly important role as service/retail/residential centres.

The Plan has been prepared as an implementation mechanism for the Regional Planning Guidelines as it applies to Kilkenny and the Overall Vision and Strategic Goals, Settlement Strategy, policies and objectives have been formulated in response to the Guidelines.

#### **5.5.4 Environmental Protection Objectives**

The CDP is subject to a number of high level national and international environmental protection policies and objectives, including those which have been identified and adopted as Strategic Environmental Objectives in Section 4. The CDP must be consistent with these objectives and implement them at the County level in Kilkenny.

## Section 6 Description of Alternative Plan Scenarios

### 6.1 Introduction

One of the critical roles of SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative strategies for accommodating the future development of the County within the constraints imposed by intrinsic environmental conditions. In this instance the consideration of conceptual alternatives arose during the early stages of plan inception at a workshop with the development plan team. The principal findings are presented in this section.

This section identifies and describes different alternatives of how to achieve the various parts of the vision which is set out for the CDP, taking into account the higher level strategic actions as well as the geographical scope of the Plan.

These alternatives are evaluated resulting in the identification of a preferred alternative in Section 7 while the policies and objectives which are required to realise this alternative are evaluated in Section 8 with mitigation measures proposed in Section 9 which attempt to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the Plan. These mitigation measures have been integrated into the CDP as specific policies and objectives.

### 6.2 Identification and Description of Alternative Scenarios

#### 6.2.1 Introduction

The following describe the range of potential scenarios for the types of planning strategies that could have been adopted for Kilkenny (Note: the National Spatial Strategy for the South East - that includes Kilkenny - is included as a reference point):

#### 6.2.2 Scenario 1 - *Weak Planning*

Development under Scenario 1 (see Figure 6.1) strongly follows market demands with little regard to planning or environmental protection.

Extensive areas of weakly controlled development in rural areas surrounding settlement centres results in the development of Urban Sprawl Areas.

These Urban Sprawl Areas which would develop under Scenario 1 currently display the greatest pressures for development, have rising populations, ready access to good road networks and are within the commuting catchments of Kilkenny and Waterford City as well other large settlements such as Thomastown and Castlecomber.

Across these Urban Sprawl Areas settlement is highly dispersed thereby continuing the weakening of villages and towns.

Demand for the development of wind energy, quarrying and forestry enterprises would be satisfied by favouring applications across the north western and southern areas of the County - where these resources are present or where they can be developed from the existing environment - without regard for the carrying capacity of these bands.

Outside of the Urban Sprawl Areas and resource enterprise zones, residual areas of agriculture and agribusiness remain in the eastern lowlands and to the south east of Castlecomber.

#### 6.2.3 Scenario 2 - Normal Planning

Scenario 2 (see Figure 6.2) represents a responsive regime led by strong, but highly differentiated local economic forces – based primarily on the utilisation of existing natural and cultural resources.

Under Scenario 2 the areas which currently display the greatest pressures for development - the 'Areas under Strong Urban Influence' - are encompassed into two extensive planned settlement zones. One, a corridor, is centred on the Kilkenny City Hub and supports the majority of the County's population and their associated employment, services and infrastructure in a network of high quality settlements. This corridor encompasses Castlecomber in the north of the County, Kilkenny City and its environs



together with Thomastown in the centre of the County as well as various towns and villages including those which lie on the road network connecting Kilkenny City to Carlow Town. The second planned settlement zone covers the northern environs of the Waterford City Gateway and includes Belview Port.

On the County's most fertile and well drained soils - on the eastern lowlands and to the south east of Castlecomber - agriculture undergoes intensification and supporting rural villages strengthen and thrive.

Less productive, marginal agricultural lands, such as the foothills, experience decline. These areas become Rural Transition Zones whereby agriculture is gradually replaced by scrub and trees - either through the development of forestry or through natural colonisation processes.

Wind energy applications are guided by a Wind Energy Development Strategy to areas with sufficient carrying capacity throughout the County.

Extensive areas of natural beauty are sustained in and around Graiguenamanagh and Brandon Hill in the east of the County which sustain recreation and tourism as well as existing agriculture and forestry enterprises.

### **6.2.4 Scenario 3 - Strong Planning**

Scenario 3 (see Figure 6.3) represents a highly regulated environment with very strict enforcement of rural planning guidelines.

The majority of the County's population and their associated employment, services and infrastructure are concentrated in high quality urban environments within existing settlement centres. The outer boundaries of these settlement centres are strictly adhered to, expanding only where necessary and towards the most robust environments.

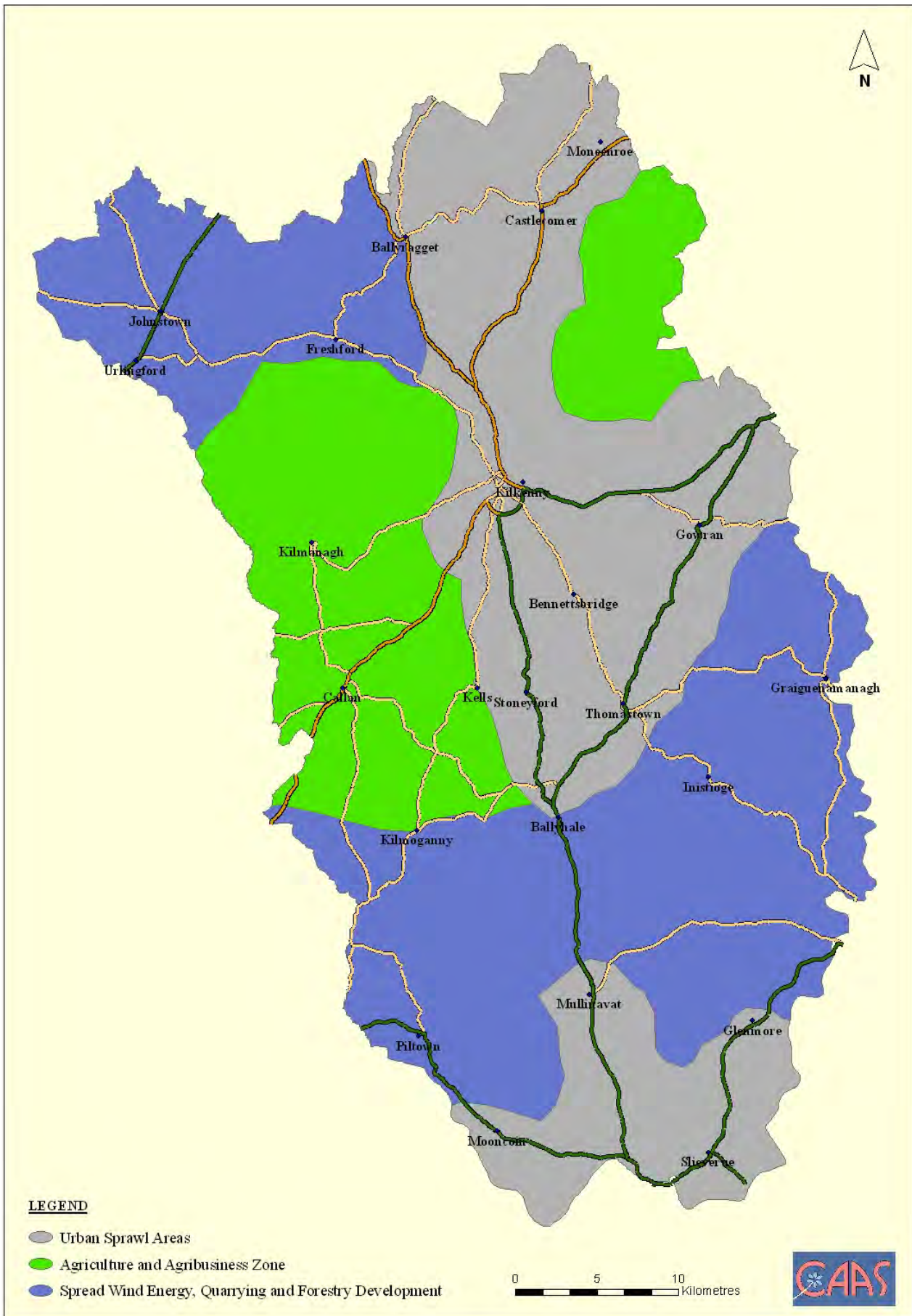
An extensive area of the County is managed and planned as natural amenities subject to strict interpretation of EU Directives. This 'Tourism, Amenity and Resource Conservation' Zone encompasses the valley of the Nore River's during its lower course as well as areas of natural beauty in and around Graiguenamanagh and Brandon Hill.

The east of the County contains designated areas for natural resource enterprises such as forestry, wind energy and mineral extraction.

The south of the County supports agriculture and rural enterprises - based on agri-business, and service functions.

Wind Energy Development is confined to the north west corner of the County in and around the Slieveadaragh Hills.

On the County's most fertile and well drained soils - including those surrounding Kilkenny City - agriculture undergoes intensification.



**Figure 6.1 Scenario 1: Weak Planning**

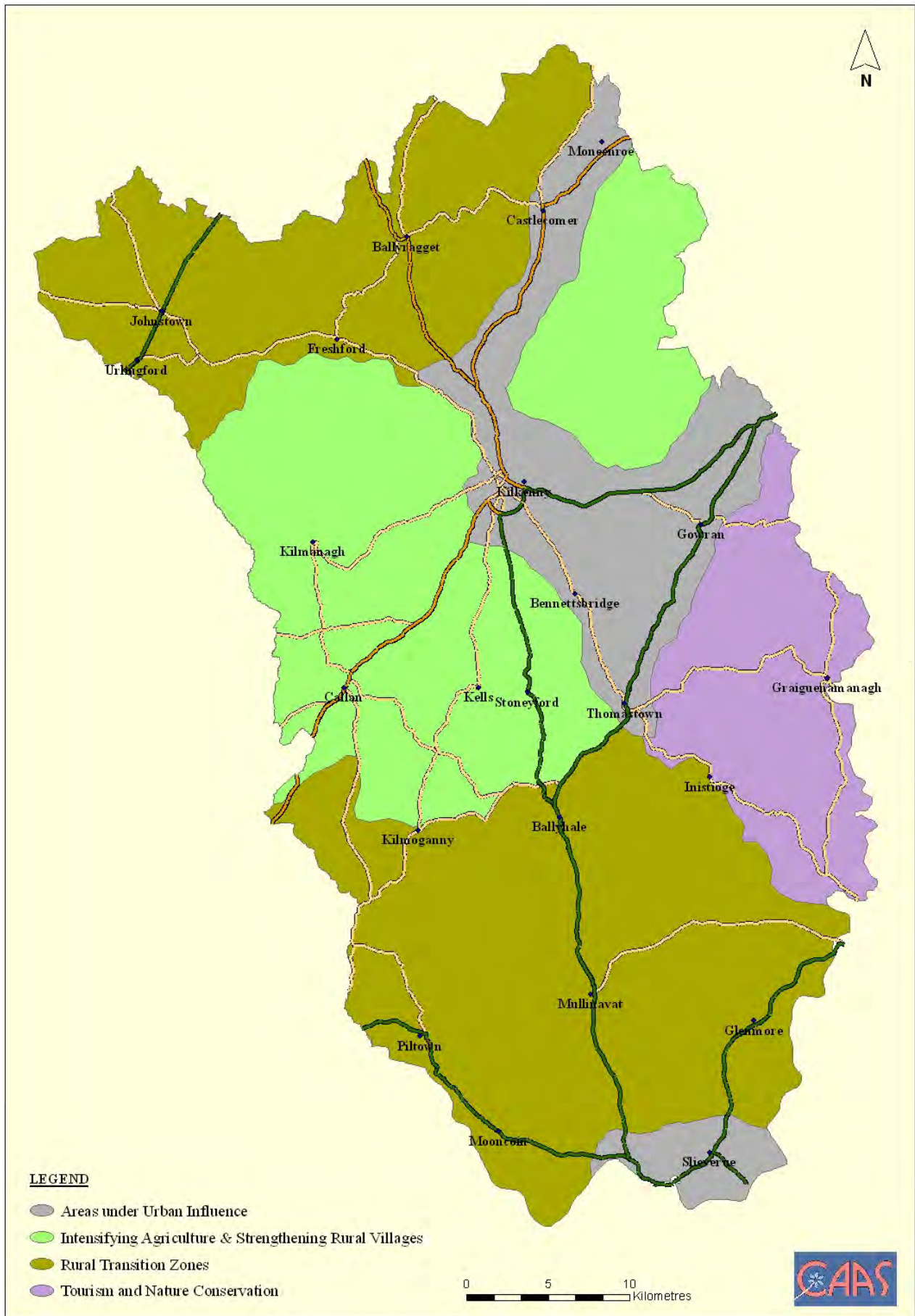
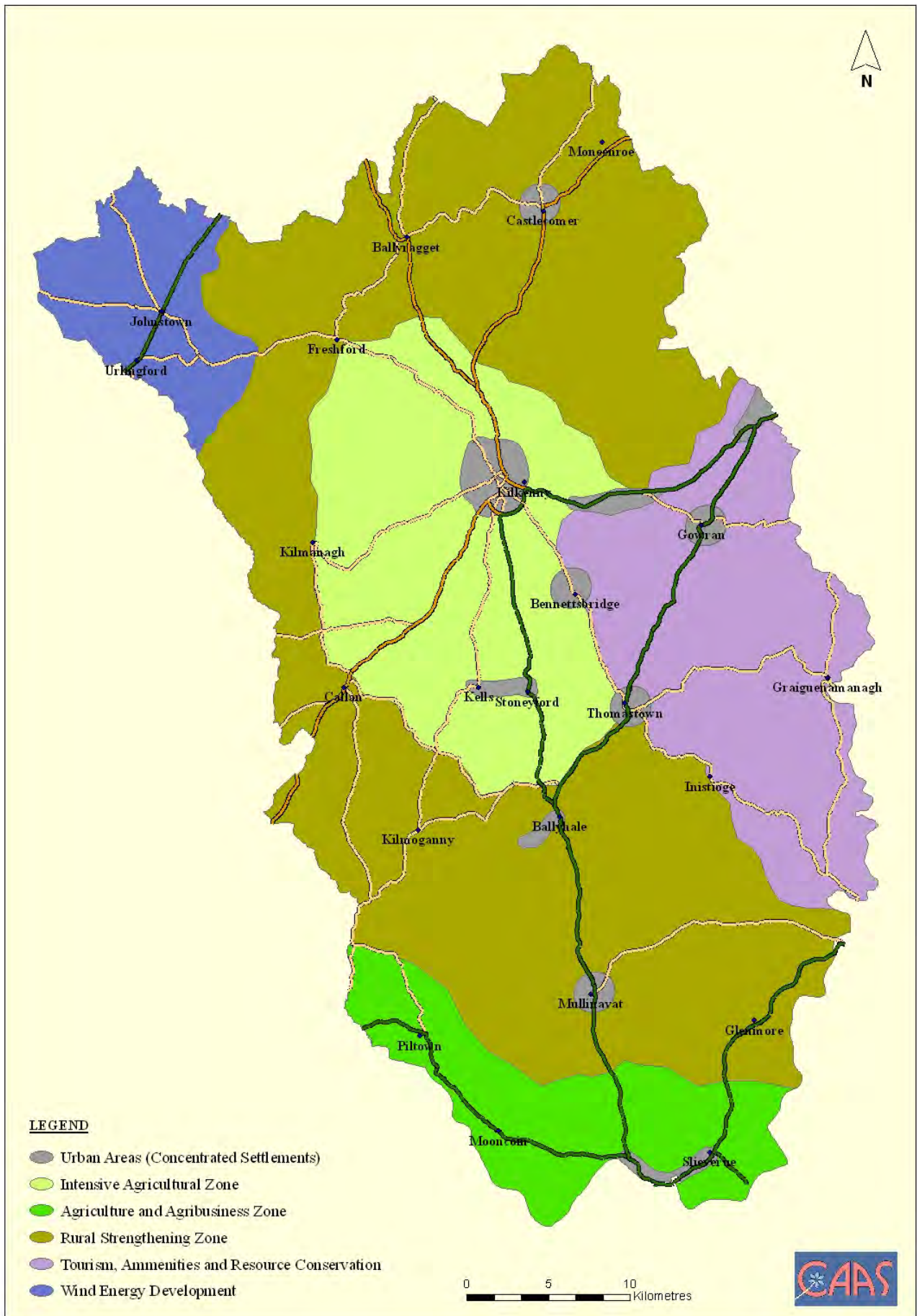


Figure 6.2 Scenario 2: Normal Planning





**Figure 6.3 Scenario 3: Strong Planning**

## Section 7 Evaluation of Alternative Plan Scenarios

### 7.1 Introduction

The objective of this section is to determine the relative merits of a range of alternative scenarios for the development of the County under a range of types of plan regimes. This determination sought to understand whether each alternative was likely to: improve, conflict or have a neutral interaction with the County's environment.

Scenarios are evaluated for both planning and environmental impacts against both the existing environment and Strategic Environmental Objectives (SEOs).

### 7.2 Methodology

#### 7.2.1 Overlay Mapping

In order to identify the extent to which environmental sensitivities are likely to be impacted upon by implementation of the plan, overlay mapping (which weighs environmental sensitivities and maps them overlapping each other) as shown under Section 3.10 (Figure 3.17) is used.

#### 7.2.2 Existing Environment

Use has been made of the description of the environmental baseline, including the maps which spatially represent components of the environmental baseline (Sections 3.2 to 3.9) in order to identify how each alternative scenario would impact upon the environment and planning.

#### 7.2.3 Strategic Environmental Objectives (SEOs)

Based on an understanding of the existing and emerging environmental conditions in the County a series of SEOs were developed in order to assess the likely environmental effects which would be caused by implementation of each of the three alternative scenarios described and mapped in Section 6. The alternatives are evaluated using compatibility criteria (see Table 7.1) in order to determine how they are likely to affect the status of these SEOs.

Table 7.2 brings together all the SEOs which have been developed from international and national county policies which generally govern environmental protection objectives.

The SEOs and the alternative scenarios are arrayed against each other to identify which interactions - if any - would cause impacts on specific components of the environment.

Where the appraisal identifies a likely conflict with the status of an SEO the relevant SEO code is entered into the conflict column - e.g. B1 which stands for SEO likely to be affected - in this instance 'to avoid loss of relevant habitats, geological features species or their sustaining resources in designated ecological sites'.



Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8) - to be filled in on all tables
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**Table 7.1 Criteria for appraising the effect of Plan provisions on Strategic Environmental Objectives**

SEO Code	SEO
<b>B1</b>	To avoid loss of relevant habitats, geological features, species or their sustaining resources in designated ecological sites
<b>B2</b>	To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources, in designated ecological sites by development within or adjacent to these sites
<b>B3</b>	To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity
<b>HH1</b>	To protect human health from hazards or nuisances arising from exposure to incompatible landuses
<b>S1</b>	Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands <sup>32</sup>
<b>S2</b>	To permit sustainable quarrying of non-renewable sand, gravel, rock deposits
<b>W1</b>	To maintain and improve, where possible, the quality of rivers
<b>W2</b>	To prevent pollution and contamination of ground water
<b>W3</b>	To maintain and improve, where possible, the quality of estuarine waters
<b>W4</b>	To prevent pollution and contamination of bathing water
<b>A1</b>	To minimise increases in travel related emissions to air
<b>M1</b>	To serve new development under the CDP with appropriate waste water treatment
<b>CH1</b>	To protect the archaeological heritage of County Kilkenny with regard to: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.
<b>CH2</b>	To preserve and protect the special interest and character of County Kilkenny's architectural heritage with regard to: entries to the Record of Protected Structures; Architectural Conservation Areas; entries to the National Inventory of Architectural Heritage, and; the context of the above within the surrounding landscape where relevant.
<b>L1</b>	To avoid significant adverse impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views

**Table 7.2 Strategic Environmental Objectives (SEOs)<sup>33</sup>**

<sup>32</sup> SEO S1 was identified as conflicting with SEOs CH1 and CH2

<sup>33</sup> Strategic Environmental Objectives (SEOs) are methodological measures which are developed from international, national and county policies which generally govern environmental protection objectives and against which the environmental effects of the Plan can be tested. The SEOs are used as standards against which the development strategies, policies and objectives of the Plan, including the zoning provisions and, can be evaluated in order to help identify areas in which significant adverse impacts are likely to occur, if unmitigated against.

### 7.3 Evaluation against Existing Environmental Baseline Overlay Mapping

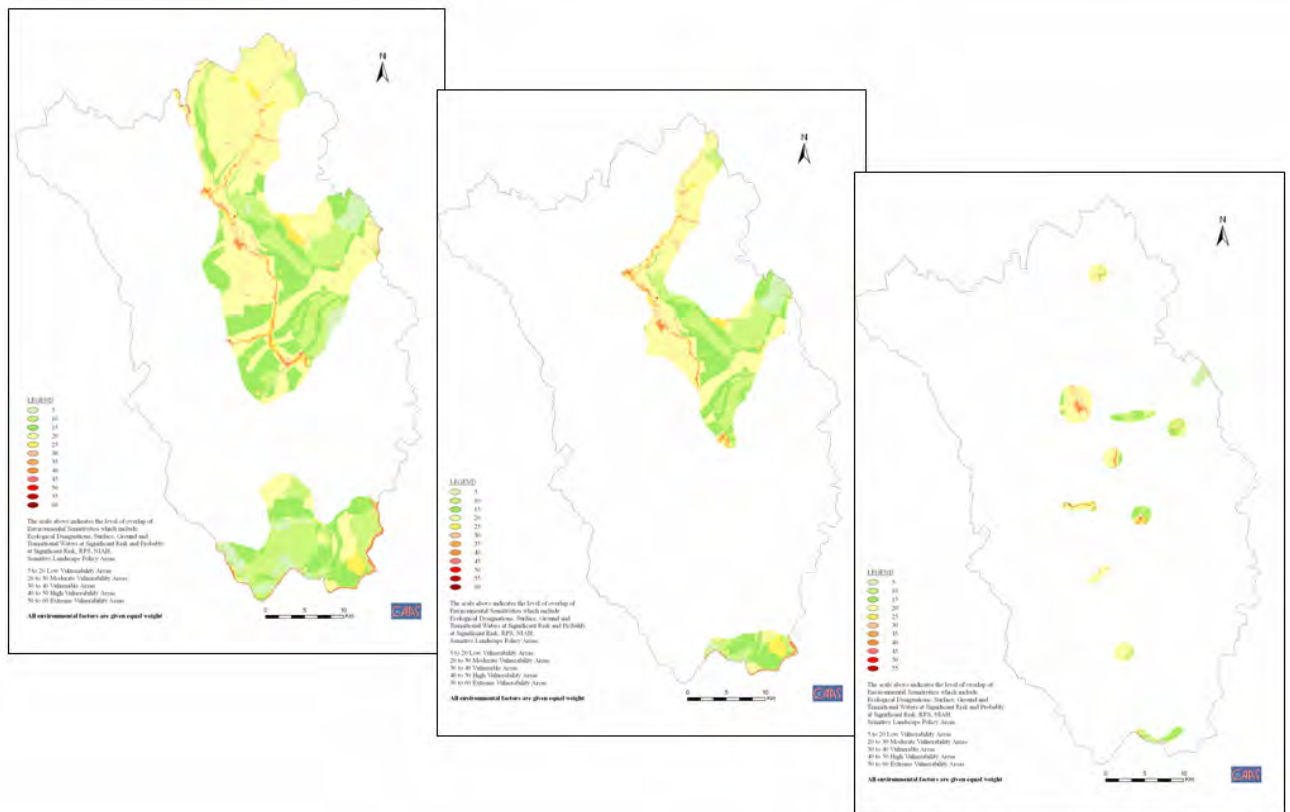
Table 7.3 quantifies the vulnerability areas which are likely to be impacted upon by the areas of each Scenario which are most likely to come under urban pressure. These areas were

mapped (see Figure 7.1) and calculated using GIS software

Although, as previously noted, there are elements of subjectivity to the weighting system used the analysis, it indicates clearly that more sensitive factors would be likely to be impacted upon by Scenario 1 than Scenario 2 and less sensitive factors would be likely to be impacted upon by Scenario 3 than Scenario 2.

Vulnerability Area	Scenario 1 Weak Planning	Scenario 2 Normal Planning	Scenario 3 Strong Planning
Low	364.41	149.49	22.54
Moderate	383.83	140.72	34.63
Vulnerable	29.87	15.88	5.42
High	5.97	2.79	1.24
Extreme	0.18	0.11	0.09
Acute	364.41	0	0

**Table 7.3 Quantification of Environmental Vulnerable Areas most likely to be affected by each Scenario**



**Figure 7.1 Overlay of Environmental Sensitivities on Areas most likely to be affected by each Scenario**

## **7.4 Evaluation against Existing Environmental Baseline Description and Mapping**

### **7.4.1 Scenario 1 – *Weak Planning***

#### **7.4.1.1 Planning Impacts**

This approach does not appear to be set within a plan led or strategy vision for the future. Likely outcome of this approach:

- Ad hoc dispersed rural housing would be likely to draw population away from the towns /villages. This would result in the inability of the town/villages to grow and develop and build up the necessary population base that would generate viable service provision and economic opportunities. The likely outcome is the loss of services and facilities in these towns which in turn would have serious implications for the quality of life for the rural communities.
- Concentration of urban generated housing around the main centres as is currently happening is likely under Scenario 1, with consequences for the orderly and efficient development of newly developing areas on the edges of these towns, obstruction of alignments for future provision of infrastructure, undermining viability of urban public transport and attendant later problems in terms of demands for higher public expenditure.
- Consequences and concerns relating to the sustainable development of key assets such as wind energy, road network, aggregates etc.
- Potential adverse effects on water quality and environmentally sensitive areas, scenic amenities and natural and made heritage resources the sustainable management and development of which do not appear to be taken into consideration in this approach.
- This scenario does not converge with the NSS framework for Kilkenny.

#### **7.4.1.2 Environmental Impacts**

##### **Surface Water**

The bulk of development takes place within the catchments of rivers and streams that are at significant risk of failing to achieve WFD objectives. Developments not connected with waste water treatment plants would cause significant deterioration in the quality of surface waters. There would be significant non-conformances with the provisions of the water Framework Directive.

##### **Groundwater**

The levels of ad hoc dispersed rural housing would create significant pollution to groundwater throughout areas in the centre of the county and in the environs of Waterford City in the south. There would be significant non-conformances with the provisions of the water Framework Directive.

##### **Transitional Waters**

The transitional waters of the Rivers Suir and Barrow which are classified as being at significant risk of failing to achieve WFD objectives and are likely to be significantly adversely impacted upon by the extent of rural housing in the south of the County.

##### **Ecology**

There would be significant breaches of the provisions of the habitats Directive as a result of adverse impacts upon designated ecological sites - including salmonid, riverine and upland habitats - and ecological networks.

##### **Cultural Heritage**

Likely development pressure areas coincide with concentrations of archaeology and monuments in Kilkenny - emphasising the richness of Kilkenny's heritage and the need to put in place systematic ways of anticipating and avoiding potential archaeological impacts during the development stage.

##### **Landscape**

There would be significant and widespread deterioration of the character and integrity of most landscapes in the County under this Scenario - with associated impacts on tourism amenities. There would be significant and numerous non-conformities with the provisions of the CDP Landscape Protection Policies

## **7.4.2 Scenario 2 - Normal Planning**

### **7.4.2.1 Planning Impacts**

This scenario has regard to the strategic potential of different parts of the County and the development of this potential in a sustainable manner. It acknowledges the role of existing settlements and also rural settlement. Of the three scenarios presented, it would appear to fit best with the NSS concept.

### **7.4.2.2 Environmental Impacts**

#### **Surface Water**

Almost all of the main urban centres are located within the catchments of rivers and streams that are at significant risk. Virtually all of the associated pressure in adjacent rural areas also occurs in such areas. This means that developments within these areas that are not connected with adequately sized and effectively operated waste water treatment plants would almost certainly cause significant deterioration in the quality of surface waters. This is a significant risk that must be mitigated against by the timely development of appropriate waste water treatment facilities.

#### **Groundwater**

The soils and geology of County Kilkenny create conditions which mean that groundwater is, at the very least, highly vulnerable to pollution across most of the County, and extremely vulnerable to pollution in many areas. In addition to this vulnerability, much of the lands covered by the 'Areas under Urban Influence' zoning are located over groundwater which is at significant risk or probably at significant risk of failing to meet commitments under the WFD. This means that rural developments including those in the environs of Slieverue, Kilkenny City, Castlecomber, Gowran, Paulstown, Bennetsbridge, Kells, Stoneyford, Thomastown, Ballyhale and Kilmoganny would have to be very carefully prepared and scrutinised in order to anticipate and avoid impacts.

#### **Transitional Waters**

Development in the northern environs of the Waterford City Gateway, including that at Belview Port, should be served by the appropriate waste water treatment infrastructure in order to avoid impacts upon the transitional waters of the Rivers Suir and Barrow - which are classified as being at significant risk

of failing to achieve WFD objectives - and the estuarine and bathing waters of Waterford Harbour - which are classified as being probably at significant risk of failing to achieve WFD objectives.

#### **Ecology**

Under this Scenario, with the exception of areas beside salmonid waters - there is a relatively low potential for development and settlement to conflict with nature in most of Kilkenny. However, developments near rivers, many of which are salmonid in County Kilkenny, have to be very carefully prepared and scrutinised in order to anticipate and avoid impacts on these resources.

#### **Cultural Heritage**

Likely development pressure areas coincide with concentrations of archaeology and monuments in Kilkenny - emphasising the richness of Kilkenny's heritage and the need to put in place systematic ways of anticipating and avoiding potential archaeological impacts during the development stage.

#### **Landscape**

The majority of the County's valued upland landscape (Policy Area 1) would remain largely unchanged. The planned settlement corridor which is centred on the Kilkenny City Hub is generally located within lowland landscape (Policy Area 2) - which is a predominantly robust type and would continue to exhibit the dynamism and change of an inhabited working landscape. The transitional landscape (Policy Area 4) would continue to exhibit dynamism and change as agriculture declines providing new opportunities for forestry and biodiversity.

## **7.4.3 Scenario 3 - Strong Planning**

### **7.4.3.1 Planning Impacts**

This scenario devises a more strategic role for the towns and villages.

The management of an extensive area of the County as natural amenities subject to strict interpretation of EU Directives would have implications for existing rural communities as it implies that this area would largely be associated with amenity rather than other economic activities which could be carried out in a sustainable manner without impacting on the inherent conservation value of the area.

Rural areas with strong potential for diversification and diversifying areas (NSS) would be unlikely to develop as envisaged in the NSS concept under this Scenario as these areas have a largely passive role under this Scenario.

#### **7.4.3.2 Environmental Impacts**

##### **Surface Water**

Almost all of the main urban centres are located within the catchments of rivers and streams that are at significant risk. Virtually all of the associated pressure in adjacent rural areas also occurs in such areas.

##### **Groundwater**

The soils and geology of County Kilkenny create conditions which mean that groundwater is, at the very least, highly vulnerable to pollution across most of the County, and extremely vulnerable to pollution in many areas. This means that any rural developments permitted under this scenario including those in the environs of Slieverue, Kilkenny City, Castlecomber, Gowran, Paulstown, Bennetsbridge, Kells, Stoneyford, Thomastown, Ballyhale and Kilmoganny would be very carefully prepared and scrutinised in order to anticipate and avoid impacts.

##### **Transitional Waters**

Development in the northern environs of the Waterford City Gateway, including that at Belview Port, would be served by the appropriate waste water treatment infrastructure in order to avoid impacts upon the transitional waters of the Rivers Suir and Barrow - which are classified as being at significant risk of failing to achieve WFD objectives - and the estuarine and bathing waters of Waterford Harbour - which are classified as being probably at significant risk of failing to achieve WFD objectives.

##### **Ecology**

Under this Scenario, with the exception of areas beside salmonid waters - there is a relatively low potential for development and settlement to conflict with nature in most of Kilkenny. However, developments near rivers, many of which are salmonid in County Kilkenny, have to be very carefully prepared and scrutinised in order to anticipate and avoid impacts on these resources.

##### **Cultural Heritage**

Likely development pressure areas coincide with concentrations of archaeology and monuments in Kilkenny - emphasising the richness of Kilkenny's heritage and the need to put in place systematic ways of anticipating and avoiding potential archaeological impacts during the development stage.

##### **Landscape**

The majority of the County's valued upland, landscape [Policy Area 1] would remain largely unchanged - except for localised impacts associated with wind energy projects in the north western corner of the County in and around the Slieveadaragh Hills. The transitional landscape (Policy Area 4) would continue to exhibit dynamism and change as agriculture declines providing new opportunities for forestry and biodiversity.



## 7.5 Evaluation against SEOs

	Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
<b>Alternative Scenario 1</b> <i>Weak Planning</i>		B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1					
<b>Alternative Scenario 2</b> <i>Normal Planning</i>			B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1				SS TS1 TS2 SP MM1 MM2 MM3 MM4 MM5 MM6 MM7 MM8
<b>Alternative Scenario 3</b> <i>Strong Planning</i>	B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1						

**Table 7.4 Evaluation of Alternative Scenarios against SEOs**

Table 7.4 summarises the evaluation of Alternative Scenarios 1, 2 and 3 against the Strategic Environmental Objectives (SEOs).

## 7.6 The Preferred Alternative

### 7.6.1 Summary of Analysis

On the basis of the above analysis Scenario 3 - *Strong Planning* - emerges as the most environmentally sustainable alternative. However, having regard to Planning considerations, Scenario 2 - Normal Planning - emerges as the alternative that balances environmental protection with economic and social development.

### 7.6.2 The CDP

The CDP that has emerged from the plan preparation process approximates well to many aspects of two of the alternative scenarios examined. The Areas under Urban Influence conforms closely to Scenario 2 while the Wind Energy Strategy is closer to Scenario 1.

For analysis purposes, however - having regards to the dominant effect of the settlement strategy -, the analysis of Scenario 2 provides the best approximation of the likely environmental effects of the implementation of the overall plan.

## **Section 8 Evaluation of Plan Measures**

### **8.1 Methodology**

This section evaluates the Plan's: Overall Vision; Goals; Policies, and; Actions. Strategic Environmental Objectives (SEOs) are used in order to evaluate each of the plan measures as outlined under Section 7.2.3. Use has been made of the environmental baseline maps of the individual components (Sections 3.2 to 3.9) and of the overlay maps (Section 3.10).

#### **8.1.1 Note: Uncertainty of Plan Measures**

With regard to plan measures evaluated as having an uncertain interaction with the status of SEOs, the interaction, and environmental impacts, if any, which the implementation of these Plan measures would have would be determined by: the nature and extent of development arising from these Plan measures, and; site specific environmental factors. These impacts may be assessed as part of a lower tier SEA, as part of an EIA of a particular project and/or by the development management process.

Avoidance of conflict is dependent upon the development management process only granting permission for individual projects arising from these measures which do not conflict with the status of SEOs. Providing other Plan measures, including the measures recommended by this report, and measures arising out of lower tier assessments are complied with, conflicts with SEOs would be likely to be avoided.

## 8.2 Overall Vision, Strategic Goals

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Overall Vision</b>							
To advance the position of the County as a centre of excellence for creativity in all sectors whilst ensuring the continued protection and enhancement of the county's magnificent built and natural heritage, its thriving cultural, sporting and artistic base and its strong and dynamic services economy through the promotion of sustainable economic, social and cultural development.	<b>B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
<b>Strategic Goals</b>							
To provide the highest quality living environments possible, in both urban and rural areas to all members of our community.	<b>B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
To sustain rural communities, by supporting agriculture, tourism and other rural based economic activity & promoting balanced development of rural settlements.	<b>S2 M1</b>		<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 M1 CH1 CH2 L1</b>				<b>TS1 TS2 MM1 MM2 MM3 MM4 MM5 MM6 MM7 MM8</b>
In conjunction with the Kilkenny City & Environs Development Plan to provide for a sustainable spatial development strategy to guide the location of development within the County	<b>B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
To protect, conserve and enhance the built and natural heritage of County Kilkenny for future generations.	<b>B1 B2 B3 W1 W2 W3 W4 M1 CH1 CH2 L1</b>						

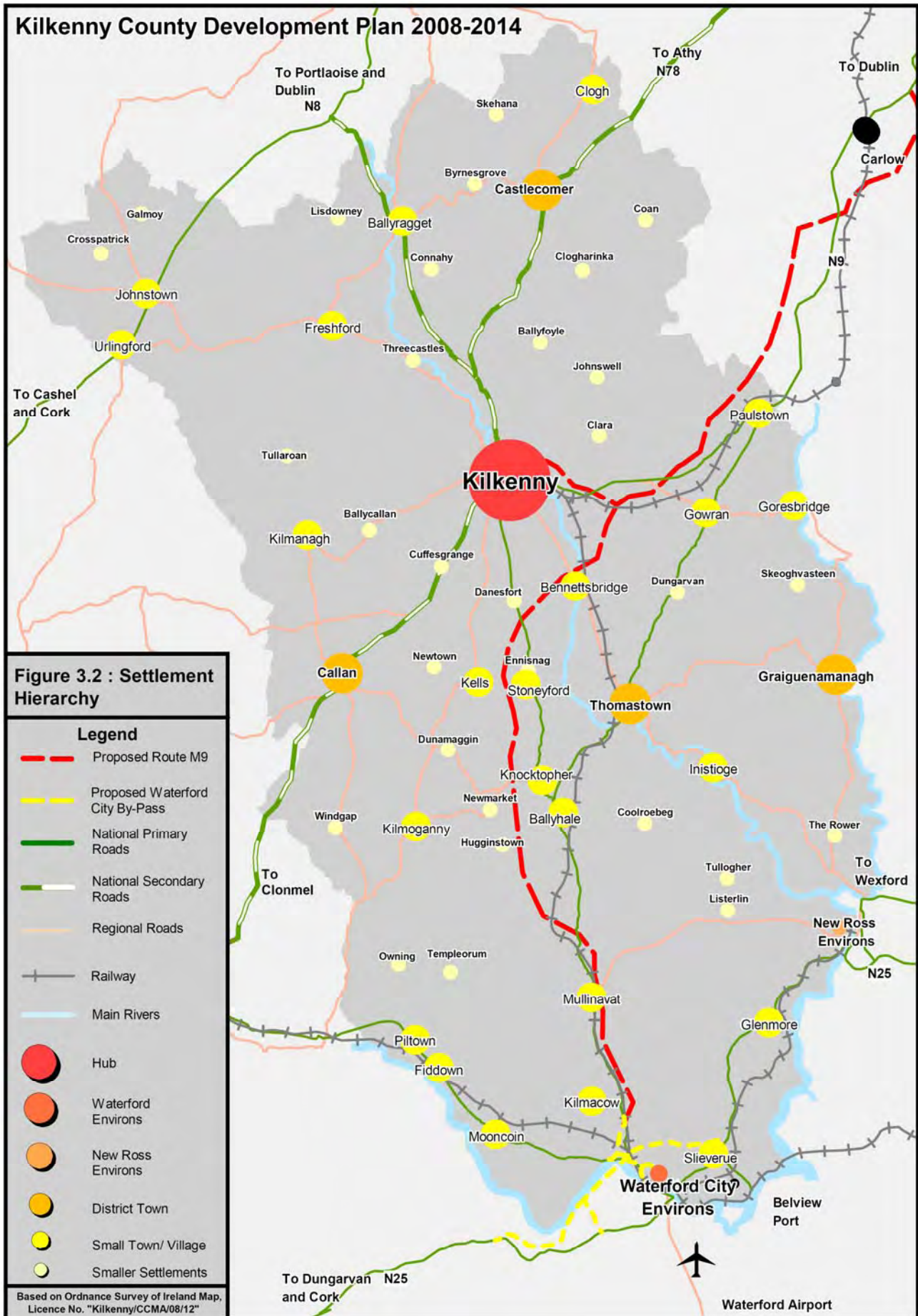


Figure 8.1 Settlement Concept Map taken from CDP

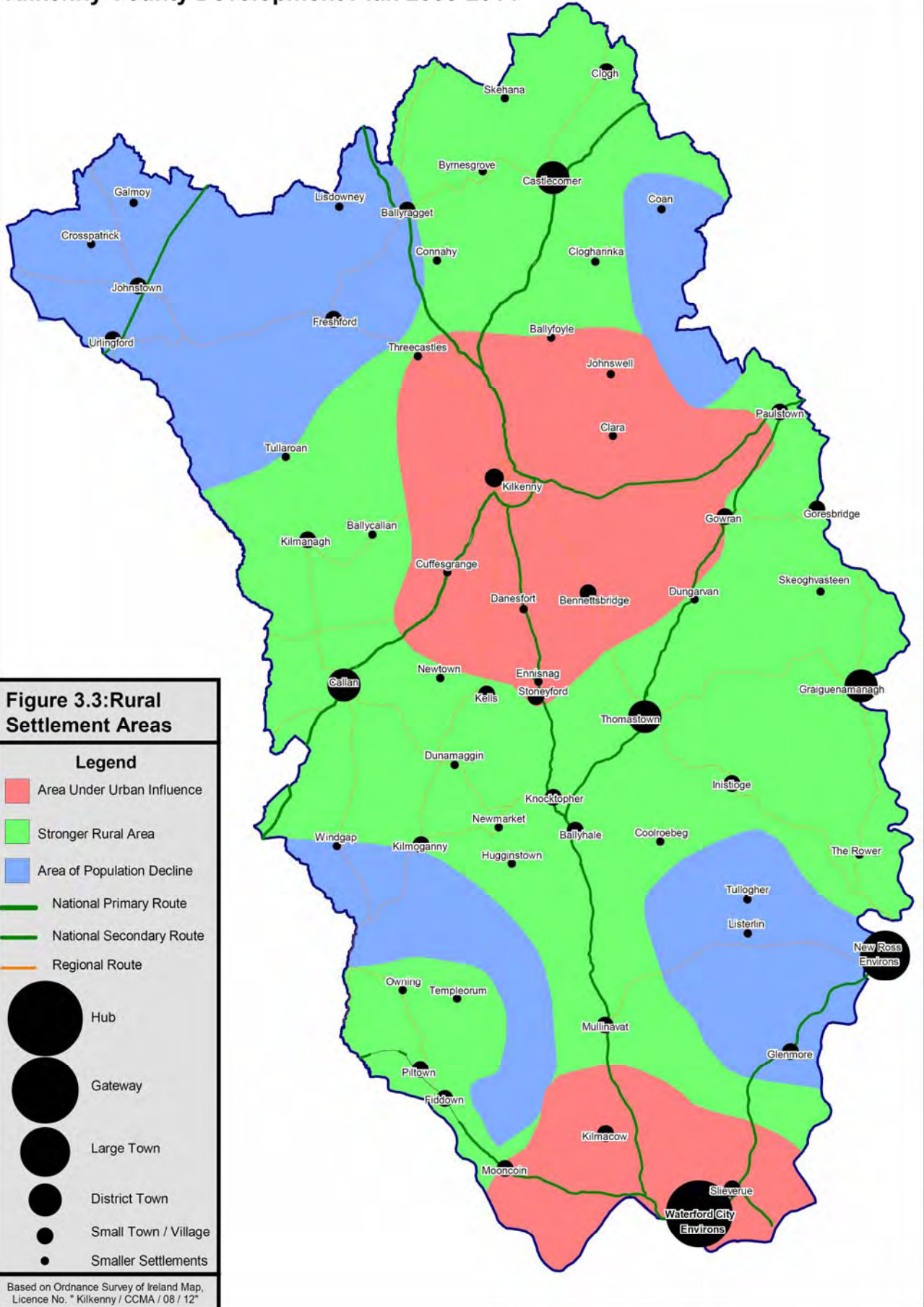
### 8.3 Settlement Strategy Policies

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs-unlikely to be mitigated	Potential Conflict with status of SEOs-likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely interaction with status of SEOs	Mitigation Measure Code(s) (see Section 8)
<b>Large Growth Areas</b>							
<p>Kilkenny City has been identified as a Hub in the National Spatial Strategy, and is a key driver which can help promote more balanced regional development. Under the NSS and Regional Planning Guidelines Kilkenny City has a target population of 30,000+ to be reached by the year 2020. Kilkenny is the driver of growth for the County at a sub- regional level and also supports Waterford City in its role as a Gateway. In order to fulfill its role as a Hub, Kilkenny City will be the main focus for public and private sector investment within the county over the period of the Plan.</p> <p>Waterford is the principal city in the South-East Region and is the designated Gateway under the National Development Plan and the National Spatial Strategy. Development priorities for the City include enhancing its critical mass, implementing a co-ordinated approach to the development of the various parts of the city and its environs, which cross local authority boundaries. An integrated land use and transportation study has been prepared for the Greater Waterford area (PLUTS) which sets out a vision for the development of Waterford city as a Gateway. This will have a key role in delivering social, economic and environmental sustainability for the City and its Environs. Kilkenny County Council is committed to the role of Waterford City as a Gateway and in this regard will facilitate the continued development of the Waterford Environs within County Kilkenny and Belview Port which are seen as having substantial potential for enhancing critical mass. The Council will ensure through a separate Local Area Plan for the environs of Waterford within County Kilkenny, that there is sufficient development capacity for the various land uses required to support the Gateway.</p>							
To implement the National Spatial Strategy and Regional Planning Guidelines by encouraging developments into the designated Hub of Kilkenny and the environs of the Waterford Gateway				✓			
To cooperate with the relevant local and regional authorities in the development of the Atlantic Gateways Initiative						✓	
To ensure that there is sufficient development capacity for the various land uses required to support Kilkenny City & Environs as Hub	CH1 CH2 L1 B1 B2 B3 M1		L1 B1 B2 B3 S1				SS MM1 MM2 MM3 MM4
To facilitate and promote the continued development of the Belview Port Area as a strategic port for the region.				✓			
To ensure that there is sufficient development capacity for the various land uses required to support the Waterford Gateway through a separate Local Area Plan for the environs.	CH1 CH2 L1 B1 B2 B3 M1		L1 B1 B2 B3 S1				SP MM8 MM1 MM2 MM3 MM4
<b>Large Town – Environs of New Ross</b>							
<p>The Regional Planning Guidelines identified New Ross as a Large Town. According to the RPGs, New Ross was targeted for growth having regard to its strategic location, capacity for growth and potential to deliver on the core objectives of critical mass and balanced regional development. Development priorities for New Ross include supporting the strengthening of critical mass within the catchment of the Waterford Gateway and implementing a co-ordinated approach to the development of New Ross and its environs, which cross local authority boundaries. Both local authorities co-operated in the production of Development Plans for their respective areas. New Ross Town Council published their Development Plan in 2004 and Kilkenny County Council completed a Local Area Plan for the Environs of New Ross in 2005. Both plans will have a key role in ensuring that New Ross fulfils its role in supporting the Waterford Gateway.</p>							
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.	CH1 CH2 L1 B1 B2 B3 M1		L1 B1 B2 B3 S1				SP MM8 MM1 MM2 MM3 MM4



<b>District Towns</b>							
Thomastown was the only town categorised as a District Town in the NSS and the RPGs, as it had a population in excess of 1,500 in 2002. The 2006 Census now shows that Callan and Castlecomer have both passed this 1,500 mark.							
Promote enterprise and economic development in Graiguenamanagh in line with the Graiguenamanagh-Tinnahinch Development and Economic Study, 2006				√			
To produce LAPs for and promote Callan, Castlecomer, Graignamanagh and Thomastown as District Towns, with an appropriate range of facilities and services, including social infrastructure, retail units, commercial offices and local enterprise, to serve their rural catchments.			HH1 M1 CH1 CH2			SP MM5 MM6 MM7	
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.	A1						
<b>Smaller Towns and Villages</b>							
The smaller towns and villages need to be developed in a way that strengthens their role as local service centres whilst respecting their existing character. Achieving the right balance between encouraging development in smaller towns and villages and the scale and nature of such development is critical. It is important to ensure that new residential development in smaller towns and villages is of a design, layout, character and scale which fits well with the town or village involved and presents a high quality living environment. These smaller towns and villages within the county are: Ballyhale, Ballyragget, Bennettsbridge, Clogh-Moneenroe, Fiddown, Freshford, Glenmore, Goresbridge, Gowran, Inistioge, Johnstown, Kells, Kilmacow, Kilmanagh, Kilmoganny, Knocktopher, Mooncoin, Mullinavat, Paulstown, Piltown, Slieverue, Stoneyford and Urlingford. During the period of the County Development Plan 2002 - 2008, Local Area Plans were prepared for Urlingford, Freshford Goresbridge, Ballyragget, Inistioge, Gowran, Piltown, Fiddown, Slieverue, Ballyhale, Stoneyford, Knocktopher, Mullinavat, Kells and Mooncoin. Local Area Plans or other appropriate planning framework documents will be prepared for the remaining smaller towns and villages during the life of this Plan.							
To strengthen the service centre role of smaller towns and villages.				√			
To ensure that new residential development in smaller towns and villages is of a design, layout, character and scale which fits well with the town or village involved and presents a high quality living environment.	CH1 CH2						
To revitalise existing villages through the promotion of development within them (particularly on infill sites, vacant sites and on backlands), in preference to continued ribbon development on the approach roads. This will promote the efficient use of available public infrastructure and services.	B1 B2 B3 S1 W1 W2 W3 W4 A1 M1 L1		CH1 CH2 L1			MM6 MM7 MM8	
<b>Smaller Settlements/Nodes</b>							
The County Development Plan 2002 contains a further settlement tier not readily identifiable in the RPG's, which will also form part of the settlement structure. In developing a settlement strategy for the County the widely dispersed system of parishes was examined. Within each parish the location of services such as schools, post offices, Garda stations etc. was identified. From that survey, smaller settlements were identified where there was a cluster of two or more services. In addition to these identified locations there are also isolated rural services which have a role to play in serving the rural community. Smaller settlements possess a very narrow range of physical and social infrastructure but have some limited capacity to cater for additional housing generally through low-density individual or multiple housing and other developments, in tandem with the provision of services. They will form an important component of the settlement network, by providing a basic level of services and by accommodating new growth that is compatible with the area. The scale and fabric of these centres must however be respected in new development proposals. Any new development should be of a design, layout, character and scale which fits well with the settlement involved and presents a high quality living environment. Smaller Settlements/Nodes within the County include Ballycallan, Ballyfoyle, Byrnesgrove, Clara, Clogharinka, Coan, Connahy, Coolroebeag, Crosspatrick, Cuffesgrange, Danesfort, Dunamaggin, Dungarvan, Ennisnag, Galmoy, Hugginstown, Johnswell, Lisdowney, Listerlin, Newmarket, Newtown, Owing, Skehana, Skeoghvasteen, Templeorum, The Rower, Threecastles, Tullaroan, Tullogher and Windgap.							
It is the policy of the Council to encourage low density housing in the form of individual or multiple developments within smaller settlements and also immediately adjacent (i.e. within 150m) to an operating isolated rural service such as a school, public house, church or shop. All applications for cluster development shall be assessed against the capacity of the area to absorb development. This capacity assessment will include consideration of environmental issues, roads, water services, community facilities and the surrounding area's natural and built heritage context.			M1 L1			MM5 MM8	

**Kilkenny County Development Plan 2008-2014**



**Figure 8.2 Rural Settlement Areas taken from CDP**

## 8.4 Rural Settlement Strategy

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Broad Objectives</b>							
The objective of the Council's rural housing strategy is to provide for sustainable rural communities without compromising the physical, environmental, natural or heritage resources of the county. This broad objective is underpinned by the following detailed objectives: <ul style="list-style-type: none"> <li>Promote the sustainable development of rural areas.</li> <li>Protect the quality and character of rural areas.</li> <li>Protect the quality of the environment, including the prevention, limitation, abatement and/or reduction of environmental pollution and the protection of waters, groundwater and the atmosphere.</li> <li>Protect features of the landscape and areas of major importance for wild fauna and flora.</li> <li>Protect the character of the landscape, including views and prospects listed in this Draft Plan and the amenities of places and features of natural beauty or interest.</li> </ul>	<b>B1 B2 B3 HH1 S1 S2 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
<b>Rural Housing Area Policy</b>							
There are three categories of rural housing areas in County Kilkenny, as shown on Figure 8.2. These are: Areas under Urban Influence; Stronger Rural Areas, and; Peripheral Areas of Population decline. The Rural Settlement Strategy Policies detailed below have been devised in order to respond to the different housing requirements of urban and rural communities and the varying characteristics of rural areas.							
<i>Areas under Urban Influences</i>							
Areas under urban influence display the greatest pressures for development due to: Close commuting catchments of larger cities and towns; Rapidly rising population, and; Ready access to good road network with ready access to the larger urban areas.							
It is the Council's objective for areas of urban influence to facilitate the housing requirements of the rural community as identified in this section while on the other hand directing urban generated development to areas zoned for new housing development in city, towns and villages in the area of the development plan.				√			
In areas of strong urban influences it is the policy of the Council to permit single houses for persons where the following criteria are met: <ol style="list-style-type: none"> <li>Persons who are full-time farmers or employed full-time in other rural-based activity such as horticulture, forestry, bloodstock or other rural-based activity in the area in which they wish to build or whose employment is intrinsically linked to the rural area in which they wish to build.</li> <li>Immediate family members of people intrinsically linked to the area to include brothers, sisters, sons, daughters, nieces, nephews and grandchildren.</li> <li>Persons who are originally from the local area and wish to return to live in the local area (returning migrants).</li> </ol> <p>All permission granted for rural housing within the Areas of Urban Influence shall be subject to an occupancy condition pursuant to Section 47 of the Planning and Development Act 2000 restricting the use of the dwelling to the applicant or members of his/her immediate family as a place of permanent residence. The period will be limited to five years from the date of first occupancy.</p>			<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 L1</b>			<b>SS SP MM1 MM2 MM3 MM4 MM5 MM8</b>	

<i>Stronger Rural Areas</i>							
In stronger rural areas of the county it is a key objective of the Council to consolidate and sustain the stability of the population and in particular to strike a balance of activity in the smaller towns and villages and the wider rural area thereby ensuring that these areas maintain a stable population base.				✓			
To accommodate proposals for individual rural generated houses and promote the development of houses in the designated and smaller settlements.			<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 L1</b>				<b>SS SP MM1 MM2 MM3 MM4 MM5 MM8</b>
To actively stimulate and facilitate new housing development in designated towns and villages through the preparation of local area plans.	<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>		<b>M1 CH1 CH2</b>				<b>SP MM5 MM6 MM7</b>
To monitor development trends to avoid areas becoming overdeveloped, leading to an over concentration of development or ribbon development.				✓			
<p>It will be the policy of the Council to consider development for single houses for the following classes of persons:</p> <p>1. Persons who are an intrinsic part of the rural community: Such persons will normally have resided a minimum of three years in a rural area as members of an established rural community. Examples would include farmers, their sons and daughters and/or any persons taking over the ownership and running of farms, as well as people who have developed strong links in the rural area and are building their first homes. Examples in this regard might include sons and daughters of families living in rural areas who have grown up in rural areas and are perhaps seeking to build their first home near their family place of residence. The Council will also consider nieces and nephews and grandchildren in this regard. In certain circumstances, persons who lived for substantial parts of their lives in rural areas then emigrated and who now wish to return to reside near other family members or to care for elderly family members, will be considered an intrinsic part of the rural community.</p> <p>2. Persons working full-time or part-time in rural areas Such circumstances will normally encompass persons involved in full-time farming, forestry, inland waterway or marine related occupations, as well as part time occupations where the predominant occupation is farming/natural resource related. Such circumstances could also encompass persons whose work is intrinsically linked to rural areas such as teachers in rural schools or other persons whose work predominantly takes place within rural areas. The local area will be considered as within 10km of the proposed site excluding defined urban areas.</p>			<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 L1</b>				<b>SS SP MM1 MM2 MM3 MM4 MM5 MM8</b>
<i>Peripheral Areas of Population Decline</i>							
<p>In these areas it will be the policy of the Council to:</p> <ul style="list-style-type: none"> <li>Accommodate any proposals for individual rural or urban generated permanent residential development subject to meeting normal planning and environmental criteria,</li> <li>Actively stimulate and facilitate new housing development in designated towns and villages through the preparation of local area plans within these areas or identify crossroad type settlements where appropriately located and designed clustered development will be encouraged and accommodated.</li> <li>Monitor the operation of the settlement policies on an ongoing basis in structurally weak areas to avoid excessive levels of or inappropriately located development.</li> </ul> <p>Subject to satisfying good practice in relation to site location and access, drainage and design requirements, rural generated housing requirements will be accommodated in the locality in which they arise. In all cases the consideration of individual sites will be subject to normal siting and design considerations, which will include but not necessarily be limited to the following:</p> <ul style="list-style-type: none"> <li>Any proposed vehicular access would not endanger public safety by giving rise to a traffic</li> </ul>	<b>M1 HH1 L1 CH1 CH2</b>		<b>B1 B2 B3 S1 A1</b>				<b>SS SP MM1 MM2 MM3 MM4</b>

<p>hazard,</p> <ul style="list-style-type: none"> <li>• That any proposed on-site waste water disposal system is designed, located and maintained in a way which protects water quality,</li> <li>• That the siting and design of new dwellings takes account of and integrates appropriately with its physical surroundings and other aspects of the natural and cultural heritage, and;</li> <li>• That the proposed site otherwise accords with the objectives of the development plan in general.</li> </ul>							
<b>Refurbishment and Replacement Dwellings Policy</b>							
<p>To encourage and facilitate the appropriate refurbishment of existing housing stock in rural areas and in certain limited cases the replacement of existing dwellings subject to development assessment criteria outlined below.</p> <ul style="list-style-type: none"> <li>• That in the case of refurbishment and extension proposals, that the scale and architectural treatment of proposed works are sympathetic to the character of the original structure and the surrounding area including adjoining or nearby development.</li> <li>• That in the case of replacement dwellings, to require that the original structure was last used as a dwelling.</li> <li>• That replacement dwellings are provided at locations where safe access and acceptable wastewater disposal arrangements can be put in place and where specific development objectives or other policies of the Planning Authority are not compromised.</li> <li>• That the size and scale of the replacement dwelling should reflect the site's characteristics and context and shall accord with best practice in rural house design.</li> <li>• Where an applicant can demonstrate that their proposals ensure the sensitive restoration of vernacular and traditional buildings in the rural area, such proposals shall not be subject to the policies in Section 3.4.2 that applies to new dwellings.</li> </ul>	<b>S1 M1 HH1 CH1 L1</b>			✓			
<b>Monitoring Policy</b>							
To carry out annual monitoring of the operation of the rural settlement policy to ensure that the policies remain valid and up-to-date and reflect the Government Guidelines on Sustainable Rural Housing.				✓			

## 8.5 Housing and Community

### 8.5.1 Housing Strategy

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Broad Objectives</b>							
It is an objective of the Council to implement the housing strategy contained in the Draft Development Plan.				✓			
<b>Policy</b>							
To require 20% of the land zoned for residential use, or for a mixture of residential and other uses, be made available for the provision of social and affordable housing.						✓	
To provide the necessary infrastructural investment to facilitate the overall level of housing output required to meet the current and anticipated levels of demand in a planned coherent fashion	<b>M1</b>						
To zone adequate amounts of land for housing to provide a locational choice and allow for the probability that				✓			



not all zoned land will be made available for development							
To strive for the highest quality built environment when assessing development proposals	<b>CH1 CH2</b>						
To encourage economy and efficiency in the use of land and services	<b>M1</b>						
To promote a high standard of architecture in the siting and design of new housing developments	<b>CH1</b>						
To encourage a variety of house types, sizes and tenure in individual schemes and to encourage variety, interest and social mix in private and social housing developments				✓			
To ensure that the Council's housing policy and objectives are linked with employment, environmental, and infrastructural policies and objectives with the aim of improving the quality of life and the attractiveness of the county's towns, villages and open countryside	<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
To assist and facilitate state and community bodies in the development of a Traveller horse project in the county						✓	

### 8.5.2 Residential Development

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policies</b>							
Emphasise quality, innovation and a design-led approach in all housing development with proposals appropriate to each site and location.	<b>CH1</b>						

### 8.5.3 Community Facilities

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Reserve sites for community facilities as appropriate and to seek to remedy deficiencies in existing developed areas.						✓	
Link the provision of community facilities to increases in residential population through phasing arrangements in the Local Area Plans to ensure the timely provision of facilities.						✓	
Locate community facilities within existing settlements and where population levels warrant a particular service.						✓	
Liaise with community groups and to assist community initiatives subject to the availability of resources.						✓	

To ensure that, where practicable, community, recreational and open space facilities are clustered, with the community facilities being located in local centres or combined with school facilities as appropriate. Community facilities should be located close to or within walking distance of housing, accessible to all sectors of the community and facilitate multi-use functions through their design and layout.	L1						
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### 8.5.4 Education

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Facilitate the provision of childcare 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.						✓	
To require the provision of appropriate purpose built childcare facilities in association with proposals for new residential development of more than 75 dwelling units. Where appropriate the Council will operate this requirement in a flexible manner and will encourage and facilitate cooperation between developers to jointly provide facilities, having regard to the Kilkenny County Childcare Strategy.						✓	
In so far as possible, the provision of childcare facilities should be adjacent to, or co-located with, other facilities required for other community use.						✓	
To assess, in conjunction with the Kilkenny County Childcare Committee and the County Development Board, the continuing needs around childcare and related facilities and review progress on the provision of same during the period of this Plan.						✓	
In developing proposals for housing schemes, developers are encouraged to liaise with the County Childcare committee in advance of preparing planning applications in order to ascertain the local requirements.						✓	

### 8.5.5 Social Capital

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To make Kilkenny an attractive place to live and work by building strong, inclusive communities that have a sense of place and belonging, with adequate provision of and access to services and facilities to meet the needs of the county's growing population						✓	
To work with other relevant organisations, through the County Development Board, to facilitate the provision of public and social services in areas of identified need throughout the county.						✓	

To work with the County Development Board and its sub-structures, to advance social inclusion and development by developing the co-ordinated delivery of services and facilities in the county.						✓	
To promote the development of social capital by providing opportunities for interaction, participation and the co-ordinated provision of public services						✓	

## 8.5.6 Libraries

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To continue to improve the library service for all.						✓	
<b>Actions</b>							
To provide a branch library in Mullinavat to service the Piltown electoral area.						✓	
To provide a new Library for the City to be located at County Hall, this will replace the existing Carnegie Library.						✓	

## 8.5.7 Health

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To facilitate the development by the Health Service Executive - South Eastern Area of a comprehensive range of health and social care services and in particular services for the elderly including the development of community, hospital, community nursing and day care services throughout the county.						✓	
To ensure that adequate land and services are available for the provision of all types of facilities for the elderly including nursing homes/retirement centre both public and private and the improvement, expansion and establishment of health services generally such as extended nursing care, day care and respite care.						✓	

## 8.6 Economic Development

### 8.6.1 Craft

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To support the development of the crafts sector and liaise with the Crafts Council of Ireland, the County Enterprise Board and other interested bodies to facilitate growth within this sector						✓	

### 8.6.2 Education

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To facilitate and promote the development of the third level outreach facility in Kilkenny City to its maximum potential.						✓	
To support the establishment of a university for the South East Region with its main campus located in Waterford City and faculty campus facilities in Kilkenny and other Hubs and County Towns within the Region.						✓	
To support the provision of a third/fourth level facility for the city and county which would include within it a creative academy.						✓	

### 8.6.3 Strategic Locations for Enterprise and Employment

	Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
<b>Kilkenny City</b>							
To make Kilkenny City & Environs a premier choice for indigenous and foreign direct investment across all sectors of the economy by developing a location that will attract and sustain indigenous and foreign direct job creating investment'.				✓			
To ensure that an adequate quantity and range of land is available for enterprise development and that the appropriate infrastructure is provided.	B1 B2 B3 HH1 S1 A1 M1 CH1 CH2 L1		B1 B2 B3 CH1 CH2				SP MM1 MM2 MM3 MM4 MM6 MM7
To liaise with the IDA, Enterprise Ireland, the County Enterprise Board, KiDCo, the Kilkenny Chamber of Commerce and Industry and other bodies to promote Kilkenny as a city for inward investment and growth of indigenous industry.						✓	
To facilitate the provision of childcare facilities in appropriate locations thereby promoting labour market participation among parents and supporting parents in accessing employment, training and education.						✓	
To provide improved road infrastructure from Kilkenny to other local urban centres and national centres, to support the provision of an improved rail service (freight and passenger) for the industrial, agricultural and service sectors having particular regard to access to and from Waterford Regional Airport and Belview Port.	A1		A1 L1 B1 B2 B3				SS SP MM1 MM2 MM3 MM4 MM8
To encourage the development of incubator units and small high technology units						✓	
<b>Belview Port</b>							
To develop the national role of the Port at Belview and the Belview industrial zone.				✓			
To prepare a local area plan for the Environs of Waterford City within County Kilkenny including the port at Belview and the Belview Industrial zone, continuing with the policy of partnership with the local community.	CH1 CH2 L1 B1 B2 B3 M1		L1 B1 B2 B3 S1				SP MM1 MM2 MM3 MM4
To ensure that sufficient and suitable land is zoned for port and industrial development at Belview in accordance with its strategic role nationally and within the Southeast Region. Such land will, normally, be protected from inappropriate development that would prejudice its long term strategic development.	CH1 CH2 L1 B1 B2 B3 M1						
<b>Enterprise and Employment in Rural Areas</b>							
To provide an adequate range of locations for both large and small scale new industrial development throughout the County. This development will, be encouraged to locate on appropriately zoned lands within the development boundaries of established settlements to facilitate more sustainable commuting patterns and to contribute to the economic development of towns and villages.	CH1 CH2 L1 B1 B2 B3 M1		L1 CH1 CH2 M1				SS SP MM5 MM6 MM7 MM8
To promote rural industries generally and to facilitate certain kinds of rural industry, especially those that are natural resource dependent (e.g. associated with forestry) to be located outside settlements in appropriate locations.			B1 B2 B3 HH1 S1 W1 W2 W3 W4 L1				TS1 TS2 SP MM1 MM2 MM3 MM4 MM5 MM8
To promote on farm – off farm enterprises associated with diversification of the existing farm enterprise.						✓	



### 8.6.4 E- Commerce

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Support and facilitate the provision of advanced communication networks and services to the extent required to contribute to national competitiveness and attract inward investment.						✓	

### 8.6.5 Other Policies

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
It will be the policy of the Council to facilitate the creation of new employment opportunities in the county by:	<b>CH1 CH2</b>		<b>L1 CH1</b>				<b>SP MM6</b>
a) Ensuring that sufficient land is zoned for industrial and commercial development.	<b>L1 B1 B2 B3 M1</b>		<b>CH2 M1</b>				<b>MM7 MM8</b>
b) Facilitating where possible the expansion of existing industries and businesses and the development of new industrial or service sector undertakings				✓			
c) Supporting with the IDA in the promotion of foreign direct investment and establishment of new industries in the County.				✓			
d) Facilitating and encouraging the establishment of small scale light industries which are considered compatible with surrounding uses on suitable sites.				✓			
e) Supporting the County Enterprise Board in the fostering and promotion of indigenous enterprises within the County.						✓	
f) Supporting in conjunction with the LEADER programme and co-operating with Local Area Partnerships in rural development projects.						✓	
g) Supporting Enterprise Ireland in the promotion of inward investment in the County						✓	
h) Preparing an integrated industrial development strategy for the County through the County Development Board in conjunction with KIDCO the County Enterprise Board, LEADER local area partnerships and Enterprise Ireland.						✓	
i) Facilitating the provision of childcare facilities in appropriate locations thereby promoting labour market participation among parents and supporting parents in accessing training, education and employment.						✓	

## 8.6.6 Retail Strategy

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs- unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely interaction with status of SEOs	Mitigation Measure Code(s) (see Section 8)
<b>Kilkenny City and Environs Policy</b>							
Over time, but unlikely to be in the timescale of this Draft Development Plan, retail warehousing parks should be located in all quarters of the City's Environs				✓			
Provision of infrastructure to ensure traffic impacts are minimised should be a key determining factor in the selection of appropriate sites, with public transport and other modes of access also being achievable	A1						SP
Relocation and upgrading of existing operations should be encouraged						✓	
No further retail warehousing parks will be granted in and around the City & Environs due to constraints on the expenditure capacity for additional comparison floorspace over the period 2008 - 2014.						✓	
<b>Waterford City Environs Policy</b>							
It is the policy of the Council to engage with the other local authorities in the South East Region in the preparation and adoption of a joint retail strategy for the greater Waterford area.						✓	
<b>District Towns Objectives</b>							
1. To sustain and improve the retail profile and competitiveness of Kilkenny City and County within the retail economy of the South East Region and beyond.					✓		
2. To provide the retail land use and planning policy framework that responds to the potential of Kilkenny City's role as a Hub within the national and regional economies and to ensure that the City and County fully play their role in achieving the objectives and targets of the NSS and the Regional Guidelines					✓		
3. To confirm a hierarchy which assists in achieving the Regional Settlement Strategy and its objectives and provides clear guidance on where major new retail floorspace would be acceptable.					✓		
4. To ensure that the retail needs of the City and County's residents are met as fully as possible within the County, taking due cognisance of the Regional Retail and Settlement Hierarchy.					✓		
5. To address leakage of retail expenditure from the County by providing the means to strengthen the range and quality of its retail offer.					✓		
6. To ensure an equitable, efficient and sustainable spatial distribution of main centres across the County.					✓		
7. To sustain and enhance the vitality and viability of the role and potential of the four District Towns and to ensure that this is not compromised by the growth of Kilkenny City and Environs or any other competing centre.					✓		
8. To encourage and facilitate the preservation and enhancement of the retail role of smaller villages and centres around the County.	CH1						
9. To encourage and facilitate innovation and diversification in the County's retail profile and offer.							
10. To encourage and facilitate the re-use and regeneration of derelict land and buildings for retail uses, with due cognisance to the Sequential Approach as indicated in the RPG.	B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 L1		CH1 CH2				MM6 MM7
11. To promote and sustain the importance of retailing in the County's tourism economy.					✓		
12. To provide the criteria for the assessment of retail development proposals.				✓			

<b>Policy</b>							
To engage with the other local authorities in the South East Region in the preparation and adoption of a joint retail strategy for the greater Waterford area.				✓			
<b>Action</b>							
To complete an integrated retail study by September 2008 which will inform the members of Kilkenny County Council as to whether a centre for Ferrybank should be designated as a town or district centre.				✓			

### 8.6.7 Specific Policies and Proposals

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Kilkenny City &amp; Environs</b>						✓	
To facilitate the development by the Health Service Executive - South Eastern Area of a comprehensive range of health and social care services and in particular services for the elderly including the development of community, hospital, community nursing and day care services throughout the county.						✓	
To ensure that adequate land and services are available for the provision of all types of facilities for the elderly including nursing homes/retirement centre both public and private and the improvement, expansion and establishment of health services generally such as extended nursing care, day care and respite care.						✓	
Over the timescale of the 2008 - 2014 City and Environs Development Plan the development and delivery of mixed use proposals for Bateman Quay - including a large component of high order comparison and speciality shopping - is a priority retail planning objective in order for the City Centre to retain its role as the premier shopping destination in the City and County.						✓	
The realisation of the McDonagh Station site, the Kmart site and Bateman Quay is a key objective of the retail strategy.						✓	
That there is an equitable distribution of new retail floorspace and town centre uses between McDonagh Station, the Kmart site and Bateman Quay to ensure that no one site dominates the retail landscape of the City or provides an alternative to the City Centre/Core shopping Area.						✓	
To carry out environmental improvements to The Parade, Rose Inn Street and Canal Square.				✓			
To continue progress with the programming and implementation of strategic road proposals.			B1 B2 B3 A1 CH1 CH2 L1				SS TS1 TS2 SP MM1 MM2 MM3 MM4 MM6 MM7 MM8
To implement the car parking strategy in the City Centre Local Area Plan 2005.				✓			
To develop a heritage and interpretation strategy linked to environmental improvement/enhancement proposals to ensure an integrated approach is adopted.				✓			
To work in partnership with local businesses, business and trade organisations, other agencies and groups and local people to deliver the expectations and targets of the City's designation as a Hub.						✓	
That planning permissions for retail warehousing floorspace will contain clear planning conditions restricting the sale of non-bulky goods as defined within the Retail Planning Guidelines. The compliance with such planning conditions will be monitored and strictly enforced						✓	

To implement the provisions of the City Centre Local Area Plan 2005.				✓			
<b>District Towns</b>							
The 2007 Review identifies the need to facilitate the enhanced vitality and viability of the four Scheduled Towns. To achieve this, the following is recommended:							
i. Callan: the continued expansion of the town's retail offer should be encouraged and facilitated. The priority will be to consolidate retail activity within the town centre. However, this may not always be possible in view of the size of site and parking requirements of modern convenience operators. There is a need to consider better meeting the local shopping and services needs of the growing residential areas to the north of the King's River. This should doubly serve to help regenerate Bridge Street. In parallel, it is recommended that an environmental strategy is prepared for the town centre which helps to create a sense of place and space.	S1		CH1 CH2				SP MM6 MM7
ii. Castlecomer: requires to witness a substantial improvement in its retail floorspace and have as its objective over the timescale of the emerging City and County Development Plans achieving designation as a Tier 1 Level 2 Sub County Town Centre and, thus, parity with Callan and Thomastown in the County Retail Hierarchy. To achieve this, enhanced awareness of the market potential of the town and its hinterland is required. Castlecomer should harness its tourism potential which will serve to enhance the town's attraction as a place for living, working, leisure and shopping. Key building blocks are its proximity to Kilkenny City, the Dunmore Caves and Jenkinstown Park with the asset of the Castlecomer Estate Yard being the catalyst for further retail and tourism supporting infrastructure. This recommendation should be pursued in conjunction with Kilkenny Tourism Board.				✓			
iii. Graigueenamanagh: a holistic approach to the regeneration of the town is required and the framework for this is set down in the 2006 Graigueenamanagh – Tinnahinch Development and Economic Study jointly commissioned by Kilkenny County Council and Carlow County Council. The catalyst for the regeneration of the town centre is identified as being tourism market driven. The key assets are the town's heritage, its annual festivals and its location on the Barrow Navigation and two National Waymarked Ways. Graigueenamanagh is identified as having potential to develop as a 'commercial services centre or hub' within the local and regional tourism economies. Through this means, there will be greater inflows of spend to help sustain and enhance the town's retail offer and attraction. An important recommendation is the need for environmental improvement and heritage interpretation strategies which provide the springboard for regeneration.				✓			
iv. Thomastown: the continued expansion of the town's retail offer should be encouraged and facilitated to ensure that Thomastown fulfils its role in the NSS and as a designated District Town in the SERPG. The priority will be to consolidate retail activity within the town centre and secure the re-use and regeneration of key buildings and sites. However, this may not always be possible in view of the size of site and parking requirements of modern convenience operators. For the town to sustain its shopping and market attraction there requires to be continued investment in the public realm and the streetscape.	S1		CH1 CH2				SP MM6 MM7
<b>General Policy</b>							
Corner Shops and Smaller Villages/Crossroads: To retain, encourage and facilitate the retail role of corner shops and small villages around the County						✓	
Enhancement of Towns and Villages: To encourage and facilitate the enhancement and environmental improvement of the County's towns and villages	B1 B2 B3 HH1 W1 W2 W3 W4 A1 M1 CH1 CH2 L1						
Re-Use and Regeneration of Derelict Land and Buildings: To encourage and facilitate the re-use and regeneration of derelict land and buildings	S1		CH1 CH2				SP MM6 MM7
Retailing in Tourism and Leisure: To encourage and facilitate the development of retailing within the tourism and leisure sectors				✓			
Innovation in the City and County's Retail Offer: To encourage and facilitate innovation in the City and County's retail offer and attraction						✓	

To ensure that the Strategy and its policies remain valid and up-to-date, it is the policy of the Councils to: <ul style="list-style-type: none"> <li>Carry out annual monitoring of expenditure and population forecasts.</li> <li>Monitor planning permissions for both new retail floorspace and change of use to keep the floorspace data up to date.</li> <li>Review the Retail Strategy's policies and objectives again in 3 years.</li> <li>Update the household and shopper survey data at the next review.</li> </ul>						✓	
<b>Derelict Sites Policy</b>							
To implement the Derelict Sites Act 1990 in order to ensure the removal of dereliction within the Plan period as resources permit.	<b>S1</b>		<b>CH1 CH2</b>				<b>SP MM6 MM7</b>

## 8.7 Rural Development

### 8.7.1 General Policy

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
a) To implement the Council's investment programme for waste water treatment and water supply schemes in the towns and villages and rural areas of the County.	<b>S1 W1 W2 W3 W4 M1</b>						
b) To improve the attractiveness of the built environment in rural towns and villages as places in which to work and live and as locations for industry, services and tourism investment.	<b>CH1 CH2 L1</b>						
c) To access and utilise government schemes, such as the Village Renewal Programme to improve the quality of the built environment of towns and villages.	<b>CH1 CH2 L1</b>						
d) To ensure that the necessary physical and telecommunications infrastructure is provided to enable existing and new high growth business to thrive.							
e) To combat isolation and disadvantage by encouraging the use of information technology in education and commerce and in the home.						✓	
f) To encourage the sustainable development of resources in rural areas to foster economic development in such sectors as agriculture, tourism including agri-tourism, forestry, farm diversification, and renewable energy resources.	<b>B1 B2 B3 HH1 S2 W1 W2 W3 W4 L1</b>						
g) Co-operate and be proactive in conjunction with BNS Rural Development with regard to proposals from the National Rural Development Programme in generating opportunities for off-farm employment.						✓	
h) To co-operate and facilitate the development of rural tourism in the County and to seek to develop that market from the established and growing tourism base of Kilkenny City.						✓	
i) To encourage the utilisation of natural resources to foster economic development by expanding rural tourism, developing renewable sources of energy, promoting agri-environment measures and the planting of new woodlands.	<b>B3</b>		<b>B1 B2 B3 HH1 S2 W1 W2 W3 W4 L1</b>				<b>SS TS1 TS2 MM1 MM2 MM3 MM4 MM5 MM8</b>



j) To preserve and retain high quality agricultural land from unsympathetic development.	<b>B3 W1 W2 W3 W4 L1</b>						
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## 8.7.2 Agriculture

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
a) Liaise with Teagasc and other farming bodies in order to prevent pollution from farm activities.	<b>B1 B2 W1 W2 W3 W4</b>						
b) Support and facilitate the work of Teagasc and other farming bodies within the County in promotion of the rural economy, including agriculture development and rural diversification.						✓	
c) To co-operate with rural development agencies such as Teagasc and BNS Leader in the development of initiatives which: <ul style="list-style-type: none"> <li>facilitate and support farm families and other small holders in the change from full to part-time farming;</li> <li>create vibrant, inclusive rural communities by promoting the social inclusion of new residents, older people and rural women, and;</li> <li>improve access and services in rural areas, in particular, rural transport and other similar initiatives operational in the county.</li> </ul>						✓	
d) Facilitate farm development to meet market and environmental requirements.	<b>B1 B2 B3 W1 W2 W3 W4 L1</b>						
e) To encourage the development of environmentally sustainable agricultural practices, to ensure that development does not impinge on the visual amenity of the countryside and that watercourses, wildlife habitats and areas of ecological importance are protected from the threat of pollution.	<b>B1 B2 B3 W1 W2 W3 W4 L1</b>						
f) Support the development of alternative income-generating opportunities from off-farm activities.						✓	
g) Co-operate and be proactive with regard to proposals from the Rural Development Programme and Rural Development Fund in generating opportunities for off-farm employment.						✓	
h) Facilitate farm diversification and encourage the sustainable development of alternative rural enterprises and the conversion of redundant farm buildings of vernacular importance for appropriate owner-run enterprises, as a way of supporting a viable rural community subject to the proper planning and sustainable development of the area.						✓	
i) Require a high standard of design and maintenance in all developments in rural areas	<b>L1</b>						
j) To require buildings and structures in visually sensitive areas: <ul style="list-style-type: none"> <li>to be sited as unobtrusively as possible;</li> <li>to be clustered to form a distinct and unified feature in the landscape;</li> <li>to utilise suitable materials and colours; and</li> <li>to utilise native species in screen planting</li> </ul>	<b>L1</b>						
k) To support the improvement and expansion of the equine industry within the county.						✓	

### 8.7.3 Fishing

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- unlikely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Liaise with the Southern Fisheries Board and with Angling Clubs and to facilitate the Board within the limits of its powers as Planning Authority in its development programme.						✓	
To encourage and support initiatives to embrace traditional fishing practices and investigate and improve the fisheries in co-operation with the Department of the Marine, the Southern Fisheries Board, community organisations and other relevant bodies.				✓			
Require that adequate provisions are made to accommodate free upstream and downstream migration of all fish in development proposals.	<b>B1 B2 B3</b>						
Protection of water quality will be a primary consideration in relation to assessing development proposals.	<b>W1 W2 W3 W4</b>						

### 8.7.4 Extractive Industries

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- unlikely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Where important min Council will seek to protect the extractive potential of such resources. eral resources have been identified and are suitable for extraction, the	<b>S2</b>						
In general encourage the development of extractive industries where it is not detrimental to the protection of the landscape, the continued operation of agriculture and the preservation of the amenities of local residents generally.	<b>S2</b>						
To minimise environmental and other impacts of mineral extraction through rigorous application of licensing, development control and enforcement requirements for quarry and other associated developments including, but not limited to, consideration of visual impacts, methods of extraction, noise levels, dust prevention, protection of ground and surface waters, impacts on residential and other amenities, impacts on the road network (particularly with regard to making good any damage to roads), road safety, phasing, re-instatement and landscaping of worked sites.					✓		
Ensure that all existing workings shall be rehabilitated to suitable land uses and that all future extraction activities will allow for the rehabilitation of pits and proper land use management.					✓		

### 8.7.5 Forestry

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To support the production of the National Indicative Forestry strategy and Indicative Forestry Strategy for the County and to have regard to this strategy in exercising its development control functions. On the completion of the national Indicative Forestry Strategy the Council will assess the need for the preparation of an Indicative Forestry Strategy for the County.				✓			
To encourage a diversity of species in afforestation proposals and in particular to require a proportion of all new forestry development to consist of native hardwood species in order to extend the range of potential end uses and to reduce the potential for adverse impact on the landscape resulting from monoculture.	<b>B3 L1</b>						
To encourage the development of farm forestry as a means of promoting rural diversity and strengthening the rural economy.				✓			
To encourage public access to forests for amenity and recreation purposes and the development of amenity forestry projects of local social, economic and tourism benefit.						✓	

### 8.7.6 Rural Transport

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Continue with the Council's planned transport infrastructure investment in National, Regional and local roads on a phased and planned basis to support people living and working in rural areas.			<b>B1 B2 B3 A1 CH1 CH2 L1</b>				<b>SS SP MM1 MM2 MM3 MM4 MM6 MM7 MM8</b>
To integrate rural transport with any urban public transport provision.	<b>A1</b>						
To initiate the establishment of a Transport Forum to oversee transport policy for the county, in conjunction with the County Development Board and/or the Transport SPC.						✓	
Support and facilitate local and community based initiatives, Rural Transport Initiative, to provide rural transport services within the County. This will improve accessibility and promote social inclusion.						✓	

## 8.8 Recreation, Tourism and the Arts

### 8.8.1 Tourism

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To sustainably increase the volume of visitors, revenue per visitor, their average length of stay and seasonal spread; whilst protecting and conserving those natural, built and cultural features that form the resources on which the County's tourist industry is based.	<b>B1 B2 B3 W1 W2 W3 W4 L1 CH1 CH2 A1</b> ✓				✓		
To encourage and support increased coordination, cohesion and linkages between agencies such as Failte Ireland South East, Kilkenny County Council and Kilkenny County Development Board and between these agencies and their equivalents in neighbouring counties.				✓			
To support and work to secure the implementation of the Kilkenny Tourism and Development Strategy 2006-2011; and the Failte Ireland Strategic Tourism Plan for the South East.				✓			
To investigate funding opportunities for the development of flagship tourism products; suggested products for development would include Rothe House and walking cycling trails development.				✓			
Encourage the provision of indoor and activities based tourism facilities and events which extend the tourism season.				✓			
Promote collective public and private sector marketing of County Kilkenny as a leisure and retail tourist destination, within Ireland and abroad.				✓			
Support the development of existing festivals and support the establishment of new festivals in appropriate locations where there is a demonstrable demand and market for them, to promote increased retail tourism throughout the County.				✓			
To support the development of niche activities, such as those relating to food (particularly value-added products), forestry (e.g. wood products), crafts, eco-tourism and agri-tourism, for example farmhouse accommodation, open farms, farm holidays, health farms, equestrian activities, bird-watching holidays; painting/photography tuition, angling tourism, field studies and hill-walking (with the co-operation of the landowners).				✓			
To facilitate the development of agri-tourism, consideration will be given to tourist facilities and tourism accommodation on agricultural holdings where the proposed units involve the reuse and refurbishment of under-utilised agricultural buildings which will remain an integral part of the landholding.				✓			
To encourage and assist development and tourist bodies in the provision of adequate recreational and tourism infrastructure and to further develop tourist orientated facilities in the County.				✓			
The Council shall investigate the potential of and opportunities for the funding of walking and cycling trails in the county; and for the development of linkages between existing trails and others in adjoining counties; and support national trail development policy including the Irish Trails Strategy.				✓			
Encourage and promote cycling-based tourism in the city and county and to support Failte Ireland's Strategy for the Development of Irish Cycle Tourism, South East Regional Report				✓			

In general, direct tourism based development, into existing settlements where there is adequate infrastructure to service development and where they can contribute to maintenance of essential rural services.				✓			
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## 8.8.2 Recreation and Amenities

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs-unlikely to be mitigated	Potential Conflict with status of SEOs-likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely interaction with status of SEOs	Mitigation Measure Code(s) (see Section 8)
<b>Policy</b>							
Use its powers under the Planning & Development Acts to ensure that adequate recreational open space and facilities are provided for all groups of the population at a convenient distance from their homes and places of work				✓			
The County Council will seek to ensure that the current and future needs are: <ul style="list-style-type: none"> <li>guided by appropriate policies and recommendations;</li> <li>reflect the need to develop a hierarchy of sports and recreational opportunities;</li> <li>targeted geographically;</li> <li>implemented and promoted by all statutory undertakers in the area, and;</li> <li>appropriately funded.</li> </ul>						✓	
The Council, with the assistance of the County Development Board and the Local Sports Partnership, will seek to: <ol style="list-style-type: none"> <li>Enhance planning of sport and recreation at local level through the Local Area Sports Partnership.</li> <li>Promote Kilkenny City, its environs and the county as a whole as a healthy area.</li> <li>Increase levels of local participation and promote the development of opportunities for all groups to become involved in sports and amenity. This is particularly relevant in the case of disadvantaged groups and specific target groups such as older people, girls and women, people with disabilities, unemployed people and those who live in disadvantaged communities or areas lacking amenity infrastructure.</li> <li>Improve access to all sectors of the population, especially the socially disadvantaged to a range of sport, recreation and leisure facilities.</li> <li>Encourage where appropriate better use of existing facilities and assist in the provision of new facilities.</li> <li>Encourage and provide facilities to enable progression through the sporting pathway of "foundation, participation, performance and excellence."</li> </ol> It will be Council's policy to maximise the use of resources. The appropriate standards are detailed in the development Control section of the Plan.						✓	
It is the policy of the Councils to support the goals and objectives of the Kilkenny Sports Partnership.						✓	
Ensure that all residents have reasonable access to a range of different types of open space.						✓	
Implement as a priority the hierarchy of open space identified in the Kilkenny Open Space, Sport and Recreation Study for the City and County.						✓	
Create a child-friendly and safe environment where the importance of play is recognised for a child's development.						✓	
Improve the quality and safety of playgrounds and play areas.						✓	



To seek the establishment of public parks along the Poccocke and Breaghagh Rivers.	<b>B3 W1</b>						
Liaise with neighbouring counties where appropriate, regarding development along the rivers.						✓	
<b>Action</b>							
It is an objective of the Council in conjunction with Kilkenny Borough Council to complete the development of the new swimming pool which incorporates other sports and leisure facilities at Scanlon Park.						✓	
Complete the River Nore Linear Park within the lifetime of the Plan	<b>B2 B3 W1</b>						
To develop a playing pitch and other recreational/community facility at the Johnswell Road Amenity Area and to support other local communities in the provision of similar facilities.						✓	
Develop three playgrounds at Newpark Close, Graiguenamanagh and Ballyhale.						✓	
Advance the planning for the provision of playground facilities at Freshford, Goresbridge, Inistioge, Gowran, Piltown, Stoneyford, Ballyragget, the Scouts Den and Loughboy Park.						✓	
To undertake a mapping exercise that identifies existing play services, facilities and amenities as well as highlights gaps in these areas across the county.						✓	

### 8.8.3 Open Space in New Residential Development

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs- unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely interaction with status of SEOs	Mitigation Measure Code(s) (see Section 8)
<b>Policy</b>							
It is the policy of the Councils, in considering applications for new development, to require the provision of appropriately located and designed open space, recreational and amenity areas.	<b>B3</b>						
Protect and improve the amenity potential and accessibility of the Rivers Suir and Barrow.				✓			
Continue to assist and co-operate with BNS Leader in the development of the River Nore Walking Route between the City and Inistioge/Thomastown.	<b>B2 B3</b>						
Working with development agencies, landowners, other legal occupiers and potential users, to develop a sustainable policy on the use of walking routes throughout Kilkenny.				✓			
Require that development along rivers set aside land for pedestrian routes that could be linked to the broader area and any established settlements in their vicinity.	<b>B3</b>						
Impose a development levy to provide walking amenities and facilities						✓	
To investigate the potential of and opportunities for the funding of walking and cycling trails in the county; and for the development of linkages between existing trails and others in adjoining counties; and support national trail development policy including the Irish Trails Strategy.				✓			
Encourage and promote cycling-based tourism in the city and county and to support Fáilte Ireland's Strategy for the Development of Irish Cycle Tourism, South East Regional Report.						✓	
Preserve and protect existing rights of way and create new rights of way in the interest of amenity as the opportunity or need arises.						✓	
Encourage the provision of access routes to amenity areas in co-operation with landowners and protect amenity areas from infringement by inappropriate development.						✓	
Seek to improve the provision of local parks and play spaces and extend those spaces and pathways that can usefully form green links, footways and cycle ways to connect residential areas with parks and open spaces and with each other.	<b>B3</b>						

Make existing areas of open space as user-friendly as possible. As well as seeking to ensure that new open space is well integrated to proposed development it is essential that open space has good pedestrian, cyclist and disabled access.						✓	
<b>Action</b>							
Research and map the existing network of traditional paths used for leisure purposes with the intention of determining the legal basis and status of their use.						✓	
Undertake a survey of existing public rights of way in the county and establish a register within two years of the adoption of the Plan						✓	

## 8.8.4 The Arts / Cultural Development

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Promote the development of the Arts in the City and County through the implementation of the Kilkenny Arts Strategy.						✓	
Provide studio/rehearsal/performance space.						✓	
Establish an Integrated Cultural Facility for Kilkenny, in co-operation with the Board of the Butler Gallery, the Heritage Council, The Arts Council, the National Museum and the Crafts Council.						✓	

## 8.9 Natural Heritage and Biodiversity

### 8.9.1 Introduction

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To prepare and implement, in partnership with the Kilkenny Heritage Forum and relevant stakeholders, a County Heritage Plan and County Biodiversity Action Plan.				✓			
To support and facilitate the Kilkenny Heritage Forum				✓			
To continue and to develop the Council's advisory/educational role with regard to Heritage matters through the Heritage Plan and to promote awareness and understanding of and access where appropriate to heritage.				✓			

## 8.9.2 Natural Heritage and Biodiversity

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To protect, conserve and enhance County Kilkenny's natural heritage and biodiversity, to include the diversity of habitats found in the county e.g watercourses and waterbodies; trees; woodlands and hedgerows; fens; marshes; estuaries and wetlands; geological and geomorphological sites/features; improved and semi-natural grasslands; etc.	<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 L1</b>						
To protect natural heritage sites designated in National and European legislation. This includes sites proposed to be designated or designated as Special Areas of Conservation (SAC), Natural Heritage Areas (NHA), Nature Reserves and Wildfowl Sanctuaries. This protection will extend to any additions or alterations to sites that may arise during the lifetime of this plan.	<b>B1 B2 B3</b>						
To assess all proposed developments (individually or in combination with other proposals, as appropriate) which are likely to impact on designated natural heritage sites or those sites proposed to be designated.				✓			
To consult with the prescribed bodies and relevant government agencies when assessing developments which are likely to impact on designated natural heritage sites or those sites proposed to be designated.				✓			
To ensure that any development in or near a designated natural heritage site will avoid any significant adverse impact on the features for which the site has been designated.	<b>B1 B2 B3</b>						
To require an appropriate environmental assessment in respect of any proposed development likely to have an impact on a designated natural heritage site, or those sites proposed to be designated.				✓			
To protect and, where possible, enhance to the plant and animal species and their habitats that have been identified under EU Habitats Directive, EU Birds Directive, the Wildlife Act and the Flora Protection Order.	<b>B1 B2 B3</b>						
Ensure that development does not have a significant adverse impact on plant animal or bird species protected by national or European legislation.	<b>B1 B2 B3</b>						
Consult with the National Parks and Wildlife Service, and take account of any licensing requirements, when undertaking, or approving development which is likely to affect plant, animal or bird species protected by national or European legislation.	<b>B1 B2 B3</b>						
To protect and enhance wildlife habitats and landscape features which form part of habitat networks, such as river corridors and associated habitats.	<b>B3 W1</b>						
Identify, in co-operation with the relevant statutory authorities and other relevant groups, sites of local nature conservation interest, not otherwise protected by legislation.				✓			
To ensure that any development in or near sites of local conservation interest will minimise any significant adverse impact on the features for which the site has been designated.	<b>B3</b>						
Minimise the loss of habitats and features of the wider countryside (hedgerows, ponds, streams, wetlands, trees etc) through the planning process, which are not within designated sites.	<b>B3</b>						
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.	<b>B3 L1</b>						
Prepare a County Bio-Diversity Plan, in accordance with the National Bio-diversity Plan (2002), and to liaise with all relevant agencies and community groups in its preparation and implementation.	<b>B1 B2 B3</b>						

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Integrate bio-diversity considerations into Council plans, programmes and activities.				√			
Protect from inappropriate development, County Geological Sites, or parts thereof, and geological Natural Heritage Areas that become designated during the lifetime of this plan.	<b>B1 B2</b>						
To consult with the Geological Survey of Ireland when assessing developments which are likely to impact on County Geological Sites, or geological Natural Heritage Areas which may be designated during the lifetime of this plan.				√			
To assess all proposed developments with respect to geology (individually or in combination with other proposals, as appropriate) which are likely to impact on County Geological Sites, or geological Natural Heritage Areas that become designated during the lifetime of this plan.				√			
Ensure that any development in or near County Geological Sites will avoid any significant adverse impact on the features for which the site is considered important.	<b>B2</b>						
To consult with the Geological Survey of Ireland in advance of any proposals for major developments that will entail significant ground excavation, such as quarrying, road cuttings, major drainage works and foundations for major buildings/building complexes.				√			
Maintain, and where necessary facilitate the enhancement of the conservation values of those features or areas of county geological and or geomorphological importance.	<b>B1 B2 B3 L1</b>						
To protect and manage existing woodlands, trees and hedgerows which are of amenity or biodiversity value and/or contribute to landscape character of the county and to ensure that proper provision is made for their protection and management when undertaking, approving or authorising development - where removal of woodlands, trees or hedgerows is necessary to facilitate any essential public infrastructural projects, the emphasis will be on management and ameliorative measures to mitigate the impact of any such development.	<b>B1 B2 B3 L1</b>						
To ensure that when undertaking, approving or authorising development that sufficient information is provided to enable an assessment of impacts on woodlands, trees, and hedgerows.				√			
To conserve important trees, groups of trees or woodlands, using Tree Preservation Orders, as appropriate.	<b>B3</b>						
In partnership with the Forest Service, to provide guidance to developers and others on requirements and procedures in relation to tree felling.						√	
Have regard to sites of significance identified in the Kilkenny Woodland Survey 1997 in the assessment of planning applications.				√			
Have regard to, and seek the conservation of, the trees of County Kilkenny identified in the Tree Register of Ireland.	<b>B3</b>						
Support the provisions of Wildlife (Amendment) Act 2000, which seeks to prohibit the cutting of hedges within the bird nesting period (1st March until September 1st).	<b>B3</b>						
Retain hedgerows, and other distinctive boundary treatment such as stone walls, when undertaking, authorising or approving development, where possible.	<b>B3 L1</b>						
Where the loss of hedgerows is unavoidable, for health and safety reasons, as part of a development, to ensure that a new hedgerow is planted using native species, and species of local provenance (see Appendix C)	<b>B3 L1</b>						
Where the loss of stone wall is unavoidable, for health and safety reasons, as part of a development, to ensure that the wall is re-built using local stone and local design.	<b>B3 L1</b>						
Discourage the felling of mature trees to facilitate development and encourage tree surgery rather than felling, where possible.	<b>B3 L1</b>						
Ensure that new development incorporates the planting of native broadleaved species, and species of local provenance, as appropriate.	<b>B3 L1</b>						
Continue to co-operate with Coillte and other forestry bodies to seek an increase in appropriate afforestation, particularly of native species, and maintain and improve access to woodlands for recreational purposes.				√			
Seek, where appropriate and feasible, the extension of existing woodlands and/or creation of new woodlands, based on planned planting and management schemes, and favouring the use of native species.	<b>B3</b>						

Kilkenny County Council will promote the planting of native tree and shrub species, by committing to using native species (of local provenance wherever possible) in its landscaping work and on County Council property.	<b>B3 L1</b>						
Co-operate with the (Heritage Section) DEHLG and other interested parties to facilitate the protection, promotion and enhancement of significant historic gardens and designed landscapes in the county and to support public awareness, enjoyment of and access to these sites.	<b>B3 L1 CH1</b>						
Have regard to the historic gardens and designed landscape sites in County Kilkenny, identified in the National Inventory of Architectural Heritage.						✓	
Discourage development that would lead to a loss of, or cause damage to, the character, the principal components of, or the setting of parks, gardens and demesnes of special historic interest.	<b>B3 L1</b>						
Protect and enhance the natural heritage and landscape character of waterway corridors and wetlands and to maintain them free from inappropriate development.	<b>B3 L1</b>						
In partnership with the National Parks and Wildlife Service, Waterways Ireland and other relevant stakeholders to facilitate public access to, and understanding of, waterways corridors and wetlands where feasible and appropriate.						✓	
Protect items of architectural heritage and industrial archaeological interest associated with waterways corridors.	<b>L1 CH1 CH2</b>						
To consult with the Eastern Regional Fisheries Board and the National Parks and Wildlife Service prior to undertaking, approving or authorising any works or development which may impact on rivers, streams and waterways.	<b>W1 W2 W3 W4</b>						
Preserve, protect and where necessary encourage the use of, heritage/traditional varieties of plants and trees that form part of the local/regional biodiversity resource, and that contribute to local identity.	<b>B1 B2 B3 L1</b>						
<b>Action</b>							
To develop and implement a Hedgerow Management Awareness and Conservation Strategy in consultation with all relevant agencies, as part of the Heritage Plan.				✓			
To provide Supplementary Planning Guidance, in relation to conserving and enhancing biodiversity in the context of development.				✓			
To carry out surveys of significant trees and hedgerows in the county during the lifetime of this plan, as appropriate and feasible.						✓	
Investigate the possibility of updating the Woodland Survey of Kilkenny, in partnership with relevant stakeholders						✓	

### 8.9.3 Landscapes

	Likely to Improve status of SEOs	Probable Conflict with status of SEOs- unlikely to be mitigated	Potential Conflict with status of SEOs- likely to be mitigated	Uncertain interaction with status of SEOs	Neutral Interaction with status of SEOs	No Likely interaction with status of SEOs	Mitigation Measure Code(s) (see Section 8)
<b>Views and Prospects Policies</b>							
To preserve and improve places or areas from which views or prospects of high amenity exist, as identified in Appendix D.	<b>L1</b>						
<b>Landscape Character Assessment Policies</b>							
Seek to preserve and protect the landscape character, quality and distinctiveness of County Kilkenny.	<b>L1</b>						
Assess developments having regard to the guidance set out in the Landscape Character Assessment.	<b>L1</b>						



Proposed developments should be consistent with the various landscape policies outlined for each landscape character area specified in the this draft plan whilst also seeking to minimise their visual impact, particularly in areas designated as sensitive and vulnerable landscapes.							
To require that any necessary assessments, including visual impact assessments, are made when undertaking, authorising or approving development.				√			
<b>Policies for Upland Areas</b>							
To consider development on steep slopes, ensuring that it will not have a disproportionate or dominating visual impact on the surrounding environment as seen from areas of the public realm.	L1						
To ensure that development will not have a disproportionate visual impact (due to excessive bulk, scale or inappropriate siting) and will not significantly interfere or detract from scenic upland vistas, as identified in the Development Plan, when viewed from areas nearby scenic routes, viewpoints or settlements.	L1						
To facilitate developments that have a functional and locational natural resource requirement to be situated on steep or elevated sites (e.g. reservoir, telecommunications or wind energy structures) with reference to the appropriate County strategies currently in place, which ensure that any residual adverse visual impacts are minimised or mitigated.	L1						
To maintain the visual integrity of areas, which have retained a predominantly undisturbed upland character.	L1						
To have particular regards to potential impacts of new development on any sensitive upland areas.	L1						
To facilitate appropriate development that reflects the scale, character and sensitivities of the local landscape.	L1						
The difficulty of establishing and maintaining screening vegetation shall be a material consideration when evaluating proposals for development within sensitive areas of the uplands.	L1						
<b>Policies for Lowland Areas</b>							
To recognise that this policy area contains the majority of the County's population. These also incorporate most of the major national primary and regional roads.						√	
To continue to permit development that can utilise existing infrastructure, whilst taking account of local absorption opportunities provided by the landscape and prevailing vegetation.				√			
To continue to facilitate appropriate development in a manner that respects the scale, character and sensitivities of the landscape, recognising the need for sustainable settlement pattern and economic activity within the County.	L1						
To recognise that in this low lying open environment, tall and bulky development sometimes can have a disproportionate impact against the landscape particularly when viewed from the predominantly low lying areas of the public realm. Visually obtrusive and/or insensitive development shall be discouraged in such instances.	L1						
<b>Policies for River Valleys</b>							
To direct new development whenever possible towards the vicinity of existing structures and mature vegetation.	L1		B3				SP MM4
To ensure that development will not detract from scenic vistas, especially from bridges, as identified in the development plan, and visible from relevant scenic routes and settlements.	L1 CH2						
To continue to permit development that can utilise existing structures, settlement areas and infrastructure, whilst taking account of the visual absorption opportunities provided by existing topography and vegetation.	L1 M1						
To control development that will adversely affect distinctive linear sections of river valleys, especially open floodplains, when viewed from relevant scenic routes and settlements.	L1						
To facilitate appropriate development that reflects the scale, character and sensitivities of the local landscape.	L1						
<b>Policies for Transitional Areas</b>							
To maintain the visual integrity of areas, which have retained a predominantly undisturbed upland character.	L1						
To facilitate appropriate development that reflects the scale, character and sensitivities of the local landscape recognising the need for sustainable patterns and economic activity within the County.	L1						
To recognise that the lowlands are made up of a variety of working landscapes that are critical resources for sustaining the economic and social well-being of the County.						√	

To continue to permit development that can utilise existing infrastructure, whilst taking account of local absorption opportunities provided by the landscape and prevailing vegetation	L1 M1						
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## 8.9.4 Built Heritage

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Introduction - Policy</b>							
To conserve and enhance the built heritage of County Kilkenny.	CH1 CH2		S1				SP
<b>Archaeology - Policy</b>							
Protect and enhance archaeological sites, monuments (including their setting), underwater archaeology, 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 archaeological remains.	CH1		S1				SP
To ensure the protection of archaeological material in situ by ensuring that only minimal impact on archaeological layers is allowed.	CH1						
To require an appropriate archaeological assessment to be carried out in respect of any proposed development likely to have an impact on a Recorded Monument, a Zone of Archaeological Potential, or their settings.				√			
Promote pre-planning consultations in relation to the archaeological heritage with the planning authority and with the Department of the Environment, Heritage and Local Government in its capacity of being charged with the implementation of the National Monuments Acts.				√			
To ensure the preservation in-situ, or preservation by record of: (a) The archaeological monuments included in the Record of Monuments and Places as established under section 12 of the National monuments (Amendment) Act, 1994 and in the Urban Archaeological Survey of County Kilkenny. (b) Any other sites and features of historical or archaeological interest. (c) Any subsurface archaeological features that may be discovered during the course of infrastructural/development works.	CH1		S1				SP
To ensure that development in the vicinity of a Recorded Monument or Zone of Archaeological Potential does not seriously detract from the setting of the feature, and is sited and designed appropriately.	CH1						
To require that sites of archaeological interest shall be subject to archaeological investigations and recording according to best practice, in advance of redevelopment where preservation in situ is not feasible.	CH1						
Facilitate the dissemination of the results of archaeological excavation in a timely and appropriate manner.	CH1						
Facilitate and where feasible create public rights of way to sites of archaeological and historical interest and to National Monuments in state and Local Authority ownership in the county. The Council will also seek the preservation, maintenance and improvement of all existing right of ways to such areas where appropriate.				√			
Require the retention of surviving medieval plots and street patterns in the villages and towns of Kilkenny and to facilitate the recording of evidence of ancient boundaries, layouts etc in the course of development.	CH1						
Provide guidance to developers and property owners regarding the archaeological implications of a proposed development.				√			

To acknowledge the importance of underwater archaeology by requiring that any proposed developments that may have implications for the underwater heritage shall be subject to an underwater archaeological assessment in advance of works.	CH1						
To facilitate the implementation of conservation plans <sup>8</sup> prepared with the support of the County Council over the lifetime of this plan - A conservation plan is a document which explains why a site is significant and how that significance will be retained in any future use, alteration, development or repair. Conservation plans provide a framework for the care and management of sites of heritage significance	CH1						
Conserve and protect historic graveyards and churches within Kilkenny and to encourage their maintenance in accordance with conservation principles and as resources allow.	CH1						
To continue to support and assist communities in the care and conservation of historic graveyards through the Historic Graveyards Grants Scheme.	CH1						
<b>Archaeology - Action</b>							
In partnership with the Kilkenny Heritage Forum, to carry out a review of mining heritage, structures and features and to use this as a pilot for the review of the Industrial Archaeological Survey.				√			
<b>Architecture - Policy</b>							
Ensure the conservation and protection of the architectural heritage of County Kilkenny for future generations 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.	CH2		S1				SP
To have regard to the Architectural Heritage Protection Guidelines issued by the Department of the Environment Heritage and Local Government in 2004 when assessing proposals for development affecting a protected structure							
To encourage the sympathetic retention, reuse and rehabilitation of protected structures and their setting.							
Protect structures contained in the Record of Protected Structures and features that contribute to the character of Architectural Conservation Areas.	CH2		S1				SP
Seek, where appropriate, the conservation and enhancement of items in the Record of Protected Structures.	CH2		S1				SP
To protect elements of designed landscapes of special interest located within the attendant grounds of Protected Structures, including boundary features.	CH2		S1				
To require an architectural impact assessment/conservation method statement for developments within the grounds of country house estates which are Protected Structures.	CH2						
Promote by example the principles of best practice in conservation of the built heritage through the custodianship of Protected Structures in the Council's ownership/care.	CH2						
Ensure protection of the architectural heritage through promoting the importance of regular maintenance of structures contained within the Record of Protected Structures.	CH2						
Provide assistance to owners of protected structures in undertaking essential repairs and maintenance by the provision of relevant information.	CH2						
To protect, conserve and where necessary restore or enhance, the quality, character and distinctiveness of the townscapes of the county.	CH2 L1						
<b>Architectural Conservation Areas Policies</b>							
To retain and enhance the historic street pattern, in particular historic structures and plot divisions within the ACA.			S1				SP
To ensure the preservation of the special character of each ACA particularly with regard to building scale, proportions, historical plot sizes, building lines, height, general land use, building materials, historic street furniture and paving.	CH2		S1				SP
To have regard to the Architectural Heritage Protection Guidelines, issued by the Department of the Environment Heritage and Local Government when assessing proposals for development affecting the character of an ACA	CH2		S1				SP

To consider the designation of Architectural Conservation Areas where appropriate and provide a local policy framework for the preservation of the character of these areas.	CH2		S1				SP
To ensure the retention, repair rather than replacement and the regular maintenance of original/early features in buildings which contribute to the character of an ACA such as chimney stacks, roof coverings, roof profiles, external wall treatments, doors and windows, shopfronts and pubfronts and to ensure the use of appropriate materials and repair techniques when repairs are being carried out.	CH2		S1				
To ensure that inappropriate materials such as windows, doors and rainwater goods constructed in aluminium or uPVC are not introduced to buildings within ACAs.	CH2		S1				SP
To encourage high quality, contemporary design and materials where appropriate when new buildings are being introduced into an ACA and the retention of the historic scale and plot size	CH2		S1				
To ensure the preservation of the character of an ACA when assessing proposals for advertising	CH2						
To retain historic items of street furniture where they contribute to the character of the ACA and to protect historic items of street furniture and roadside items as appropriate.	CH2						
To ensure the conservation of historic shopfronts and pubfronts.	CH2		S1				
Where replacement is necessary, to encourage the introduction of shopfronts and pubfronts of contemporary high quality design and materials.	CH2						
To seek the retention of mature trees/significant planting (those in good condition) which contribute to the character of each ACA where appropriate.	CH2						
<b>Architectural Conservation Areas Actions</b>							
To designate Architectural Conservation Areas as appropriate and to provide a local policy framework for the preservation of the character of the designated areas.	CH2		S1				
<b>Townscapes Policy</b>							
To protect, conserve and where necessary restore or enhance, the quality, character and distinctiveness of the townscapes of the county.	CH2						
<b>Street Furniture and Roadside Features Policy</b>							
Protect and enhance historic items of street furniture and roadside features, as appropriate.	CH2						
<b>Features of Cultural Heritage Interest Policy</b>							
To preserve, protect and where necessary enhance, significant heritage objects such as mass rocks and holy wells and/or other significant cultural features that form part of the cultural heritage of the County.	CH2						
<b>The Vernacular Built Heritage Policies</b>							
To apply the conservation principles and guidelines in practice as set out in the ICOMOS Charter on the Built Vernacular Heritage (Mexico 1999) when considering proposals to adapt vernacular buildings to meet contemporary living standards and needs.	CH2		S1				SP
To promote the retention and re-use of the vernacular built heritage through increasing public awareness of its potential for re-use and its adaptability to change.	CH2		S1				SP
<b>The Vernacular Built Heritage Actions</b>							
To respond to the Ministerial recommendation for addition to the RPS of all vernacular structures of Regional rating and above included in the National Inventory of Architectural Heritage for County Kilkenny.	CH2		S1				SP
To carry out a review of the existing surveys of thatched structures carried out in the county in the 1990's.				√			
To consider for inclusion in the RPS all thatched structures of special interest.	CH2						
<b>Farm Villages of South Kilkenny Action</b>							
To investigate the possibility of preparing Conservation Plans and possibly the designation where appropriate of ACAs for the villages of Licketstown, Glengrant, Luffany, Corludy, and Portnahully (located in the parish of Mooncoin) and Listrolin (Mullinavat parish), and to be proactive in encouraging preservation of the character of these unique village settlements.	CH2		S1				SP
<b>Floodlighting Policies</b>							
To require an appropriate assessment of the potential impacts of proposals to floodlight buildings and structures.				√			

To ensure the protection of the special character and setting of protected structures and of an ACA when considering proposals for floodlighting.	CH2						
To ensure the avoidance of the spillage of potential obtrusive light to adjacent areas and to avoid unnecessary over lighting.	CH2 L1						
To provide guidance to developers and others in relation to floodlighting	CH2 L1						
<b>Place Names Policies</b>							
To preserve historic place names and historic street names.						✓	
To ensure that the names of all new developments shall reflect local historical, heritage or cultural associations.						✓	
To encourage the use of bi-lingual and Irish-Language place names and signs.						✓	
To place a condition on grants of planning permission requiring the agreement of place names between the developer and the Planning Authority.						✓	
To provide guidance to developers and others in relation to naming of new developments.						✓	

## 8.10 Infrastructure and Environment

### 8.10.1 Climate Change

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Action</b>							
To prepare a County Climate Change Action Plan over the course of this Development Plan.	A1						

### 8.10.2 Transport

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Develop an integrated sustainable system of transport for the county involving road, rail, bus, cycling and walking.	A1						
To facilitate the development of alternative transport initiatives particularly in rural areas in order to reduce isolation and promote social inclusion.				✓			

Co-operate with the National Roads Authority in the development of an integrated road network for the County.				✓			
To improve facilities for pedestrians and access facilities for people with special mobility needs in line with the aims of the European Charter of Pedestrian Rights.	<b>A1 HH1</b>						

### 8.10.3 Road Network

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To safeguard the capacity of the National Road network within the county by the restriction of access points to the network and the significant intensification of existing access points.	<b>B1 B2 B3 A1 CH1 CH2 L1</b>		<b>B1 B2 B3 A1 CH1 CH2 L1</b>				<b>MM1 MM2 MM3 MM4 MM6 MM7 MM8</b>
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.				✓			
To continue to implement the Government's strategy for road safety.	<b>HH1</b>						
To maintain, develop and improve existing roads and to construct new roads as needs arise and resources permit.			<b>B1 B2 B3 A1 CH1 L1</b>				<b>MM1 MM2 MM3 MM4 MM6 MM8</b>
To assist and facilitate the development of the National road network in accordance with Transport 21 and with the policy of the National Roads Authority as it applies to the provision of national routes from Dublin to Cork (N/M8) and Dublin to Waterford (N9 & N10) and their ancillary roads and services.			<b>B1 B2 B3 A1 CH1 L1</b>				<b>SP MM1 MM2 MM3 MM4 MM6 MM8</b>
Exercise control over new developments requiring direct access to regional roads by restricting new access points to a minimum to preserve their strategic function and in the interests of traffic safety.				✓			
To co-operate with the National Roads Authority to identify the need for service areas and/or rest areas for motorists along the route of the N8/N9 dual carriageway and to assist in the implementation of suitable proposals for provision of service and/or rest areas.	<b>HH1</b>						
It is an objective to complete the following major road improvement projects over the plan period:  National Primary Routes a) To complete the N8/M8 route (Cullahill to Cashel) to Motorway or Dual carriageway standard. b) To complete the N9 (Waterford to Dublin) to motorway /dual carriageway standard. c) To complete the Waterford bypass and second river crossing along the N25 to dual carriageway standard. d) The upgrading of the N25 route between Waterford and New Ross with a bypass for New Ross. e) The completion of the upgrading of the N24 Waterford to Carrick-on-Suir route including a bypass for Mooncoin. f) Continue with the pavement improvements on the existing N9, N10, N24 and N25 routes. g) Improvement of the existing N10 Ring road, from the Carlow Road Roundabout to the Waterford Road Roundabout.				✓			



<p>h) Improvement of the existing N10 from the Carlow Road Roundabout to the Leggetsrath Roundabout.</p> <p>i) To improve, in accordance with best design standards and in accordance with proper planning, the connectivity between the existing N10 National Primary Route and the proposed N9 link. The location of connection to be decided following full spatial planning, technical and economic evaluation and in consultation with the National Roads Authority.</p> <p>National Secondary Routes</p> <p>a) The completion of the outer ring road to Kilkenny City from the N10 Carlow road to the N77 Castlecomer Road</p> <p>b) The realignment of the N76 Callan to Kilkenny road</p> <p>c) The realignment of the N77 from the proposed Castlecomer roundabout to the county boundary with Laois</p> <p>d) To identify and protect a route corridor for the northward extension of the Waterford outer ring via third river crossing to the N25.</p> <p>Regional Roads</p> <p>a) Completion of the relief road for Graiguenamanagh.(R705)</p> <p>b) Continue the pavement improvement programme for the Regional Road Network</p> <p>c) To seek an upgrade of the R700 between New Ross and Kilkenny to National Secondary status and to provide a relief road for Thomastown.</p> <p>d) Improvement of the Kells Road, (R697) from Upper Patrick Street to the N76 Ring Road.</p> <p>e) To improve substandard sections of regional roads throughout the County, in particular those most heavily trafficked, and those providing access to existing or proposed industrial, residential or commercial developments.</p> <p>f) To seek an upgrade of the R693 Kilkenny to Urlingford road to National Secondary status and to improve the road realignment in its entirety.</p> <p>Local Roads</p> <p>a) To continue with the restoration and improvement of the local road network within the county under the Multi-Annual Roadworks Programme.</p> <p>b) To improve substandard sections of local roads throughout the county, in particular those most heavily trafficked, and those providing access to existing or proposed industrial, residential or commercial developments.</p>							
<p>All significant development proposals will be required to have transport and traffic assessments carried out in accordance with the publication "Traffic Management Guidelines" published by the DoEHLG/DoT/DTO.</p>				√			

### 8.10.4 Public Transport

	Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
<b>Policy</b>							
Support the development of a comprehensive and integrated public transport network in the South-East Region in consultation with the relevant service providers and the Regional Authority.	A1						
Encourage the use of public transport accessible by all, in preference to the private car, both on grounds of sustainability, and on grounds of proper planning and development.	A1						

Seek the improvement of services to and from Kilkenny City in particular the provision of commuter services between major urban centres and towns within the county, the region and to and from Dublin City for the benefit of the commercial and tourism sectors.	A1						
Seek to implement the South-East Regional Passenger Transport Strategy 2002-2012.	A1						
To assist and promote the development of rail cargo depots and rail connections at Belview and Maddockstown in co operation with the relevant stakeholders and encourage a move to rail freight.	A1						
Co-operate with the various public and private agencies responsible for transport services within the County in the provision of new services and supporting infrastructure.	A1						
To facilitate the provision of Bus shelters as appropriate.						✓	
Support and cooperate in the development of a high-quality bus-based public transport system in the Waterford City & Environs	A1						
Support transport initiatives in rural areas which will help to improve communications and reduce isolation	A1						
To facilitate parking provision for tourist buses in towns and villages and at tourist attractions.	A1			✓			
The use of the rail network for freight services will be promoted.	A1						
To protect and reserve free from development the line of the Waterford – New Ross railway.	A1						
To promote and encourage the intensified use and further development of the Rosslare to Limerick rail link for freight and passenger traffic in the interests of promoting sustainable commuting patterns and assisting in the development of the Atlantic Gateways Initiative.	A1						
To assist and promote the development of rail cargo depots and rail connections at Belview and Maddockstown in co-operation with the relevant stakeholders and encourage a move to rail freight.	A1						

## 8.10.5 Ports and Rivers

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policies</b>							
Facilitate and promote port development and associated industrial and distribution activities by means of reservation or purchase of land and by the upgrading of access routes				✓			
Seek the upgrading of intra-regional and national routes giving access to Belview Port				✓			
Seek the upgrading of those elements of the national rail network which serve Belview and to develop a rail cargo depot with freight and container handling equipment	A1						
Continue to develop a flagship industrial park of regional and national importance at Belview, in association with the IDA, Waterford Port Authority and other development agencies as appropriate.				✓			
<b>Action</b>							
To prepare a Local Area Plan for the Waterford Environs incorporating the area identified in the Area Action Plan (2002) as Belview Port.	CH1 CH2 L1 B1 B2 B3 M1		L1 B1 B2 B3 S1				SP MM1 MM2 MM3 MM4
To deliver water supply to the Belview area.				✓			
To extend the gas pipeline to Belview.				✓			

To extend and improve telecommunications services, particularly broadband, at Belview.					✓		
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### 8.10.6 Airports

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Support the continued development of airport facilities and services at the South East Regional Airport to the benefit of industrial commercial and tourism development.				✓			
Support the continued development of airport facilities at Kilkenny aerodrome.				✓			
Facilitate the future development of Kilkenny aerodrome by reserving air corridors as necessary.						✓	

### 8.10.7 Energy and Telecommunications Facilities

#### 8.10.7.1 Gas

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Action</b>							
To secure an extension of the gas network to Belview.				✓			

#### 8.10.7.2 Renewable Energy

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>General Policy</b>							
Work with all relevant agencies to support the development of alternative forms of energy where such developments are in accordance with the proper planning and land use evaluation of the area.						✓	

<p>Encourage high standards of energy efficiency in all building developments and encouraging developers, owners and tenants to improve the environmental performance of the building stock, including the deployment of renewable energy.</p>					✓	
<p><b>Wind Energy Policy</b></p>						
<p>(i) Allow development in all areas highlighted as being 'Acceptable in Principle'. All permissions shall have a 20-year life and it is anticipated that all windfarm sites within this Strategy Area will be intensified in the future by:-</p> <ul style="list-style-type: none"> <li>- Taller turbines with larger swept areas.</li> <li>- Higher densities (closer spacing of turbines).</li> <li>- More advanced technology with higher efficiencies of energy capture.</li> </ul> <p>(ii) The boundaries of the current Strategy Areas will be reviewed once substantial wind energy development has occurred within them – with a view to extending the designated 'Acceptable in Principle' areas having regard to:</p> <ul style="list-style-type: none"> <li>- The alteration to the landscape character of the area due to the proximity of established windfarm projects.</li> <li>- The requirements for alternative energy at that time.</li> <li>- The configuration and availability of grid connections.</li> </ul> <p>In addition, guidance is also provided on different scales of wind energy development. The Council's policy on such development is as follows:</p> <p>(iii) Large-Scale Wind Energy Developments</p> <p>The clustering of large-scale wind energy developments will in usual circumstances only be considered in the areas identified on the Wind Energy Map as being 'Acceptable in Principle'. The rationale behind this policy is to minimise the visual impacts of such large scale developments, in addition to effects on the environment of County Kilkenny as a whole, as well as to facilitate appropriate grid connections.</p> <p>(iv) Small-Scale Wind Energy Developments</p> <p>The Council recognises that there is growing interest in developing small-scale community based wind energy projects in rural areas, particularly as a means to diversify the rural economy and thereby allowing the local community to benefit directly from the local wind energy resource. In the policy areas identified as being 'Acceptable in Principle' and areas 'Open for Consideration' in the Wind Energy Strategy Map, the following proposals will be considered on a case-by-case basis:</p> <ul style="list-style-type: none"> <li>- comprising no more than 5 turbines,</li> <li>- where the total output is not greater than 5 megawatts,</li> <li>- where the wind turbine heights do not exceed 30m above ground level measuring to the upper most tip of a vertically extended blade, and</li> <li>- where the availability of access to the electricity grid is suitably demonstrated.</li> </ul> <p>Any such proposals must also satisfy the necessary technical considerations including visual and noise impacts.</p> <p>(v) Individual Wind Turbines</p> <p>It is recognised that landowners in rural areas may wish to harness wind energy for private use. This is considered a reasonable use of renewable natural resources that also provides opportunities to augment farm incomes.</p> <p>Planning applications for individual wind turbines shall be considered on their merits subject to the general provisions of the Development Plan and to the specific guidance on individual wind turbines below:-</p> <ul style="list-style-type: none"> <li>- Turbines shall be limited to 1 per holding</li> <li>- Turbine height shall not exceed 20 metres measuring to the upper most tip of a vertically extended blade</li> <li>- Turbines shall generally be coloured mid to dark grey and shall not contrast with surrounding colours.</li> </ul> <p>vi) Autoproducer (D52, D123, D228)</p> <p>Another category is termed the "Autoproducer" which is where an industry/large energy user uses a wind turbine to feed its own energy consumption.</p> <p>These will be considered on their merits but will generally only be acceptable where:</p> <ul style="list-style-type: none"> <li>• the turbine proposed is for a significant energy user,</li> </ul>			L1	✓		MM8

<ul style="list-style-type: none"> <li>the location of the turbine is within the curtilage of the facility or immediately adjacent.</li> <li>The site already contains significant industrial scale buildings and structures.</li> </ul> <p>All wind farm applications shall be referred to RTENL (RTE Transmissions Network Limited). Wind farm development will not be allowed within 2km of any registered thoroughbred stud farm facility.</p>							
<b>Bioenergy Policy</b>							
Facilitate the development of projects that convert biomass to energy.				✓			
Locate biomass installations in areas that do not affect residential or visual amenity and which are served by public roads with sufficient capacity to absorb increased traffic flows.						✓	
<b>Energy Recovery from Waste</b>							
Seek to respond positively to applications for waste to energy projects in the context of a sustainable energy policy and the Joint Waste Management Plan.						✓	
Examine the feasibility of recovering energy from the landfill gas at Dunmore Landfill.						✓	

### 8.10.7.3 Sustainability and Energy Efficiency in Buildings

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policies</b>							
To devise a Sustainability Checklist in conjunction with the Carlow-Kilkenny Energy Agency.						✓	
Encourage A energy ratings for all new dwellings and non-residential buildings, in conjunction with the Carlow-Kilkenny Energy Agency and Sustainable Energy Ireland.						✓	
Require that as part of any planning application, a statement of intent with calculations be submitted showing how the proposal will comply with Part L of the Building Regulations, in relation to the CO2 emission rate (CDER).						✓	
Require that planning applications demonstrate that due consideration has been given to the technical, environmental and economic feasibility of installing alternative energy systems in a proposed large building, as defined in S.I. No. 666 of 2006, and that the use of such systems has been taken into account, as far as practicable, in the design of that building.						✓	

### 8.10.7.4 Telecommunications

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
Work with the South-East Regional Authority and all other relevant agencies to ensure the swift and efficient roll-out of broadband telecommunications infrastructure to smaller towns and rural areas in the region.			L1				TS2 MM8

Support and facilitate the provision of advanced communication networks and services to the extent required to contribute to national, regional and local competitiveness and attract inward investment.			<b>L1</b>				<b>TS2 MM8</b>
Encourage the further co-ordinated and focused development and extension of telecommunications infrastructure including broadband connectivity in the county as a means of improving economic competitiveness and enabling more flexible work practices e.g. teleworking.			<b>L1</b>				<b>TS2 MM8</b>
Ensure the provision for development in connection with telecommunications is made in ways which will maximise the use of existing masts and sites so as to limit the impact of development.	<b>L1</b>						
To support the provision of new and innovative telecommunications infrastructure, subject to normal proper planning consideration.				✓			
To recognise that the development of telecommunications infrastructure is a key component of future economic and social development of the County.						✓	

### 8.10.7.5 Air Quality

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policies</b>							
Implement the provisions of national policy and air pollution legislation, in conjunction with other agencies as appropriate.	<b>HH1 A1</b>						
Ensure that the developments, which are subject to the requirement of the Air Pollution Act 1987 and Air Pollution (Licensing of Industrial Plant) Regulations 1988 or any subsequent regulations meet appropriate emission standards and other relevant national and international standards.	<b>HH1</b>						
Support public transport and non motorised transport as a means of reducing locally generated air emissions and to encourage landscaping and tree planting as a means of purification and filtering of the air.	<b>HH1 A1</b>						
To seek to minimise the noise and dust through the planning process by ensuring that the design of future developments incorporate measures to prevent or mitigate the transmission of dust, noise and vibration, where appropriate.	<b>HH1 A1</b>						
To require that the design of external lighting minimises the incidence of light spillage or pollution into the surrounding environment.	<b>L1</b>						



### 8.10.7.6 Water Supplies

	Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
<b>Surface Water Policy</b>							
To protect, maintain, improve and enhance the quality of watercourses and rivers in the County.	B1 B2 B3 HH1 W1 W2 W3 W4 L1						
<b>Ground Water Policy</b>							
Ensure that septic tanks and proprietary treatment systems, or other waste water treatment and storage systems, where required as part of a development, comply with relevant guidelines and that they are employed where site conditions are appropriate.	HH1 W1 W2 W3 W4 M1						
Have regard to the Groundwater Protection Scheme in decision-making on the location, nature and control of developments and activities in order to protect groundwater.	HH1 W1 W2 W3 W4						
Set up a Panel of Approved Site Characterisation Assessors for the purpose of assessing planning applications.	HH1 W1 W2 W3 W4 M1						
<b>Water Quality Policy</b>							
To actively participate in the implementation of the Water Framework Directive	B1 B2 B3 HH1 W1 W2 W3 W4 L1						
To jointly with other local authorities and the relevant public authorities, participate and co-operate in the South Eastern River Basin District Management Project.	B1 B2 B3 HH1 W1 W2 W3 W4 L1						
To implement the South Eastern River Basin Management Plan	B1 B2 B3 HH1 W1 W2 W3 W4 L1						
To increase public awareness of water quality issues and the measures required to protect and where required, improve the quality of all waters				√			
Ensure the sustainable and economic provision of an adequate supply of good quality water for industrial, domestic and other beneficial uses, including the propagation of healthy fish stocks.	B1 B2 B3 HH1 W1 W2 W3						
Implement its adopted Water Quality Management Plans in order to prevent pollution and to ensure that beneficial uses of the waters e.g. industrial, domestic and agricultural abstraction, fishing and recreation, are protected.	B1 B2 B3 HH1 W1 W2 W3 W4						
Ensure the protection of sources of potable water and will continue the process of monitoring the quality of water resources.	HH1 W1 W2						
Prevent industrial water pollution by ensuring that development is appropriately located, by seeking effluent reduction and 'clean production' where feasible, by requiring that waste water treatment facilities are	B1 B2 B3 HH1 W1						

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adequate, and that effluents are treated and discharged in a satisfactory manner.	W2 W3 W4						
To take account of the findings of the National Programs of Measures Studies being developed for the River Basin Management Plans	B1 B2 B3 HH1 W1 W2 W3 W4						
Prevent pollution of water by means of development management and enforcement measures.	B1 B2 B3 HH1 W1 W2 W3 W4						
Implement the measures quoted under the Water Quality Standards Reports for Phosphorous and Dangerous Substances Regulations.	HH1 W1 W2 W3 W4						
To implement the Water Quality Management Plans for the Barrow, Nore and Suir Rivers pending adoption of the South East River Basin Management Plan	B1 B2 B3 HH1 W1 W3 W4 L1						
Implement the capital programme outlined in the Provision of Water and Wastewater Infrastructure in Kilkenny City and County, March 2007.	M1 B1 B2 B3 HH1 W1 W2 W3 W4 L1						
Extend water supplies to meet the expanding domestic, commercial and industrial needs of the County.				✓			
Improve the provision of services in those areas where deficiencies exist at present.				✓			
Encourage the economic use of existing service.				✓			
Conserve valuable water supplies by eliminating leakages and through raising public awareness of the need for water conservation.					✓		
Conserve and protect sources of supply through the application of the principles of sustainability in their development and controlling development in their vicinity, which would give rise to adverse impacts.					✓		
Extend waste water treatment to meet the expanding domestic commercial and industrial needs of the County.	HH1 W1 W2 W3 W4 M1						
Improve the provision of treatment services in those areas where deficiencies exist at present.	HH1 W1 W2 W3 W4 M1						
Encourage the economic use of existing treatment services				✓			
Meet in full the requirements of the E.U. Urban Waste Water Treatment Directive.							
Ensure that arrangements for the treatment and disposal of effluent from all forms of development are sustainable and meet environmentally acceptable standards.	HH1 W1 W2 W3 W4 M1						
Implement the Sludge Management Plan for the county.				✓			
<b>Ground Water Action</b>							
Ensure the completion of the mapping of source protection areas						✓	
Set up a Panel of Approved Site Characterisation Assessors for the purpose of assessing planning applications	W2						

### 8.10.7.7 Waste Management

	Likely to <u>Improve</u> status of SEOs	Probable <u>Conflict</u> with status of SEOs- unlikely to be mitigated	Potential <u>Conflict</u> with status of SEOs- likely to be mitigated	<u>Uncertain</u> interaction with status of SEOs	<u>Neutral</u> Interaction with status of SEOs	<u>No Likely</u> interaction with status of SEOs	<u>Mitigation Measure Code(s)</u> (see Section 8)
<b>Policy</b>							
To reduce to a minimum the cost of recycling to the consumer in County Kilkenny						✓	
Prepare and implement Litter Management Plans and carry out its statutory functions in relation to the Litter Pollution Act 1997.						✓	
Build on the achievements to date in the Tidy Towns and to develop a civic spirit which fosters pride in a clean and litter free county.						✓	
Continue in its partnership approach with the Tidy Towns Associations, community groups, farming organisations, trade unions, the business community, the local media, sporting organisations, tourism bodies and Gardai in the support and fostering of anti-litter initiatives within the county.						✓	
<b>Development Assessment Criteria Policy</b>							
Implement the Joint Waste Management Plan for the South East Region.						✓	
Fully participate in the preparation, adoption and implementation of future Joint Regional Waste Management Plans.							
To use its statutory powers to protect the environment from indiscriminate and unsightly dumping in order to protect the appearance of rural and urban areas, and in the interests of public health.	<b>HH1</b>						
To develop and implement education programmes that increase the awareness and understanding of local government decision makers, educators, business and industry personnel, general public and students of the need to effectively reduce and manage solid waste through the continued work of the Environmental Education and Awareness Officer.						✓	
Encourage the provision of recycling facilities in appropriate quarry developments, construction sites and landfills for the recycling/recovery of construction & demolition waste, subject to normal planning and environmental sustainability considerations, and in accordance with the Joint Waste Management Plan.						✓	
Require the provision of bring banks, bottle banks or other appropriate recycling facilities as part of the overall development, as deemed necessary. The sites shall be made available to the Council at the developer's own expense and will be maintained by the Council or its agents.						✓	
Consider, when undertaking development or when authorising or permitting development, the provision of facilities within developments						✓	
Have regard to the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects 2006						✓	

### 8.10.7.8 Flood Management

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Development Assessment Criteria Policy</b>							
Ensure that development that is sensitive to the effects of flooding will generally not be permitted in flood prone or marginal areas.	HH1						
Ensure that development must so far as is reasonably practicable incorporate the maximum provision to reduce the rate and quantity of runoff.	HH1						
Require that new development should not itself be subject to an inappropriate risk of flooding nor should it cause or exacerbate such a risk at other locations.	HH1						
Control development in the natural floodplains of all rivers and streams where such development may have a negative impact on flood control, access for channel maintenance or future flood control works or might contribute to environmental degradation were flooding to occur.	HH1						
Restrict development, which is sensitive to the effects of flooding in flood prone or marginal areas unless adequate mitigation measures, which may involve the preparation of a Flood Impact Analysis, are proposed to the satisfaction of the Planning Authority.	HH1						
To adopt a strategic response to flooding and to actively engage with all relevant authorities to sustainably manage annually and consider flood risk and its related impacts on development on a catchment basis	HH1						

### 8.10.7.9 Control of Major Accident Hazards Directive (Seveso II Directive)

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
In order to reduce the risk and limit the consequences of major industrial accidents, it is the policy of the Councils to consult with the Health & Safety Authority when assessing proposals for development in or near sites which are identified under the COMAH (Seveso II) Directive.	HH1						

### 8.10.7.10 Potentially Contaminated Land

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs-unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs-likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							

Require the applicant to engage an environmental consultant to investigate and assess the possibility and extent of contamination and to recommend remediation measures for agreement within the Council, in relation to proposals for developments on land which is or may be contaminated.				✓			
<b>Action</b>							
Complete a register of contaminated sites within the county during the lifetime of this plan.	<b>HH1</b>						

### 8.10.7.11 Fire Service

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
To upgrade and replace fire stations and to replace and provide new equipment and vehicles as the need arises.						✓	

## 8.11 Guidelines for New Development

	Likely to <b>Improve</b> status of SEOs	Probable <b>Conflict</b> with status of SEOs- unlikely to be mitigated	Potential <b>Conflict</b> with status of SEOs- likely to be mitigated	<b>Uncertain</b> interaction with status of SEOs	<b>Neutral</b> Interaction with status of SEOs	<b>No Likely</b> interaction with status of SEOs	<b>Mitigation Measure Code(s)</b> (see Section 8)
<b>Policy</b>							
It is the policy of the Council to encourage the establishment and maintenance of high quality sustainable residential communities.	<b>B1 B2 B3 HH1 S1 W1 W2 W3 W4 A1 M1 CH1 CH2 L1</b>						
It is the policy of the Planning Authority to encourage the well-planned and economic provision of residential accommodation on serviced lands.	<b>HH1 W1 W2 W3 W4 M1</b>						
To secure a high quality of design layout and landscaping in all new residential developments consistent with the Residential Density Guidelines.	<b>CH2 L1</b>						
The Council will endeavour to use green public procurement where possible and will liaise with and seek support from ICLEI (Local Governments for Sustainability) to develop a procurement policy in line with National Guidelines and International Best Practice.						✓	
To promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development, landscape and culture.	<b>CH2 L1</b>						
To promote the continuity of street frontages and the enclosure of space by development which clearly defines private and public areas.	<b>CH2</b>						

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To promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society, including disabled and elderly people.	<b>CH2 HH1</b>	<b>L1</b>						
To promote accessibility and local permeability by making places that connect with each other and are easy to move through, putting people before traffic and integrating land uses and transport.	<b>A1</b>							
To promote legibility through development that provides recognisable routes, intersections and landmarks to help people find their way around.	<b>L1</b>							
To promote adaptability through development that can respond to changing social, technological and economic conditions.							√	
To promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs.					√			
It is the policy of the Councils that the naming of new residential development should reflect the local and historical context of its siting as far as possible such as local names which reflect the landscape, its features, culture or history of the area in which the development is located. Also considered will be the names of historical persons associated with the area. The use of Irish names will be encouraged. The naming of residential developments shall be approved by the Planning Authority prior to the launching of any advertising campaign for a development.							√	
The Borough and County Councils will not normally permit new residential development unless open space is provided within the development to a minimum standard of 2.4 hectares per 1,000 population or greater.					√			
It is the policy of the local authorities to ensure that archaeological material is not disturbed so that an opportunity will be given to investigate and record any material of archaeological value that may be found or to protect them in-situ on sites.	<b>CH1</b>							
In order to conserve the distinctive character of County Kilkenny's traditional shopfronts it is the policy of the Planning Authority to encourage the maintenance of original shop fronts, or the reinstatement of traditional shop fronts where poor replacements have been installed.	<b>CH2</b>							
It is the policy of the Planning Authority to strictly control all advertising signs in relation to their location, design, materials and function.	<b>CH2 L1</b>							
It is the policy of the Councils to implement the Childcare Facilities – Guidelines for Planning Authorities as published by the DOELG in 2001.							√	
On lands zoned for agriculture within the development boundary for Kilkenny City and Environs, Waterford City Environs, Callan, Castlecomer, Thomastown, and Graiguenamanagh housing will be restricted to the following categories of persons: Immediate members of farmer's families (sons & daughters) and/or Persons whose primary employment is in agriculture, horticulture, forestry or bloodstock, or other rural based activity in the area which they wish to build. The basis of this policy is to preserve the existing agricultural use of the areas zoned for this purpose, to prevent speculation in land and to prevent urban generated development which would interfere with the operation of farming and prejudice the future planning and development of the area.					√			



## Section 9 Mitigation Measures

### 9.1 Introduction

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the CDP.

Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration is given in the first instance to preventing such effects or, where this is not possible for stated reasons, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: *avoid* effects; *reduce* the magnitude or extent, probability and/or severity of effect; *repair* effects after they have occurred, and; *compensate* for effects, balancing out negative impacts with other positive ones.

### 9.2 Spatial Strategy for the Kilkenny Hub Corridor Impact Zone (SS)

The Kilkenny Hub Corridor Impact Zone has a significant potential to conflict with elevated densities of environmental sensitivities (see Figure 9.1). In order to sustainably facilitate necessary development in this area it will be necessary to prepare a Spatial Strategy to assist in the preparation of future development plans or local area plans. This strategy will identify the location, significance and sensitivity of the range of environmental assets and constraints that occur within these particularly sensitive areas and such relevant sensitivities as may exist in the adjoining buffer zone.

The strategy shall demonstrate how the provisions of the CDP can be sustainably accommodated within such sensitive areas.

### 9.3 Thematic Strategies

In addition to these specific areas the county will need to prepare and separately assess a Thematic Strategy for Rural Development and Agriculture and a Thematic Strategy for Forestry.

#### 9.3.1 TS1: Thematic Strategy for Rural Development & Agricultural Restructuring

Kilkenny has a very wide range of land use capability that will result in different parts of the County having very different futures under the onset of the reform of the Common Agricultural Policy. It is likely that areas with marginal agriculture are likely to experience increasing levels of afforestation, alternative enterprises and rural settlement as a result. If these occur in an integrated and coordinated manner then there are likely to be benefits for all - in addition to increased protection for environmental assets such as groundwater, surface water quality, landscape and cultural heritage. A Thematic Spatial Strategy for Agricultural Restructuring will address this need.

#### 9.3.2 TS2: Thematic Strategy for Forestry

A number of social, economic and agricultural forces may combine to see the beginning of a marked increase in afforestation in transitional, lowland and upland landscapes within Kilkenny. If properly harnessed such forestry could positively facilitate many other land-uses - including land-use types which are often difficult to accommodate such as aquifer and surface water protection, tourism, rural housing, mineral extraction, industry, and the provision of infrastructure location. It is proposed that a Thematic Spatial Strategy for Forestry is prepared to this effect.

### 9.4 Subsidiary Plans (SP)

Each Local Area Plan (LAP) or framework plan within the County should contain adequate policy and guidance in order to highlight the importance of retaining the unique character and diversity of town and village centres, and provide for their protection.

Policies should be amended where necessary to take of account of the carrying capacity of the environment - as outlined in this report.

Consideration should be given in the drafting of residential policies to targeting the use of brownfield sites as a priority.

Residential objectives which promote the identification of opportunities for infill development and consolidation of existing towns and villages to reduce the need to zone additional greenfield lands should be included within LAP subject to stringent design guidance and environmental protection.

The inclusion of a policy relating to the integration of the transport system throughout the LAP could have a considerable positive effect.

The inclusion of a policy relating to the integrated provision of infrastructure within the LAP, may help in lessening the potential environmental impact of infrastructural requirements to service lands within those LAP, individually and cumulatively.

## **9.5 Mitigation Measures for Specific Environmental Topics**

### **9.5.1 MM1: Designated Ecological Sites**

Establish a buffer, free of development, at least 30m in width around designated ecological sites which may be larger depending on local ecological and drainage conditions and other factors as appropriate.

### **9.5.2 MM2: Designated Wetland / Peatland Ecological Sites**

Planning applications within 30 metres of designated wetland/peatland ecological sites must be accompanied by an eco-hydrological assessment: which complies with Section 18 of the European Communities (Natural Habitats) Regulations 1997; identifies and evaluates the direct and indirect effects which the development would be likely to have upon the designated site, ecological connectivity and drainage. Planning applications must also be accompanied by evidence of consultation between the applicant and the National Parks and Wildlife Service with regard to the findings

of this assessment. The need for ecological assessments for planning applications further than the 30 metre distance shall be decided upon on a site by site basis depending on local ecological and drainage conditions and other factors as appropriate.

### **9.5.3 MM3: Salmonid Waters Protection**

A general minimum horizontal setback of 30m from the banks of salmonid waters for new development is to be created. Any planning applications within this setback must demonstrate that any development would not impact upon salmonid species or the habitats which sustain them.

### **9.5.4 MM4: Ecological Networks**

Planning applications must: identify all ecological corridors (including hedgerows and masonry stone walls), likely to be significantly affected, which are present on the relevant lands; identify any losses to these corridors which would result if the application in question was granted and; show that such losses would be fully offset if the application was to be granted through the replacement of the relevant corridors, with corridors composed of similar species or materials, before any losses to the existing corridors occur.

Where such opportunity exists between high value biodiversity areas applicants should be encouraged to enhance existing networks or create new networks between local biodiversity areas.

### **9.5.5 MM5: Water Quality Protection**

In order for permission to be granted to new developments, there must be sufficient capacity available to appropriately treat the waste water resulting from such developments. This may be done by: upgrading the capacity of the existing waste water treatment plant and agreeing a new Discharge License with the relevant organisation; sourcing capacity from other existing public waste water treatment plants, or by: constructing a new public waste water treatment plant.

Thus new development will be served by either:

- a. Providing new capacity for public waste water treatment either through the provision of a new public waste water treatment plant or through allocation of additional capacity to existing waste water treatment plants and extending the existing public waste water treatment catchment to serve all possible developments within the plan area

Or:

- b. Treating waste water through the use of individual waste water treatment systems, such as septic tanks.

If development is served by 'b.' then the conditions outlined in the EPA's (2000) 'Wastewater Treatment Manuals - Treatment Systems for Single Houses' shall be complied with, and:

- (i) Planning applications must demonstrate that discharges to waters resulting from the granting of the application will comply with standards established under the South East River Basin Management Plan or interim recognized standards pending adoption of the South East River Basin Management Plan
- (ii) Applicants must submit a site suitability report alongside the planning application which outlines the likely effects on water quality which will be caused as a result of use of the relevant single waste water treatment system on site. This report shall be carried out by an appropriately qualified person. The appropriateness of the qualifications of such a person will be decided by the Planning Authority.
- (iii) The applicant, if successful with the relevant application, shall submit certification from an appropriately qualified person stating that the treatment system and associated percolation / filter area have been installed in accordance with the requirements of the EPA's (2000) 'Wastewater Treatment Manuals - Treatment Systems for Single Houses'. The applicant shall also submit agreement to maintain the complete system in accordance with the manufacturer's maintenance recommendations, for the lifetime of the system.

Note: If capacity in a public waste water treatment scheme is not made available to all development within the plan area in the long term then existing septic tanks, percolation areas and proprietary effluent systems may require to be upgraded in the long term in line with the conditions specified above and a monitoring system set up to the same effect.

### **9.5.6 MM6: Archaeological Heritage**

Planning applications within or adjacent to a buffer zone of 30m from a Site on the Sites and Monument Register must be accompanied by: an archaeological assessment detailing the impacts which the relevant development would have on archaeology in the area, including those impacts relating to the context of archaeology in the surrounding landscape.

### **9.5.7 MM7: Architectural Heritage**

Planning applications within towns identified as having a rich architectural heritage may be required to be accompanied by an assessment to be undertaken by a certified conservation architect detailing the impacts of the relevant development upon the special interest and character of the surrounding architectural heritage. The planning authority should be consulted at an early stage in this regard in order to determine whether there is a need for such an assessment.

### **9.5.8 MM8: Landscape Heritage**

Planning Applications that have the potential to impinge upon the integrity of significant landscape resources may be required to be accompanied by an assessment of the potential landscape and visual impacts of the proposed development - demonstrating that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape.

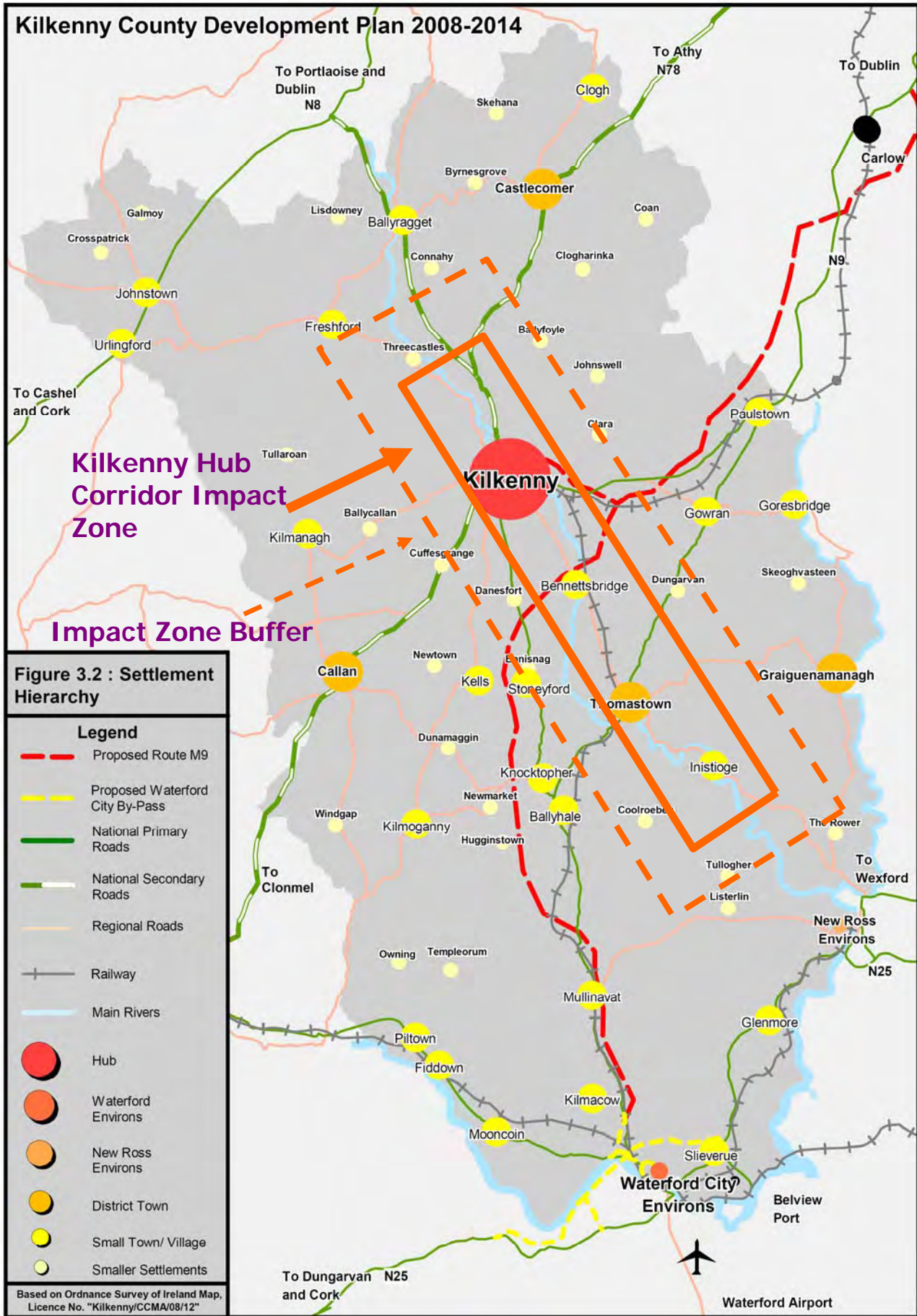


Figure 9.1 Kilkenny Hub Corridor Impact Zone

## Section 10 Monitoring

### 10.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. This environmental report puts forward proposals for monitoring the County Development Plan (CDP) which are adopted alongside the Plan.

Monitoring enables, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action. In addition to this, monitoring can also play an important role in assessing whether the CDP is achieving its environmental objectives and targets - measures which the CDP can help work towards - whether these need to be reexamined and whether the proposed mitigation measures are being implemented.

### 10.2 Indicators and Targets

Monitoring is based around the indicators which were chosen earlier in the process. These indicators allow quantitative measures of trends and progress over time relating to the Strategic Environmental Objectives used in the evaluation. Focus will be given to indicators which are relevant to the likely significant environmental effects of implementing the CDP and existing monitoring arrangements will be used in order to monitor the selected indicators. Each indicator to be monitored will be accompanied by the relevant target(s) which were identified with regard to the relevant legislation (see Section 4).

Table 10.1 below shows the indicator and targets which have been selected with regard to the monitoring of the plan.

### 10.3 Sources

Measurements for indicators should come from existing monitoring sources and no new monitoring should be required to take place. Existing monitoring sources exist for each of the indicators and include those maintained by Kilkenny County Council and the relevant authorities e.g. the Environmental Protection

Agency, the National Parks and Wildlife Service and the Central Statistics Office.

The *Development Management Process* in the County Council will provide passive monitoring of various indicators and targets on an application by application basis. Where significant adverse effects - including positive, negative, cumulative and indirect - are likely to occur upon, for example, entries to the RMP, entries to the RPS or ecological networks as a result of the undertaking of individual projects or multiple individual projects such instances should be identified and recorded and should feed into the monitoring evaluation.

### 10.4 Excluded Indicators and Targets

As noted on Table 10.1 below, monitoring data on Indicator W3 (Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC) may not be available for the preliminary monitoring evaluation as the groundwater threshold values to which this indicator relates have not yet been identified by the EPA.

In addition, future monitoring data for Indicators A1i (Percentage of population within the plan area travelling to work or school by public transport or non-mechanical means) and A1ii (Average distance travelled to work or school by the population of the County) will not be available until the results of the next CSO Census are made available. It is recommended that data for these indicators be sourced for the SEA of the next review of the Plan.

### 10.5 Reporting

A preliminary monitoring evaluation report on the effects of implementing the CDP will be prepared to coincide with the Manager's report to the elected members on the progress achieved in securing CDP objectives within two years of the making of the plan (this Manager's report is required under section 15 of the 2000 Planning Act).

## 10.6 Responsibility

Kilkenny County Council is responsible for collating existing relevant monitored data, the preparation of a monitoring report, the publication of this report and, if necessary, the carrying out of corrective action.

It is recommended that a Steering Committee be established to oversee the monitoring process.

## 10.7 Thresholds

The following thresholds - above which appropriate corrective action should be considered - have been set for the monitoring programme for the plan:

- Any boil notices on drinking water;
- Any fish kills;
- Any court cases taken by the DEHLG regarding impacts upon archaeological heritage including entries to the Record of Monuments and Places; and,
- Any complaints received from statutory consultees regarding avoidable impacts on one, some or all environmental components resulting from development which is granted permission under the CDP.



Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
<p><b>Biodiversity, Flora and Fauna</b></p>	<p>B1: Percentage of relevant habitats and designated ecological sites lost as a result of implementation of the CDP</p> <p>B2: Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP</p> <p>B3: Percentage loss of connectivity between areas of local biodiversity as a result of implementation of the CDP – as evidenced from a resurvey of CORINE mapping and any habitat mapping which is produced</p>	<p>B1: No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the CDP</p> <p>B2: No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the CDP</p> <p>B3: No ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity to be lost without remediation as a result of implementation of the CDP</p>	<p>CORINE Mapping, DEHLG Records &amp; Development Management Process</p> <p>Development Management Process &amp; Consultation with the National Parks and Wildlife Service</p> <p>Remote sensing of trees and hedges combined with CORINE mapping</p>
<p><b>Population and Human Health</b></p>	<p>HH1: Occurrence (any) of a spatially concentrated deterioration in human health</p>	<p>HH1: No spatial concentrations of health problems arising from environmental factors</p>	<p>Kilkenny County Council, EPA, Health and Safety Authority</p>

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
<b>Soil</b>	<p>S1: Area of brownfield land developed over the plan period</p> <p>S2: Proportion of excavated area returned to productive use.</p>	<p>S1: Reduced availability of brownfield land (subject to availability on the open market, the demand for such land and the ability for such lands to be sustainably re-used within the provisions of the CDP) at the end of the CDP lifespan</p> <p>S2: All extraction sites to have progressive rehabilitation programmes in place with agreed rehabilitation targets</p>	<p>Development Management Process</p> <p>Development Management Process</p>
<b>Water</b>	<p>W1: Biotic Quality Rating (Q Value)</p> <p>W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC</p> <p>W3: Trophic Status (ATSEBI)</p> <p>W4: Mandatory and Guide values as set by Directive (76/160/EEC)</p>	<p>W1i: To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2015</p> <p>W1ii: To improve biotic quality ratings, where possible, to Q5</p> <p>W2: Compliance with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC</p> <p>W3: To maintain or to improve trophic status, where relevant, to unpolluted in line with the requirement to achieve good water status under the Water Framework Directive, by 2015</p> <p>W4: To achieve - as a minimum - Mandatory values, and where possible to achieve Guide values as set by Directive (76/160/EEC)</p>	<p>Environmental Protection Agency</p> <p>As noted under Section 10.4, monitoring data may not be available for this indicator when the monitoring evaluation is being prepared.</p> <p>Environmental Protection Agency</p> <p>Environmental Protection Agency</p>

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
<b>Air and Climatic Factors</b>	<p>A1i: Percentage of population within the plan area travelling to work or school by public transport or non-mechanical means</p> <p>A1ii: Average distance travelled to work or school by the population of the County</p>	<p>A1i: An increase in the percentage of the population travelling to work or school by public transport or non-mechanical means</p> <p>A1ii: A decrease in the average distance travelled to work or school by the population of the County</p>	Environmental Protection Agency
<b>Material Assets</b>	M1: Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP	M1: No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CDP	CSO [As noted under Section 10.4, monitoring data may not be available for this indicator when the monitoring evaluation is being prepared].
<b>Cultural Heritage</b>	<p>CH1: Number of unauthorised developments occurring over the lifespan of the CDP which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.</p> <p>CH2: Number of unauthorised developments occurring over the lifespan of the CDP which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.</p>	<p>CH1: No unauthorised developments occurring over the lifespan of the CDP which result in full or partial loss of: entries to the Record of Monuments and Places; entries to the Register for Historic Monuments; National Monument subject to Preservation Orders, and; the context of the above within the surrounding landscape where relevant.</p> <p>CH2: No unauthorised developments occurring over the lifespan of the CDP which result in physical loss or loss to the context in the surrounding landscape or streetscape of: entries to the Record of Protected Structures; Architectural Conservation Areas, or; entries to the National Inventory of Architectural Heritage.</p>	<p>Development Management Process; Complaints received from statutory consultees</p> <p>Development Management Process; Complaints received from statutory consultees</p>

Environmental Component	Selected Indicator(s)	Selected Target(s)	Sources
<b>Landscape</b>	L1: Number of complaints received from statutory consultees regarding avoidable impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views - resulting from development which is granted permission under the CDP	L1: No developments permitted which result in avoidable impacts on the landscape - especially with regard to sensitive landscape features and designated scenic views - resulting from development which is granted permission under the CDP	Development Management Process; Complaints received from statutory consultees

**Table 10.1 Selected Indicators, Targets and Monitoring Sources**

## Appendix I Site Synopses

### Special Areas of Conservation

#### Hugginstown Fen SAC (Site Code 000404)

Hugginstown Fen is situated approximately 4 km south-west of Ballyhale, Co. Kilkenny. The site consists of a relatively large, isolated area of swamp and floating fen developed in a small valley in hilly country. It is underlain by limestone glacial till overlying and surrounded by acid Old Red Sandstone. The catchment is relatively small and iron-rich springs are an important source of water for the wetland. The site is a candidate Special Area of Conservation selected for alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive. The northern third of the fen is dominated by Common Reed (*Phragmites australis*) swamps with some small areas of open water near springs. The remainder of the site consists of species-rich fen, partly developed on mats of floating vegetation, dominated by a tall herb community in which Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Water Horsetail (*Equisetum fluviatile*), Bulrush (*Typha latifolia*), Water Mint (*Mentha aquatica*) and Lesser Tussock-sedge (*Carex diandra*) are common. Other species present include Nodding Bur-marigold (*Bidens cernua*), Marsh St. John's-wort (*Hypericum elodes*), Black Bog-rush (*Schoenus nigricans*) and Tubular Water-dropwort (*Oenanthe fistulosa*). Species-rich Rush/Purple Moor-grass (*Junco-Molinion*) grassland occurs in drained areas at the southern and northern end and around the margins at the peat-mineral interface. Small clumps of Willow (*Salix* sp.) occur occasionally on the fen margin. An interesting feature of this area is that the water flows overground initially then disappears abruptly underneath the floating fen vegetation. Two uncommon insect species recorded from Hugginstown Fen are Scarce Emerald Damselfly (*Lestes dryas*) and the Hoverfly *Parhelophis consimilis*. The Common Frog, a Red Data Book species, is frequent at the site. Although this site has been damaged to some extent by drainage, especially in the southern part, it contains an important example of an alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive and remains one of the most interesting and diverse fen sites in Ireland.  
13.06.2003

#### The Loughans SAC (Site Code 000407)

The Loughans is a turlough situated in flat land about 3km east of Urlingford, below the Slieve Ardagh Hills, in County Kilkenny. The basin is slightly undulating, with banks and hummocks of glacial drift around which the water rises. It has a level floor for the most part, but swallowholes and subsidence hollows are present. The turlough floods regularly, despite some drainage. In summer, it retains a permanent central pond and there are several subsidiary wet hollows at the eastern end. Around the central pond there are plant species typical of fluctuating water levels, and Amphibious Bistort (*Polygonum amphibium*) is common. Standing water is colonised by Broad-leaved Pondweed (*Potamogeton natans*), Water-crowfoot species (*Ranunculus aquatilis* and *R. trichophyllus*) and Unbranched Bur-reed (*Sparganium emersum*). Some ponds have a floating sward of vegetation formed by Floating Sweet-grass (*Glyceria fluitans*), Speedwells (*Veronica scutellata* and *V. catenata*) and Lesser Spearwort (*Ranunculus flammula*). About half of the basin is semi-reclaimed pasture dominated by Perennial Rye-grass (*Lolium perenne*), with other agricultural grasses such as Crested Dog's-tail (*Cynosurus cristatus*), and White Clover (*Trifolium repens*). Elsewhere, there is a more natural turlough vegetation, rich in small Sedges (*Carex nigra*, *C.*

*disticha* and *C. hirta*), and Grasses such as Tufted Hair-grass (*Deschampsia cespitosa*) and Purple Moor-grass (*Molinia caerulea*). Wetland grasses such as Creeping Bent (*Agrostis stolonifera*) and Marsh Foxtail (*Alopecurus geniculatus*) are found in places, with a notable abundance of Creeping Cinquefoil (*Potentilla reptans*). To the north, there is a gradation into drier, lime-rich grassland where another recognisable and characteristic grassland community occurs, adding habitat diversity to the site. Several rare and scarce plant species occur at The Loughans. Green-winged Orchid (*Orchis morio*) occurs on the limestone grassland: this species is listed under The Flora Protection Order (1987). Two other species listed in The Irish Red Data Book, Marsh Helleborine (*Epipactis palustris*) and Northern Yellow-cress (*Rorippa islandica*), occur here. A number of local rarities have also been recorded, including Red Goosefoot (*Chenopodium rubrum*), Common Meadow-rue (*Thalictrum flavum*) and Zigzag Clover (*Trifolium medium*). The Loughans is the only large turlough in the south-east of the country, and the highest anywhere in Ireland. It has limited physical variation but, for its size, fairly diverse vegetation, including open water, ditches, extensive damp areas and a good transition to the high quality lime rich grassland areas.  
28.01.1997

#### Cullahill Mountain SAC (Site Code 000831)

This site lies on a western outlier of the Castlecomer plateau, 6 km north-east of Johnstown, where the underlying limestone has been exposed relatively recently by erosion of the higher shales. The rock is in the form of an escarpment with a steep side facing the central plain (and the Cork-Dublin road) and more gradual slopes to the south-east where the shale soon appears. The vegetation of most of the site comprises a herb-rich grassland over limestone, in which no one species predominates. The coexistence of about 5 grass species, 2 sedges and 20 broad-leaved herbs is one of the most interesting features of the vegetation and it allows a rich insect fauna to maintain itself. Grasses found include Quaking-grass (*Briza media*), Crested Dog's-tail (*Cynosurus cristatus*), Sheep's-fescue (*Festuca ovina*), Downy Oat-grass (*Avenula pubescens*) and Yellow Oat-grass (*Trisetum flavescens*). Amongst these grasses Mouse-ear Hawkweed (*Hieracium pilosella*), Wild Thyme (*Thymus praecox*), Bird's-foot-trefoil (*Lotus corniculatus*), Lady's Bedstraw (*Galium verum*), Carline Thistle (*Carlina vulgaris*), Mountain Everlasting (*Antennaria dioica*), Purging Flax (*Linum catharticum*) and Eyebright (*Euphrasia* sp.) grow, while a number of smaller annual species are associated with rock outcrops. The orchid flora of the grassland is notably rich, with Twayblade (*Listera ovata*), Frog Orchid (*Coeloglossum viride*), Bee Orchid (*Ophrys apifera*), Early-purple Orchid (*Orchis mascula*) and Green-winged Orchid (*Orchis morio*) occurring. Green-winged Orchid is a rare species that is legally protected under the Flora Protection Order (1987) and the site is particularly notable for the abundance of this species (some 350 individuals were recently recorded from the site). On its west side, the site extends downslope to some Ash (*Fraxinus excelsior*)/Hazel (*Corylus avellana*) woodland which is regenerating well and spreading on the hill. Some of the trees grow out of moss-covered rocks and though the ground flora is as yet fairly sparse most of the expected species occur somewhere within the wood. Woodland on limestone is quite rare in the Midlands and is distinct from adjacent Hazel stands on shale, such as at Spahill. The importance of the site lies in the presence of the large population of Green-winged Orchid in

grassland referable to a type listed, with priority status, on Annex I of the EU Habitats Directive.  
05.02.1997

**Spa Hill and Clomantagh Hill SAC (Site Code 000849)**

Spahill and the adjacent hills form part of an escarpment which links the Slieve Ardagh Hills with the Castlecomer Plateau. The hills are of limestone overlain by shales and/or sandstones so the surface geology is variable, with each rock type maintaining a very different type of vegetation. This particular site is mostly limestone, exposed as small ledges or as flat sheets when it is weathered into the pavement pattern so well known from the Burren. The hills are low and rounded. They rise relatively steeply from the Central Plain and drop south-eastwards more gently. Their surface is grassy in appearance but the soil is shallow especially on the upper parts and the rock breaks through frequently. The vegetation is dominated by Crested Dog's-tail (*Cynosurus cristatus*), Perennial Rye-grass (*Lolium perenne*) and Creeping Bent (*Agrostis stolonifera*), with Smooth Meadow-grass (*Poa pratensis*) and Yellow Oat-grass (*Trisetum flavescens*) occurring near outcrops. The community is species-rich with such plants as Wild Thyme (*Thymus praecox*), Mouse-ear Hawkweed (*Hieracium pilosella*), Quaking Grass (*Briza media*), Burnet Saxifrage (*Pimpinella minor*) and sedges (*Carex caryophylla* and *C. flacca*) scattered through it. Locally there is much Eyebright (*Euphrasia* sp.), Purging Flax (*Linum catharticum*) and Oxeye Daisy (*Leucanthemum vulgare*). The Rare and legally protected (*Flora Protection Order, 1987*), Green-winged Orchid (*Orchis morio*) grows sparingly through this community. Two other orchid species, Frog Orchid (*Coeloglossum viride*) and Common Spotted-orchid (*Dactylorhiza cf. fuchsii*) are also recorded from the site. A few larger cliffs occur on the south side of Clomantagh where Polypody (*Polypodium australe*) is common, along with Hairy Rock-cress (*Arabis hirsuta*). Rather different heathy grassland is found on particularly thin soils on the eastern slope of Spahill. Here Devil's-bit Scabious (*Succisa pratensis*) turns the ground purple in summer, growing with Slender St. John's-wort (*Hypericum pulchrum*), Bitter-vetch (*Lathyrus montanus*), Yellow-rattle (*Rhinanthus minor*) and a little Heather (*Calluna vulgaris*). The ground in Clomantagh is largely similar to Spahill except that near the top there are outliers of the overlying sandstone which appear as low, lumpy rocks quite different in shape to the limestone. The difference is accentuated by the vegetation which includes more Heather as well as Heath Bedstraw (*Galium saxatile*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*), Wavy Hair-grass (*Deschampsia flexuosa*), Tufted Hair-grass (*D. cespitosa*) and the mosses *Polytrichum juniperinum*, *Plagiothecium undulatum* and *Dicranum scoparium*. The final habitat in this diverse site is a woodland on the north-western slope. The trees are Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) and there is a good range of herb species on the ground. Wood-rushes (*Luzula sylvestris* and *L. pilosa*) are frequent, with Wood-sorrel (*Oxalis acetosella*), Greater Stitchwort (*Stellaria holostea*) and ferns (*Dryopteris dilatata* and *D. affinis*) also found. In seepage areas Golden Saxifrage (*Chrysosplenium oppositifolium*), Bugle (*Ajuga reptans*) and Remote Sedge (*Carex remota*) are characteristic and there is a little Water Avens (*Geum rivale*), Woodruff (*Galium odoratum*) and Tufted Hair-grass at the base of the slope. All in all, the site contains a variety of natural grassland communities that are rare in Ireland because of agricultural intensification. Taken with Cullahill Mountain to the north-east it forms a unit of high ecological interest. The presence of a population of Green-winged Orchid in grassland referable to a type listed, with priority status, on Annex I of the EU Habitats Directive is notable.  
05.02.1997

**Galmoy Fen SAC (Site Code 001858)**

Galmoy Fen is situated 7 km north of Johnstown in Co. Kilkenny, close to the boundary with Co. Laois. It comprises a cutover raised bog that has become flooded with base-rich groundwater and that now supports alkaline fen vegetation. It lies in a depression and is underlain by Carboniferous limestone. This site is a candidate SAC selected for alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive. The central part of the site comprises an area of cutover raised bog with numerous peat-cuttings, resulting in a mosaic of dry peat banks and wet peaty pools. The peat banks support typical bog species, e.g. Ling Heather (*Calluna vulgaris*), Gorse (*Ulex europaeus*) and Purple Moor-grass (*Molinia caerulea*), while the pools, which have become flooded with base-rich groundwater, support alkaline fen vegetation with such species as Black Bog-rush (*Schoenus nigricans*), Great Fen-sedge (*Cladium mariscus*) and Bog Mosses (*Sphagnum* spp.), amongst others. A large area of alkaline fen vegetation surrounds the central part of the site; this area has a number of large pools that support calcicole species. Other habitats present on the site include Gorse scrub, wet grassland, improved grassland, dry calcareous grassland with such species as Fairy Flax (*Linum catharticum*), Wild Thyme (*Thymus praecox*) and Mountain Everlasting (*Antennaria dioica*), and a small area planted with Sitka Spruce (*Picea sitchensis*). A stream brings water to the site on its north-east side. The site supports a rich assemblage of invertebrates associated with fen and bog habitats. Irish Hare and Common Frog, both Red Data Book species, also occur. Parts of the site are grazed by cattle and the whole area is used for shooting. Galmoy Fen is of considerable conservation significance as it comprises a good quality example of alkaline fen, a habitat that is listed on Annex I of the E.U. Habitats Directive.  
18.06.2003

**Lower River Suir SAC (Site Code 002137)**

This site consists of the freshwater stretches of the River Suir immediately south of Thurles, the tidal stretches as far as the confluence with the Barrow/Nore immediately east of Cheekpoint in Co. Waterford and many tributaries including the Clodiagh in Co. Waterford, the Lingaun, Anner, Nier, Tar, Aherlow, Multyen and Clodiagh in Co. Tipperary. The Suir and its tributaries flow through the counties of Tipperary, Kilkenny and Waterford. Upstream of Waterford city, the swinging meanders of the Suir criss-cross the Devonian sandstone rim of hard rocks no less than three times as they leave the limestone-floored downfold below Carrick in the vicinity of Carrick-on-Suir the river follows the limestone floor of the Carrick Syncline. Upstream of Clonmel the river and its tributaries traverse Upper Palaeozoic Rocks, mainly the Lower Carboniferous Visean and Tournaisian. The freshwater stretches of the Clodiagh River in Co. Waterford traverse Silurian rocks, through narrow bands of Old Red Sandstone and Lower Avonian Shales before reaching the carboniferous limestone close to its confluence with the Suir. The Aherlow River flows through a Carboniferous limestone valley, with outcrops of Old Red Sandstone forming the Galtee Mountains to the south and the Slievenamuck range to the north. Glacial deposits of sands and gravels are common along the valley bottom, flanking the present-day river course. The site is a candidate SAC selected for the presence of the priority habitats on Annex I of the E.U. Habitats Directive - alluvial wet woodlands and Yew Wood. The site is also selected as a candidate SAC for floating river vegetation, Atlantic salt meadows, Mediterranean salt meadows, old oak woodlands and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite



Shad, Atlantic Salmon and Otter. Alluvial wet woodland is declining habitat in Europe as a result of drainage and reclamation. The best examples of this type of woodland in the site are found on the islands just below Carrick-on-Suir and at Fiddown Island. Species occurring here include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Pendulus Sedge (*Carex pendula*), Meadowsweet (*Filipendula ulmaria*) and Valerian (*Valeriana officinalis*). The terrain is littered with dead trunks and branches and intersected with small channels which carry small streams to the river. The bryophyte and lichen floras appear to be rich and require further investigation. A small plot is currently being coppiced and managed by National Parks and Wildlife. In the drier areas the wet woodland species merge with other tree and shrub species including Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*). This adds further to the ecological interest of this site. Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Old oak woodlands are also of importance at the site. The best examples are seen in Portlaw Wood which lies on both sides of the Clodiagh River. On the south-facing side the stand is more open and the Oaks (mainly *Quercus robur*) are well grown and spreading. Ivy (*Hedera helix*) and Bramble (*Rubus fruticosus*) are common on the ground, indicating relatively high light conditions. Oak regeneration is dense, varying in age from 0-40 years and Holly (*Ilex aquifolium*) is fairly common but mostly quite young. Across the valley, by contrast, the trees are much more closely spaced and though taller are poorly grown on average. There are no clearings; large Oaks extend to the boundary wall. In the darker conditions, Ivy is much rarer and Holly much more frequent, forming a closed canopy in places. Oak regeneration is uncommon since there are as yet few natural clearings. The shallowness of the soil on the north-facing slope probably contributes to the poor tree growth there. The acid nature of the substrate has induced a "mountain" type Oakwood community to develop. There is an extensive species list present throughout including an abundance of mosses, liverworts and lichens. The rare lichen *Lobaria pulmonaria*, an indicator of ancient woodlands, is found. Inchinsquillib Wood consists of three small separate sloping blocks of woodland in a valley cut by the young Multeen River and its tributaries through acidic Old Red Sandstone, and Silurian rocks. Two blocks, both with an eastern aspect, located to the north of the road, are predominantly of Sessile oak (*Quercus petraea*) and Hazel, with Downy Birch (*Betula pubescens*), Ash and Holly. The ground flora is quite mixed with for example Wood sedge (*Carex sylvatica*), Bluebell (*Hyacinthoides non-scriptus*), Primrose (*Primula vulgaris*), Wood-sorrel (*Oxalis acetosella*), Pignut (*Conopodium majus*) and Hard fern (*Blechnum spicant*). The base poor nature of the underlying rock is, to some extent masked by the overlying drift. The third block, to the south of the road, and with a northern aspect, is a similar although less mature mixture of Sessile Oak, Birch and Holly, the influence of the drift is more marked, with the occurrence of Wood anemone (*Anemone nemorosa*) amongst the ground flora. Floating river vegetation is evident in the freshwater stretches of the River Suir and along many of its tributaries. Typical species found include Canadian Pondweed (*Elodea canadensis*), Milfoil (*Myriophyllum* spp.), Fennel Pondweed (*Potamogeton pectinatus*), Curled Pondweed (*P. crispus*), Perfoliate Pondweed (*P. perfoliatus*), Pond Water-crowfoot

(*Ranunculus peltatus*), other Crowfoots (*Ranunculus* spp.) and the moss *Fontinalis antipyretica*. At a couple of locations along the river, Opposite-leaved Pondweed (*Groenlandia densa*) occurs. This species is protected under the Flora (Protection) Order, 1999. The Aherlow River is fast-flowing and mostly follows a natural unmodified river channel. Submerged vegetation includes the aquatic moss *Fontinalis antipyretica* and Stream Water-crowfoot (*Ranunculus peltatus*), while shallow areas support species such as Reed Canary-grass (*Phalaris arundinacea*), Brooklime (*Veronica beccabunga*) and Water Mint (*Mentha aquatica*). The river bank is fringed in places with Alder (*Alnus glutinosa*) and Willows (*Salix* spp.). The Multeen River is fast flowing, mostly gravel-bottomed and appears to follow a natural unmodified river channel. Water Crowfoots occur in abundance and the aquatic moss *Fontinalis antipyretica* is also common. In sheltered shallows, species such as Water-cress (*Rorippa nasturtium-aquaticum*) and Water-starworts (*Callitriche* spp.) occur. The river channel is fringed for most of its length with Alder, Willow and a narrow strip of marshy vegetation. Salt meadows occur below Waterford City in old meadows where the embankment is absent, or has been breached, and along the tidal stretches of some of the inflowing rivers below Little Island. There are very narrow, non-continuous bands of this habitat along both banks. More extensive areas are also seen along the south bank at Ballynakill, the east side of Little Island, and in three large salt meadows between Ballynakill and Cheekpoint. The Atlantic and Mediterranean sub types are generally intermixed. The species list is extensive and includes Red Fescue (*Festuca rubra*), Oraches (*Atriplex* spp.), Sea Aster (*Aster tripolium*), Sea Couch Grass (*Elymus pycnanthus*), frequent Sea Milkwort (*Glaux maritima*), occasional Wild Celery (*Apium graveolens*), Parsley Water-dropwort (*Oenanthe lachenalii*), English Scurvygrass (*Cochlearia anglica*) and Sea Arrowgrass (*Triglochin maritima*). These species are more representative of the Atlantic sub-type of the habitat. Common Cord-grass (*Spartina anglica*), is rather frequent along the main channel edge and up the internal channels. The legally protected (Flora (Protection) Order, 1999) Meadow Barley (*Hordeum secalinum*) grows at the landward transition of the saltmarsh. Sea Rush (*Juncus maritimus*), an indicator of the Mediterranean salt meadows, also occurs. Other habitats at the site include wet and dry grassland, marsh, reed swamp, improved grassland, coniferous plantations, deciduous woodland, scrub, tidal river, stony shore and mudflats. The most dominant habitat adjoining the river is improved grassland, although there are wet fields with species such as Yellow Flag (*Iris pseudacorus*), Meadow Sweet (*Filipendula ulmaria*), Rushes (*Juncus* spp.), Meadow Buttercup (*Ranunculus acris*) and Cuckoo Flower (*Cardamine pratensis*). Cabragh marshes, just below Thurles, lie in a low-lying tributary valley into which the main river floods in winter. Here there is an extensive area of Common Reed (*Phragmites australis*) with associated marshland and peaty fen. The transition between vegetation types is often well displayed. A number of wetland plants of interest occur, in particular the Narrow-leaved Bulrush (*Typha angustifolia*), Bottle Sedge (*Carex rostrata*) and Blunt-flowered Rush (*Juncus subnodulosus*). The marsh is naturally eutrophic but it has also the nutritional legacy of the former sugar factory which discharged into it through a number of holding lagoons, now removed. Production is high which is seen in the size of such species as Celery-leaved Buttercup (*Ranunculus sceleratus*) as well as in the reeds themselves. Throughout the Lower River Suir site are small areas of woodland other than those described above. These tend to be a mixture of native and non-native species, although there are some areas of semi-natural wet woodland with species such as Ash and Willow. Cahir Park Woodlands is a narrow tract of mixed deciduous woodland lying on the flat-lying floodplain of the River Suir.

This estate woodland was planted over one hundred years ago and it contains a large component of exotic tree species. However, due to original planting and natural regeneration there is now a good mix of native and exotic species. About 5km north west of Cashel, Ardmayle pond is a long, possibly artificial water body running parallel to the River Suir. It is partly shaded by planted Lime (*Tilia* hybrids), Sycamore (*Acer pseudoplatanus*) and the native Alder. Growing beneath the trees are shade tolerant species such as Remote sedge (*Carex remota*). The site is of particular conservation interest for the presence of a number of Annex II animal species, including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three species of Lampreys - Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*) and River Lamprey (*Lampetra fluviatilis*) and Otter (*Lutra lutra*). This is one of only three known spawning grounds in the country for Twaite Shad. The site also supports populations of several other animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentonii*), Natterer's Bat (*M. nattereri*), Pipistrelle (*Pipistrellus pipistrellus*), Pine Marten (*Martes martes*), Badger (*Meles meles*), the Irish Hare (*Lepus timidus hibernicus*), Smelt (*Osmerus eperlanus*) and the Frog (*Rana temporaria*). Breeding stocks of Carp are found in Kilsheelan Lake. This is one of only two lakes in the country which is known to have supported breeding Carp. Carp require unusually high summer water temperatures to breed in Ireland and the site may therefore support interesting invertebrate populations. Parts of the site have also been identified as of ornithological importance for a number of Annex I (EU Birds Directive) bird species, including Greenland White-fronted Goose (10), Golden Plover (1490), Whooper Swan (7) and Kingfisher. Figures given in brackets are the average maximum counts from 4 count areas within the site for the three winters between 1994 and 1997. Wintering populations of migratory birds use the site. Flocks are seen in Coolfinn Marsh and also along the reedbeds and saltmarsh areas of the Suir. Coolfinn supports nationally important numbers of Greylag Geese on a regular basis. Numbers between 600 and 700 are recorded. Other species occurring include Mallard (21), Teal (159), Wigeon (26), Tufted Duck (60), Pintail (4), Pochard (2), Little Grebe (2), Black-tailed Godwit (20), Oystercatcher (16), Lapwing (993), Dunlin (101), Curlew (195), Redshank (28), Greenshank (4) and Green Sandpiper (1). Nationally important numbers of Lapwing (2750) were recorded at Faithlegg in the winter of 1996/97. In Cabragh marshes there is abundant food for surface feeding wildfowl which total at 1,000 or so in winter. Widgeon, Teal and Mallard are numerous and the latter has a large breeding population - with up to 400 in summer. In addition, less frequent species like Shoveler and Pintail occur and there are records for both Whooper and Bewick's swans. Kingfisher, a species that is listed on Annex I of the EU Birds Directive, occurs along some of the many tributaries throughout the site. Landuse at the site consists mainly of agricultural activities including grazing, silage production, fertilisation and land reclamation. The grassland is intensively managed and the rivers are therefore vulnerable to pollution from run-off of fertilisers and slurry. Arable crops are also grown. Fishing is a main tourist attraction on stretches of the Suir and some of its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. The Aherlow River is a designated Salmonid Water under the EU Freshwater Fish Directive. Other recreational activities such as boating, golfing and walking are also popular. Several industrial developments, which discharge into the river, border the site including three dairy related operations and a tannery. The

Lower River Suir contains excellent examples of a number of Annex I habitats, including the priority habitat Alluvial Forest. The site also supports populations of several Annex II animal species and a number of Red Data Book animal species. The presence of two legally protected plants (Flora (Protection) Order, 1999) and the ornithological importance of the river adds further to the ecological interest of this site. 17.05.2005

#### **River Barrow and River Nore SAC (Site Code 002162)**

This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties - Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portarlinton, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore. The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, *Vertigo moulinsiana* and the plant Killarney Fern. Good examples of Alluvial Forest are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Crack Willow (*S. fragilis*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*). Three rare invertebrates have been recorded in this habitat at Murphy's of the River. These are: *Neoscias obliqua* (Diptera: Syrphidae), *Tetanocera freyi* (Diptera: Sciomyzidae) and *Dictya umbrarum* (Diptera: Sciomyzidae). A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the EU Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Cratoneuron*

commutatum var. commutatum and *Eucladium verticillatum*, have been recorded. The best examples of old Oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadohir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss *Leucodon sciuroides*. It has a typical bird fauna including Jay, Long-eared Owl and Raven. A rare invertebrate, *Mitostoma chrysomelas*, occurs in Abbeyleix and only two other sites in the country. Two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The rare Myxomycete fungus, *Licea minima* has been recorded from woodland at Abbeyleix. Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by Oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*). All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*) Wood Rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*). On the steeply sloping banks of the River Nore about 5 km west of New Ross, in County Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of a relatively undisturbed, relict Oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown a small, mature Oak-dominant woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard Fern (*Blechnum spicant*), Cow-wheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*). Borris Demesne contains a very good example of a semi-natural broad-leaved woodland in very good condition. There is quite a high degree of natural regeneration of Oak and Ash through the woodland. At the northern end of the estate Oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly Oak species. The woods have a well established understorey of Holly (*Ilex aquifolium*), and the herb layer is varied, with Brambles abundant. Whitebeam (*Sorbus devoniensis*) has also been recorded. Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places. Floating River Vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include Water Starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), Milfoil

(*Myriophyllum* spp.), Potamogeton nitens, Broad-leaved Pondweed (*P. natans*), Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and Crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996). Dry Heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken (*Pteridium aquilinum*) and Gorse (*Ulex europaeus*) species with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (*Galium saxatile*), Foxglove (*Digitalis purpurea*), Common Sorrel (*Rumex acetosa*) and Bent Grass (*Agrostis stolonifera*). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (*Orobanche rapum-genistae*) has been recorded. Where rocky outcrops are shown on the maps Bilberry (*Vaccinium myrtillus*) and Wood Rush (*Luzula sylvatica*) are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of Clover species including the legally protected Clustered Clover (*Trifolium glomeratum*) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (*Sedum anglicum*), Sheep's-bit (*Jasione montana*) and Wild Madder (*Rubia peregrina*). These rocks also support good lichen and moss assemblages with *Ramalina subfarinacea* and *Hedwigia ciliata*. Dry Heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabriskey, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*), Tormentil (*Potentilla erecta*), Carnation Sedge (*Carex panicea*) and Bell Heather (*Erica cinerea*). Saltmeadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) (Flora Protection Order, 1987) are found. The very rare Divided Sedge (*Carex divisa*) is also found. Sea Rush (*Juncus maritimus*) is also present. Other plants recorded and associated with salt meadows include Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*), Sea Arrowgrass (*Triglochin maritima*) and Sea Plantain (*Plantago maritima*). *Salicornia* and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones. The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and

Creedaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include *Arenicola marina*, *Nephtys hombergii*, *Scoloplos armiger*, *Lanice conchilega* and *Cerastoderma edule*. The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (*Carex* spp.), Meadowsweet, Willowherb (*Epilobium* spp.) and rushes (*Juncus* spp.). Wet woodland also occurs. This area supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail. The dunes which fringe the strand at Duncannon are dominated by Marram grass (*Ammophila arenaria*) towards the sea. Other species present include Wild Sage (*Salvia verbenaca*), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*) and Buck's-horn Plantain (*Plantago coronopus*). Other habitats which occur throughout the site include wet grassland, marsh, reed swamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds. Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge (*Carex divisa*), Clustered Clover (*Trifolium glomeratum*), Basil Thyme (*Acinos arvensis*), Hemp nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh Grass (*Puccinellia fasciculata*), Meadow Barley (*Hordeum secalinum*), Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Wild Sage (*Salvia verbenaca*), Nettle-leaved Bellflower (*Campanula trachelium*), Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Broomrape (*Orobanche hederaceae*) and Greater Broomrape (*Orobanche rapum-genistae*). Of these the first nine are protected under the Flora Protection Order 1999. Divided Sedge (*Carex divisa*) was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and Summer Snowflake (*Leucojum aestivum*). Six rare lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria*. The rare moss *Leucodon sciurioides* also occurs. The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*), the marsh snail *Vertigo moulinsiana* and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel *M. m. durrovensis* and one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning. The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis*

*daubentoni*), Badger (*Meles meles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*). The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater Mussel species, *Anodonta anatina* and *A. cygnea*. The site is of ornithological importance for a number of E.U. Birds Directive Annex I species including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bar-tailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. Landuse at the site consists mainly of agricultural activities - many intensive, principally grazing and silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the main rivers and their tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein. Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Pearl Mussel which is limited to a 10 km stretch of the Nore, add further interest to this site.

16.01.03

### **Thomastown Quarry SAC (Site Code 002252)**

Thomastown Quarry is situated along the R700 road about 1 km north of Thomastown, Co. Kilkenny. It comprises a disused limestone quarry in which an excellent diversity of calcareous habitat types has developed. The site is a candidate SAC selected for petrifying springs, a habitat listed on Annex I of the E.U. Habitats Directive. Bare rock accounts for a significant area of the site, occurring both on cliff faces and the quarry floor. These rocky surfaces are well covered with lichens and mosses, and, particularly where there is shallow soil, also have species such as Biting Stonecrop (*Sedum acre*), White Stonecrop (*Sedum album*), Rue-leaved Saxifrage (*Saxifraga tridactylites*), Fairy Flax (*Linum catharticum*), Yellow Wort (*Blackstonia perfoliata*) and Blue Fleabane (*Erigeron acre*), the latter species being listed in the Irish Red Data Book. Ferns are frequent, with Rustyback fern (*Ceterach officinarum*) and Maidenhair Spleenwort (*Asplenium trichomanes*) amongst others. Where deeper calcareous soils occur on the dry rocky surfaces, species such as Red Fescue (*Festuca rubra*), Quaking Grass (*Briza media*), Lady's Bedstraw (*Galium verum*), Carline Thistle (*Carlina vulgaris*), Rest Harrow (*Ononis repens*), Blue Flax (*Linum bienne*) and Pyramidal Orchid (*Anacamptis pyramidalis*) are found. Seepage lines or springs are a feature of the site and of particular importance is the presence of petrifying springs with tufa formations. This rare habitat is rich in bryophytes, most notably *Palustriella commutata* var. *commutata*, and *Cratoneuron filicinum*. Other species include *Calliergon giganteum*, *Campyllum stellatum*, *Bryum pseudotriquetrum*, *Drepanocladus revolvens*, *Hylocomum splendens* and *Aneura pinguis*. Alkaline fen vegetation has developed over some of the seepage areas and also around the various ponds that occur on the quarry floor. The fen vegetation is quite species rich and includes Jointed Rush (*Juncus articulatus*), Toad Rush (*J. bufonius*), Common Spike-rush (*Eleocharis palustris*), various sedges (*Carex panicea*, *C. lepidocarpa*), Red Rattle (*Pedicularis palustris*), Brooklime (*Veronica beccabunga*), Marsh Orchid (*Dactylorhiza incarnata*) and Fleabane (*Pulicaria dysenterica*). Bryophytes are frequent in the fen habitat. Wetland plants such as Water Plantain (*Alisma plantago-aquatica*), Bulrush (*Typha latifolia*), Water Horsetail (*Equisetum fluviatile*) and Common Cottongrass (*Eriophorum angustifolium*) occur at the margins of the ponds. The ponds support populations of the Common Frog and Common Newt, both legally protected species. A limited survey of the aquatic invertebrates recorded the presence of two rare species for Ireland, the Coleopteran *Haliphus variegatus* and the Corixid *Hesperocorixa moesta*. Despite its small size, this site has an excellent diversity of calcareous habitats, including petrifying springs, a habitat with priority status on Annex I of the E.U. Habitats Directive.

26.11.2002

### **Natural Heritage Areas**

#### **Coan Bogs NHA (Site Code 002382)**

Coan Bogs NHA consists of two small areas of upland blanket bog located to the east of Castlecomer, Co. Kilkenny. The first bog lies in the townland of Coan East, 2.5 km to the north-east of Coan village at the altitude 270 m to 281 m. The second bog is situated 3 km to the north-west of Coan village in the townland of Smithstown. It lies at an altitude of 240 m. Bedrock geology for both areas is shale overlain locally by glacial till. Blanket bog vegetation is well developed in central areas of both bogs although cutover surrounds them. Plantation forestry also surrounds the sites. Vegetation on the eastern bog is characterised by tall Ling Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Hare's-tail Cottongrass (*Eriophorum vaginatum*) and lichen *Cladonia portentosa*. Round-leaved Sundew (*Drosera rotundifolia*) is also common. There are large

hummocks of bog mosses *Sphagnum capillifolium* and *S. subnitens*. Hollows containing some *S. papillosum* are dominated by Bog Asphodel (*Narthecium ossifragum*). Cranberry (*Vaccinium oxycoccos*), a species more characteristic of raised bogs, is also present and Bilberry (*V. myrtillus*) occurs on larger hummocks along with the moss *Hypnum jutlandicum*. Further east the bog becomes wetter with up to 60% bog moss cover. In this wet area Cranberry is abundant and another characteristic raised bog species, Bog-rosemary (*Andromeda polifolia*) occurs. The western bog is also dominated by Ling Heather, Crossed-leaved Heath and Hare's-tail Cottongrass with some Bog Asphodel. Bog moss cover reaches 80% and moss *Hypnum jutlandicum* and Lichens (*Cladonia* spp.) also occur. Bog-rosemary and Round-leaved Sundew are also present. This bog becomes drier in the south with Deergrass (*Scirpus cespitosus*) more prevalent. Bog Asphodel occurs on bare peat by the southern cutover. The cutover around the eastern bog is dominated by Purple Moor-grass (*Molinia caerulea*) with clear-felled plantations at the margins. Cutover on the northern side is planted with new conifer forest. Wet cutover on the eastern side is dominated by Purple Moor-grass with Ling Heather, Bilberry, the moss *Polytrichum commune* and scattered Willow (*Salix* spp.). The western bog has cutover dominated by Birch (*Betula* spp.) scrub to the east and south and new plantation forest to the west. Current landuse on the margins of the western bog consists of mechanical peat-cutting and planting of conifer forest. There is some encroachment of conifer seedlings onto both bogs from surrounding forestry. These activities that have resulted in loss of habitat and damage to the hydrological condition of both areas, pose a continuing threat to their conservation. Coan Bogs NHA is a site of considerable conservation significance consisting of upland blanket bog. This site, although small, is undisturbed and shows good characteristics of blanket bog with some raised bog indicator species. Blanket bog habitat is a globally scarce resource. It is largely confined to coastal regions at temperate latitudes with cool, wet, oceanic climates. North-west Europe contains some of the best-developed areas of blanket bog in the world. The most extensive areas are found in Ireland and Britain. Upland blanket bogs, due to their exposure to severe climatic conditions at high elevations, are particularly vulnerable to erosion by human activities and extensive areas are currently undergoing active erosion due mainly to overgrazing. The current area of intact upland blanket bog in Ireland represents only a fraction of the original resource, due to the combined impacts of afforestation and overgrazing, and intact examples are therefore extremely valuable for nature conservation. Their long-term survival requires sensitive management.

27.01.2004

### **Proposed Natural Heritage Areas**

#### **Dunmore Complex pNHA (Site Code 001859)**

A series of natural depressions in the gravels and boulder clays of the northern outskirts of Kilkenny city supports an interesting diversity of wetland and woodland and old meadow habitats. Although now much affected by development, seven fragments of the former ecological unit have been defined that represent the range of habitats of interest in this locality. In addition, in places the secondary vegetation of abandoned gravel workings is of interest and included within the site. These seven fragments between them make up the Natural Heritage Area named the Dunmore Complex. To the north of Dunmore house and alongside the railway one of the largest blocks included in the site is itself a complex including areas of wet Alder (*Alnus glutinosa*) and Willow (*Salix cinerea*) woodland with an understorey dominated by Greater tussock-sedge (*Carex*

paniculata) and Common reed (*Phragmites australis*), areas of nutrient poor acidic mire, typified by Purple moor-grass (*Molinia caerulea*) and Carnation sedge (*Carex panicea*), areas of more nutrient rich and more species rich freshwater marsh with Meadowsweet (*Filipendula ulmaria*) and Brown sedge (*Carex disticha*) and locally, wetter areas with swamp species such as Reedmace (*Typha latifolia*), Bottle sedge (*Carex rostrata*), Water horsetail (*Equisetum fluviatile*) Marsh cinquefoil (*Potentilla palustris*) and Bogbean (*Menyanthes trifoliata*). The whole complex is developed partly in a disused sand pit. By contrast to the north of this block, the smallest block to be designated is a much modified dry embankment, colonised by calcium demanding species such as Kidney vetch (*Anthyllis vulneraria*), Carline thistle (*Carlina vulgaris*) and Fairy flax (*Linum catharticum*). This area's special qualification in the NHA is the common occurrence of the legally protected plant, Basil thyme (*Acinos arvensis*). West of these blocks lie two blocks, both wooded ridges. The woods are mainly well drained although they do have wet marginal areas. They tend to be scrubby, the tree species Ash (*Fraxinus excelsior*), Rowan (*Sorbus aucuparia*), Sycamore (*Acer pseudoplatanus*) and occasional Oak (*Quercus robur*), joined by Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*) and Gorse (*Ulex europaeus*). The rare Red Data Book species, Nettle-leaved bellflower (*Campanula trachelium*) grows commonly in both of these woods along with a range of more common woodland herbs. The area around the River Nore is the national headquarters for this extremely rare species. Three further blocks to the south continue the theme of wetlands developing in depressions with some nutrient poor areas. Notable species include Greater spearwort (*Ranunculus lingua*) which grows in local profusion, Fen bedstraw (*Galium uliginosum*) which is widespread, and Great water dock (*Rumex hydrolapathum*). Although each block is small, overall they form a highly diverse site. This supports an impressive array of rare plant species mentioned above, plus a rare liverwort species (*Riccocarpos fluitans*). The wetland basins are vulnerable to infilling, as has happened extensively already, such as at the Rich View block which is the southern most of the seven blocks. Nutrient poor areas are particularly unusual to find in this sort of situation, exactly because of their vulnerability to pollution (nutrient enrichment). A large area in the centre of the cluster has been infilled and now accommodates a concrete works; careless disposal of waste water from this industry also threatens the site. A further wetland site to the south again, Newpark marsh, has also been designated an NHA and complements the Dunmore complex NHA.

20.12.2002

#### **Lough Macask pNHA (Site Code 001914)**

Lough Macask is a small pond north-west of Kilkenny that fluctuates in size over the year. It is isolated from the underlying limestone by glacial till with a shale content from the Slieve Ardagh Hills. The substrate is generally mineral without much content of peat, except, perhaps in the centre. The permanently flooded part contains plant species such as Broad-leaved Pondweed (*Potamogeton natans*), Water Plantain (*Alisma plantago-aquatica*) and Water Crowfoot (*Ranunculus aquatilis*) with the floating duckweeds, Lemna minor, *L. trisulca* and *dSpirodeia polyrhiza*. Towards the edge Bur Reed (*Sparganium erectum*) is important, leading into a zone of Flote Grass (*Glyceria fluitans*), Lesser Spearwort (*Ranunculus flammula*), Pink Water Speedwell (*Veronica catenata*), Mint (*Mentha aquatica*, *M. arvensis*) and Forget-me-not (*Myosotis scorpioides*, *M. laxa*). The surroundings of the pond are grazed and poached when the water levels are high. Silverweed (*Potentilla anserina*), Amphibious Bistort (*Persicaria amphibia*), Marsh Foxtail (*Alopecurus geniculatus*) and Marsh Ragwort (*Senecio aquatilis*) characterise this area. The vegetation shows that the site is similar in some

ways to a turlough. It therefore differs from most other wetlands around Kilkenny and has a certain interest for this reason. In addition it contains Greater Duckweed (*Spirodela polyrhiza*) which is not found elsewhere in the county.  
15.02.1995

#### **Archersgrove pNHA (Site Code 002051)**

The embankment on the south side of the River Suir, opposite the Inch saw mills, about 2km south of Kilkenny, supports a cover of scrubby woodland, chiefly of Gorse (*Ulex europaeus*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Beech (*Fagus sylvatica*) and occasional conifers. Three separate blocks of scrub woodland have been identified as a Natural Heritage Area. The sole interest of the site lies in its significant population of the legally protected plant Nettle-leaved bellflower (*Campanula trachelium*). This is a very rare species in Ireland. The River Suir bankside woodlands represent its Irish stronghold.

#### **River Nore/Abbeyleix Woods Complex pNHA (Site Code 002076)**

Stretching from Shanahoe in County Laois southwards along the River Nore to Ballyragget, County Kilkenny, this large Natural Heritage Area (NHA) encompasses several features of great scientific importance. Between the Abbeyleix estate and Attagh Bridge, the River Nore contains a large population of the Irish Freshwater Pearl Mussel (*Margaritifera durrovensis*). This mussel is only found in the Nore river catchment and because of its rarity, it is of international importance. It is now protected under the Berne Convention. The River Nore is also important spawning area for Twaite Shad which are listed as Vulnerable in the Irish Red Data Book published in 1993. The margins of the River Nore contain a good diversity of habitats which are host to several plant species of interest. Summer Snowflake (*Leucojum aestivum*) is possibly introduced at this site, but is a rare plant of marshes and damp meadows which is probably native in the south of Ireland and occurs near the old Durrow Mill. Meadow Saffron (*Colchicum autumnale*), a legally protected Irish Red Data Book species (Flora Protection Order 1987), is locally common in damp meadows and on the river banks but has declined due to agricultural improvement. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that an area called Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. There are many large and beautiful specimens trees of Oak (*Quercus robur*), some dating to 1700-1720 A.D. A famous specimen, the 'Old Oak' has been estimated as between 1380-1480 A.D. It also contains 6 epiphytic lichen species, including *Lobaria laetevirens* and *Lobaria pulmonaria*, which are indicators of ancient woodland. Abbeyleix Woods also supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, shrubs and woody climbers, 66 flowering herbs, 44 bryophytes and 92 lichens. In terms of its antiquity and species diversity, Abbeyleix is comparable to only two other sites, Charleville Wood (Offaly) and St. Johns Wood (Roscommon) and of these, Abbeyleix has the oldest trees and the most diverse lichen flora. These woodlands also contain rare and threatened habitats. A swamp woodland known as Lowlands which has developed on alluvial soils liable to flooding near the River Nore is an excellent example of a habitat which has virtually disappeared in Europe because of river drainage and reclamation. It also contains several plant species of interest including Dogwood (*Cornus sanguinea*) which is mainly confined to the south centre and parts of the west and is rather rare; Bird Cherry (*Prunus padus*), a threatened species which is listed in the Red Data Book; Small Water Pepper (*Polygonum minus*) which is very



rare in the southern half of the country; and Rough Horsetail (*Equisetum hyemale*) which mainly occurs in the east and is also rather rare. Several interesting plant species have also been noted near the river at Abbeyleix (Feehan, 1983) including Red Hemp Nettle (*Galeopsis angustifolia*), Greater Burnet-saxifrage (*Pimpinella major*), Ivy Broomrape (*Orobancha hederea*) and Thin Spiked Wood Sedge (*Carex strigosa*). The Nettle-Leaved Bellflower (*Campanula trachelium*), a legally protected species which only occurs in Ireland along the River Nore and River Barrow, and a rare moss *Leucodon sciuroides* have also been recorded here. As with many other old and intact Irish woodlands, the fauna is of considerable interest. A rare invertebrate of the Harvestman species, *Mitostoma chrysomelas*, occurs in Abbeyleix and only two other sites in the country, two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The bird fauna is also rich and includes Jay, Long-Eared Owl and Raven. Breeding Otters have also been recorded. The quality and naturalness of this site have been affected by several factors. The woods at Abbeyleix have been extensively cleared and replanted with conifers. The ground flora has also been altered by the annual clearance of undergrowth and also by occasional grazing. Much of the wet grassland along the margins of the River Nore have been altered by agricultural improvement and intensive grazing. The semi-natural woodland along the river banks have also been felled and replanted with conifers in many areas. The water quality of the River Nore has been affected by agricultural and some industrial pollution. The river is maintained by the local angling club who are interested in preserving its water quality but the threat from agricultural activities in this region is high. Livestock also pose a threat to the mussel beds in areas where they have open access to the river. Despite these factors, this Natural Heritage Area is of great importance for its rare fauna, flora and habitats. It contains an internationally protected species and a well documented ancient woodland which is of national importance.

#### **Ice House near Inistioge pNHA (Site Code 002094)**

This site is a summer roost of the Daubenton's bat (*Myotis daubentonii*). Approximately 80 bats hang from the ceiling of this stone structure located beside the River Nore, just outside Inistioge. This is a site of national importance because it is the third largest colony of this species in the country. The building is owned by Coillte and was renovated by the local community as a site of public interest. So far, the bats have not been adversely affected by people visiting the site. This species is dependent on aquatic insects so the proximity of the River Nore is of utmost importance to the colony. It is essential that pollution of this river system and its associated tributaries is prevented.

10.07.1995

#### **Lower River Suir pNHA (Site Code 002137)**

This site consists of the freshwater stretches of the River Suir immediately south of Thurles, the tidal stretches as far as the confluence with the Barrow/Nore immediately east of Cheekpoint in Co. Waterford and many tributaries including the Clodiagh in Co. Waterford, the Lingaun, Anner, Nier, Tar, Aherlow, Multeen and Clodiagh in Co. Tipperary. The Suir and its tributaries flow through the counties of Tipperary, Kilkenny and Waterford. Upstream of Waterford city, the swinging meanders of the Suir criss-cross the Devonian sandstone rim of hard rocks no less than three times as they leave the limestone-floored downfold below Carrick. In the vicinity of Carrick-on-Suir the river follows the limestone floor of the Carrick Syncline. Upstream of Clonmel the river and its tributaries traverse Upper Palaeozoic Rocks, mainly the Lower Carboniferous Visean and Tournaisian. The freshwater stretches of the Clodiagh River in Co. Waterford traverse Silurian rocks, through narrow bands of Old Red

Sandstone and Lower Avonian Shales before reaching the carboniferous limestone close to its confluence with the Suir. The Aherlow River flows through a Carboniferous limestone valley, with outcrops of Old Red Sandstone forming the Galtee Mountains to the south and the Slievenamuck range to the north. Glacial deposits of sands and gravels are common along the valley bottom, flanking the present-day river course. The site is a candidate SAC selected for the presence of the priority habitats on Annex I of the E.U. Habitats Directive - alluvial wet woodlands and Yew Wood. The site is also selected as a candidate SAC for floating river vegetation, Atlantic salt meadows, Mediterranean salt meadows, old oak woodlands and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon and Otter. Alluvial wet woodland is declining habitat in Europe as a result of drainage and reclamation. The best examples of this type of woodland in the site are found on the islands just below Carrick-on-Suir and at Fiddown Island. Species occurring here include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Pendulous Sedge (*Carex pendula*), Meadowsweet (*Filipendula ulmaria*) and Valerian (*Valeriana officinalis*). The terrain is littered with dead trunks and branches and intersected with small channels which carry small streams to the river. The bryophyte and lichen floras appear to be rich and require further investigation. A small plot is currently being coppiced and managed by National Parks and Wildlife. In the drier areas the wet woodland species merge with other tree and shrub species including Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*). This adds further to the ecological interest of this site. Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Old oak woodlands are also of importance at the site. The best examples are seen in Portlaw Wood which lies on both sides of the Clodiagh River. On the south-facing side the stand is more open and the Oaks (mainly *Quercus robur*) are well grown and spreading. Ivy (*Hedera helix*) and Bramble (*Rubus fruticosus*) are common on the ground, indicating relatively high light conditions. Oak regeneration is dense, varying in age from 0-40 years and Holly (*Ilex aquifolium*) is fairly common but mostly quite young. Across the valley, by contrast, the trees are much more closely spaced and though taller are poorly grown on average. There are no clearings; large Oaks extend to the boundary wall. In the darker conditions, Ivy is much rarer and Holly much more frequent, forming a closed canopy in places. Oak regeneration is uncommon since there are as yet few natural clearings. The shallowness of the soil on the north-facing slope probably contributes to the poor tree growth there. The acid nature of the substrate has induced a "mountain" type Oakwood community to develop. There is an extensive species list present throughout including an abundance of mosses, liverworts and lichens. The rare lichen *Lobaria pulmonaria*, an indicator of ancient woodlands, is found. Inchinquillib Wood consists of three small separate sloping blocks of woodland in a valley cut by the young Multeen River and its tributaries through acidic Old Red Sandstone, and Silurian rocks. Two blocks, both with an eastern aspect, located to the north of the road, are predominantly of Sessile oak (*Quercus petraea*) and Hazel, with Downy Birch

(*Betula pubescens*), Ash and Holly. The ground flora is quite mixed with for example Wood sedge (*Carex sylvatica*), Bluebell (*Hyacinthoides non-scriptus*), Primrose (*Primula vulgaris*), Wood-sorrel (*Oxalis acetosella*), Pignut (*Conopodium majus*) and Hard fern (*Blechnum spicant*). The base poor nature of the underlying rock is, to some extent masked by the overlying drift. The third block, to the south of the road, and with a northern aspect, is a similar although less mature mixture of Sessile Oak, Birch and Holly, the influence of the drift is more marked, with the occurrence of Wood anemone (*Anemone nemorosa*) amongst the ground flora. Floating river vegetation is evident in the freshwater stretches of the River Suir and along many of its tributaries. Typical species found include Canadian Pondweed (*Elodea canadensis*), Milfoil (*Myriophyllum* spp.), Fennel Pondweed (*Potamogeton pectinatus*), Curled Pondweed (*P. crispus*), Perfoliate Pondweed (*P. perfoliatus*), Pond Water-crowfoot (*Ranunculus peltatus*), other Crowfoots (*Ranunculus* spp.) and the moss *Fontinalis antipyretica*. At a couple of locations along the river, Opposite-leaved Pondweed (*Groenlandia densa*) occurs. This species is protected under the Flora (Protection) Order, 1999. The Aherlow River is fast-flowing and mostly follows a natural unmodified river channel. Submerged vegetation includes the aquatic moss *Fontinalis antipyretica* and Stream Water-crowfoot (*Ranunculus peltatus*), while shallow areas support species such as Reed Canary-grass (*Phalaris arundinacea*), Brooklime (*Veronica beccabunga*) and Water Mint (*Mentha aquatica*). The river bank is fringed in places with Alder (*Alnus glutinosa*) and Willows (*Salix* spp.). The Miltreen River is fast flowing, mostly gravel-bottomed and appears to follow a natural unmodified river channel. Water Crowfoots occur in abundance and the aquatic moss *Fontinalis antipyretica* is also common. In sheltered shallows, species such as Water-cress (*Rorippa nasturtium-aquaticum*) and Water-starworts (*Callitriche* spp.) occur. The river channel is fringed for most of its length with Alder, Willow and a narrow strip of marshy vegetation. Salt meadows occur below Waterford City in old meadows where the embankment is absent, or has been breached, and along the tidal stretches of some of the in-flowing rivers below Little Island. There are very narrow, non-continuous bands of this habitat along both banks. More extensive areas are also seen along the south bank at Ballynakill, the east side of Little Island, and in three large salt meadows between Ballynakill and Cheekpoint. The Atlantic and Mediterranean sub types are generally intermixed. The species list is extensive and includes Red Fescue (*Festuca rubra*), Oraches (*Atriplex* spp.), Sea Aster (*Aster tripolium*), Sea Couch Grass (*Elymus pycnanthus*), frequent Sea Milkwort (*Glaux maritima*), occasional Wild Celery (*Apium graveolens*), Parsley Water-dropwort (*Oenanthe lachenalii*), English Scurvygrass (*Cochlearia anglica*) and Sea Arrowgrass (*Triglochin maritima*). These species are more representative of the Atlantic sub-type of the habitat. Common Cord-grass (*Spartina anglica*), is rather frequent along the main channel edge and up the internal channels. The legally protected (Flora (Protection) Order, 1999) Meadow Barley (*Hordeum secalinum*) grows at the landward transition of the saltmarsh. Sea Rush (*Juncus maritimus*), an indicator of the Mediterranean salt meadows, also occurs. Other habitats at the site include wet and dry grassland, marsh, reed swamp, improved grassland, coniferous plantations, deciduous woodland, scrub, tidal river, stony shore and mudflats. The most dominant habitat adjoining the river is improved grassland, although there are wet fields with species such as Yellow Flag (*Iris pseudacorus*), Meadow Sweet (*Filipendula ulmaria*), Rushes (*Juncus* spp.), Meadow Buttercup (*Ranunculus acris*) and Cuckoo Flower (*Cardamine pratensis*). Cabragh marshes, just below Thurles, lie in a low-lying tributary valley into which the main river floods in

winter. Here there is an extensive area of Common Reed (*Phragmites australis*) with associated marshland and peaty fen. The transition between vegetation types is often well displayed. A number of wetland plants of interest occur, in particular the Narrow-leaved Bulrush (*Typha angustifolia*), Bottle Sedge (*Carex rostrata*) and Blunt-flowered Rush (*Juncus subnodulosus*). The marsh is naturally eutrophic but it has also the nutritional legacy of the former sugar factory which discharged into it through a number of holding lagoons, now removed. Production is high which is seen in the size of such species as Celery-leaved Buttercup (*Ranunculus sceleratus*) as well as in the reeds themselves. Throughout the Lower River Suir site are small areas of woodland other than those described above. These tend to be a mixture of native and non-native species, although there are some areas of semi-natural wet woodland with species such as Ash and Willow. Cahir Park Woodlands is a narrow tract of mixed deciduous woodland lying on the flat-lying floodplain of the River Suir. This estate woodland was planted over one hundred years ago and it contains a large component of exotic tree species. However, due to original planting and natural regeneration there is now a good mix of native and exotic species. About 5km north west of Cashel, Ardmayle pond is a long, possibly artificial water body running parallel to the River Suir. It is partly shaded by planted Lime (*Tilia* hybrids), Sycamore (*Acer pseudoplatanus*) and the native Alder. Growing beneath the trees are shade tolerant species such as Remote sedge (*Carex remota*). The site is of particular conservation interest for the presence of a number of Annex II animal species, including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three species of Lampreys - Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*) and River Lamprey (*Lampetra fluviatilis*) and Otter (*Lutra lutra*). This is one of only three known spawning grounds in the country for Twaite Shad. The site also supports populations of several other animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentoni*), Natterer's Bat (*M. nattereri*), Pipistrelle (*Pipistrellus pipistrellus*), Pine Marten (*Martes martes*), Badger (*Meles meles*), the Irish Hare (*Lepus timidus hibernicus*), Smelt (*Osmerus eperlanus*) and the Frog (*Rana temporaria*). Breeding stocks of Carp are found in Kilsheelan Lake. This is one of only two lakes in the country which is known to have supported breeding Carp. Carp require unusually high summer water temperatures to breed in Ireland and the site may therefore support interesting invertebrate populations. Parts of the site have also been identified as of ornithological importance for a number of Annex I (EU Birds Directive) bird species, including Greenland White-fronted Goose (10), Golden Plover (1490), Whooper Swan (7) and Kingfisher. Figures given in brackets are the average maximum counts from 4 count areas within the site for the three winters between 1994 and 1997. Wintering populations of migratory birds use the site. Flocks are seen in Coolfinn Marsh and also along the reedbeds and saltmarsh areas of the Suir. Coolfinn supports nationally important numbers of Greylag Geese on a regular basis. Numbers between 600 and 700 are recorded. Other species occurring include Mallard (21), Teal (159), Wigeon (26), Tufted Duck (60), Pintail (4), Pochard (2), Little Grebe (2), Black-tailed Godwit (20), Oystercatcher (16), Lapwing (993), Dunlin (101), Curlew (195), Redshank (28), Greenshank (4) and Green Sandpiper (1). Nationally important numbers of Lapwing (2750) were recorded at Faithlegg in the winter of 1996/97. In Cabragh marshes there is abundant food for surface feeding wildfowl which total at 1,000 or so in winter. Widgeon, Teal and Mallard are numerous and the latter has a large breeding population - with up to 400 in summer. In addition, less

frequent species like Shoveler and Pintail occur and there are records for both Whooper and Bewick's swans. Kingfisher, a species that is listed on Annex I of the EU Birds Directive, occurs along some of the many tributaries throughout the site. Landuse at the site consists mainly of agricultural activities including grazing, silage production, fertilisation and land reclamation. The grassland is intensively managed and the rivers are therefore vulnerable to pollution from run-off of fertilisers and slurry. Arable crops are also grown. Fishing is a main tourist attraction on stretches of the Suir and some of its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. The Aherlow River is a designated Salmonid Water under the EU Freshwater Fish Directive. Other recreational activities such as boating, golfing and walking are also popular. Several industrial developments, which discharge into the river, border the site including three dairy related operations and a tannery. The Lower River Suir contains excellent examples of a number of Annex I habitats, including the priority habitat Alluvial Forest. The site also supports populations of several Annex II animal species and a number of Red Data Book animal species. The presence of two legally protected plants (Flora (Protection) Order, 1999) and the ornithological importance of the river adds further to the ecological interest of this site. 06.10.2006

#### **River Barrow and River Nore pNHA (Site Code 002162)**

This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties – Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portllington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore. The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, Salicornia mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, Desmoulin's Whorl Snail *Vertigo moulinsiana* and the Killarney Fern. Good examples of Alluvial Forest are seen at Rathsnagadan, Murphy's of the

River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Crack Willow (*S. fragilis*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*). Three rare invertebrates have been recorded in this habitat at Murphy's of the River. These are: *Neoscasia obliqua* (Diptera: Syrphidae), *Tetanocera freyi* (Diptera: Sciomyzidae) and *Dictya umbrarum* (Diptera: Sciomyzidae). A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the EU Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Cratoneuron commutatum* var. *commutatum* and *Eucladium verticillatum*, have been recorded. The best examples of old Oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadahir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss *Leucodon sciuroides*. It has a typical bird fauna including Jay, Long-eared Owl and Raven. A rare invertebrate, *Mitostoma chrysomelas*, occurs in Abbeyleix and only two other sites in the country. Two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The rare *Myxomycete* fungus, *Licea minima* has been recorded from woodland at Abbeyleix. Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by Oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*). All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*) Wood Rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*). On the steeply sloping banks of the River Nore about 5 km west of New Ross, in County Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of a relatively undisturbed, relict Oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown a small, mature Oak-dominant woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry (*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard Fern (*Blechnum spicatum*), Cow-wheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*). Borris Demesne contains a very good example of a semi-natural broad-leaved woodland in very good

condition. There is quite a high degree of natural regeneration of Oak and Ash through the woodland. At the northern end of the estate Oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly Oak species. The woods have a well established understorey of Holly (*Ilex aquifolium*), and the herb layer is varied, with Brambles abundant. Whitebeam (*Sorbus devoniensis*) has also been recorded. Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosetrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places. Floating River Vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include Water Starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), Milfoil (*Myriophyllum* spp.), Potamogeton nitens, Broad-leaved Pondweed (*P. natans*), Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and Crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996). Dry Heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken (*Pteridium aquilinum*) and Gorse (*Ulex europaeus*) species with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (*Galium saxatile*), Foxglove (*Digitalis purpurea*), Common Sorrel (*Rumex acetosa*) and Bent Grass (*Agrostis stolonifera*). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (*Orobanche rapum-genistae*) has been recorded. Where rocky outcrops are shown on the maps Bilberry (*Vaccinium myrtillus*) and Wood Rush (*Luzula sylvatica*) are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of Clover species including the legally protected Clustered Clover (*Trifolium glomeratum*) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (*Sedum anglicum*), Sheep's-bit (*Jasione montana*) and Wild Madder (*Rubia peregrina*). These rocks also support good lichen and moss assemblages with *Ramalina subfarinacea* and *Hedwigia ciliata*. Dry Heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabrisky, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*), Tormentil (*Potentilla erecta*), Carnation Sedge (*Carex panicea*) and Bell Heather (*Erica cinerea*). Saltmeadows occur at the southern section of the site in old meadows where the embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas

bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) (Flora Protection Order, 1987) are found. The very rare Divided Sedge (*Carex divisa*) is also found. Sea Rush (*Juncus maritimus*) is also present. Other plants recorded and associated with salt meadows include Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*), Sea Arrowgrass (*Triglochin maritima*) and Sea Plantain (*Plantago maritima*). *Salicornia* and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones. The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include *Arenicola marina*, *Nephtys hombergii*, *Scopelos armiger*, *Lanice conchilega* and *Cerastoderma edule*. The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (*Carex* spp.), Meadowsweet, Willowherb (*Epilobium* spp.) and rushes (*Juncus* spp.). Wet woodland also occurs. This area supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail. The dunes which fringe the strand at Duncannon are dominated by Marram grass (*Ammophila arenaria*) towards the sea. Other species present include Wild Sage (*Salvia verbenaca*), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*) and Buck's-horn Plantain (*Plantago coronopus*). Other habitats which occur throughout the site include wet grassland, marsh, reed swamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds. Seventeen Red Data Book plant species have been recorded within the site, most in the recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge (*Carex divisa*), Clustered Clover (*Trifolium glomeratum*), Basil Thyme (*Acinos arvensis*), Hemp nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh Grass (*Puccinellia fasciculata*), Meadow Barley (*Hordeum secalinum*), Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Wild Sage (*Salvia verbenaca*), Nettle-leaved Bellflower (*Campanula trachelium*), Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Broomrape (*Orobanche hederaceae*) and Greater Broomrape (*Orobanche rapum-genistae*). Of these the first nine are protected under the Flora Protection Order 1999. Divided Sedge (*Carex divisa*) was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and

Summer Snowflake (*Leucjum aestivum*). Six rare lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria*. The rare moss *Leucodon sciuroides* also occurs. The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaite Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*), the marsh snail *Vertigo moulinsiana* and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel *M. m. durrovensis* and one of only a handful of spawning grounds in the country for Twaite Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning. The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentoni*), Badger (*Meles meles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*). The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater Mussel species, *Anodonta anatina* and *A. cygnea*. The site is of ornithological importance for a number of E.U. Birds Directive Annex I species including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bar-tailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country. Landuse at the site consists mainly of agricultural activities – many intensive, principally grazing and silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the main rivers and their tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel and *Rhododendron (Rhododendron ponticum)*. The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on

controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein. Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Pearl Mussel which is limited to a 10 km stretch of the Nore, add further interest to this site.

06.10.2006

#### **Thomastown Quarry pNHA (Site Code 002252)**

Thomastown Quarry is situated along the R700 road about 1 km north of Thomastown, Co. Kilkenny. It comprises a disused limestone quarry in which an excellent diversity of calcareous habitat types has developed. The site is a candidate SAC selected for petrifying springs, a habitat listed on Annex I of the E.U. Habitats Directive. Bare rock accounts for a significant area of the site, occurring both on cliff faces and the quarry floor. These rocky surfaces are well covered with lichens and mosses, and, particularly where there is shallow soil, also have species such as Biting Stonecrop (*Sedum acre*), White Stonecrop (*Sedum album*), Rue-leaved Saxifrage (*Saxifraga tridactylites*), Fairy Flax (*Linum catharticum*), Yellow Wort (*Blackstonia perfoliata*) and Blue Fleabane (*Erigeron acre*), the latter species being listed in the Irish Red Data Book. Ferns are frequent, with Rustyback fern (*Ceterach officinarum*) and Maidenhair Spleenwort (*Asplenium trichomanes*) amongst others. Where deeper calcareous soils occur on the dry rocky surfaces, species such as Red Fescue (*Festuca rubra*), Quaking Grass (*Briza media*), Lady's Bedstraw (*Galium verum*), Carlina Thistle (*Carlina vulgaris*), Rest Harrow (*Ononis repens*), Blue Flax (*Linum bienne*) and Pyramidal Orchid (*Anacamptis pyramidalis*) are found. Seepage lines or springs are a feature of the site and of particular importance is the presence of petrifying springs with tufa formations. This rare habitat is rich in bryophytes, most notably *Palustriella commutata var. commutata*, and *Cratoneuron filicinum*. Other species include *Calliergon giganteum*, *Campyllum stellatum*, *Bryum pseudotriquetrum*, *Drepanocladus revolvens*, *Hylacomium splendens* and *Aneura pinguis*. Alkaline fen vegetation has developed over some of the seepage areas and also around the various ponds that occur on the quarry floor. The fen vegetation is quite species rich and includes Jointed Rush (*Juncus articulatus*), Toad Rush (*J. bufonius*), Common Spike-rush (*Eleocharis palustris*), various sedges (*Carex panicea*, *C. lepidocarpa*), Red Rattle (*Pedicularis palustris*), Brooklime (*Veronica beccabunga*), Marsh Orchid (*Dactylorhiza incarnata*) and Fleabane (*Pulicaria dysenterica*). Bryophytes are frequent in the fen habitat. Wetland plants such as Water Plantain (*Alisma plantago-aquatica*), Bulrush (*Typha latifolia*), Water Horsetail (*Equisetum fluviatile*) and Common Cottongrass (*Eriophorum angustifolium*) occur at the margins of the ponds. The ponds support populations of the Common Frog and Common Newt, both legally protected species. A limited survey of the aquatic invertebrates recorded the presence of two rare species for Ireland, the Coleopteran *Haliplus variegatus* and the Corixid *Hesperocorixa moesta*. Despite its small size, this site has an excellent diversity of

calcareous habitats, including petrifying springs, a habitat with priority status on Annex I of the E.U. Habitats Directive. 26.11.2002

**Ballykeefe Woodland pNHA (Site Code 000400)**

Ballykeefe Wood is an ash-oak-elm woodland (Corylo-Fraxinetum) on a prominent limestone hill. The area has been inter-planted with a mixture of conifers and beech which have been largely removed, but uneconomic stands remain scattered throughout the area. *Rubus fruticosus* is a prominent species of the field layer with *Hyacinthus hyacinthoides*. This is one of the largest such woods in the south-east region. Despite considerable disturbance it has the potential of recovering to a valuable woodland and should be considered of national importance. 15th February, 1995.

**Dunmore Cave pNHA (Site Code 000401)**

Dunmore Cave is a tourist cave owned by the Office of Public Works which is used by at least 50 Natterer's bats (*Myotis nattereri*) during the summer months. It is a fossil cave located in an isolated limestone outcrop on the Castlecomer plateau, over-looking the Dinin River Valley, approximately seven miles north of Kilkenny City. It is possible that more bats roosted in the cave before it was developed and opened to the public in the late 1960's. It is possible that this bat also hibernates in the cave during the winter. However, it is not easy to count Natterer's bats in hibernation as they hide in small cracks and crevices. The Natterer's Bat is an uncommon bat in Ireland, only several thousand are known from throughout the island. Body measurements include forearm 36-43 mm; head and body 45 mm; wingspan 270mm; weight 5-12g. It is distinguished from other species by the presence of a still fringe of hairs along the tail membrane, fairly long pink ears and bright white fur on its underside. Few nursery colonies are known and these are in a variety of buildings, including church and house roofs, stone barns and caves. Single bats or small numbers are found under bridges during the summer. During winter, a few Natterer's Bats have been found in underground sites. This species forages in woodland where it catches insects in the air, or off foliage or the ground. As only a few thousand Natterer's Bat have been recorded throughout Ireland in the past ten years, this site is definitely of national importance and possibly of international importance. 10.07.1995

**Fiddown Island pNHA (Site Code 000402)**

Fiddown Island Nature Reserve is the property of the National Parks and Wildlife Service. The site consists of a discrete island on the tidal reaches of the River Suir, a band of land both sides of the river and a small stretch of tidal river and mudflats. It is 7 km east of Carrick-on-Suir. The large island is colonised primarily by wet, semi-natural deciduous woodland. The dominant habitats are Willow (*Salix* spp.) woodland and scrub, surrounded by Common Reed (*Phragmites australis*) swamp and mudflats. The reed bed is extensive at the west side of the island. Beneath the willows, there is a tall, herb rich flora, indicative of very wet conditions. This includes Pendulous Sedge (*Carex pendula*), Hemp-agrimony (*Eupatorium cannabinum*), Reed Canary-grass (*Phalaris arundinacea*), Water Dropwort (*Oenanthe crocata*) and Valerian (*Valeriana officinalis*). At the west side of the river wet Willow woodland (*Salix* spp.) grades into drier scrub woodland with a diverse range of tree and shrub species which is Oak (*Quercus* sp.) and Hazel (*Corylus avellana*) dominant in places with some Ash (*Fraxinus excelsior*), Birch (*Betula* sp.), Guelder Rose (*Viburnum opulus*) and Blackthorn (*Prunus spinosa*). Regeneration of the tree species is also occurring. Abandonment of traditional willow management on the island has allowed

large trees to develop, but illegal felling of timber in the past opened up much of the woodland. This has already begun to close over. Despite this, the site is of national importance for its botanical assemblages and habitat rarity. It also supports an interesting invertebrate fauna and is attractive to birdlife. 15.12.1995

**Garryrickin Nature Reserve pNHA (Site Code 000403)**

Garryrickin Nature Reserve is a National Parks and Wildlife Service conservation area which consists of two small tracts of deciduous forest, 5 km south of Callan in Co. Kilkenny. Because of the rarity of deciduous woodland habitats throughout the rest of the country, these woodlands are of national importance. Besides this, these woodlands harbour a diverse range of species, some of which are threatened. The reserve consists of two separate parts which lie adjacent to commercial Coillte-owned conifer plantation. The upper part of the woodland is on a ridge formed of Old Red Sandstone bedrock. The canopy is dominated by Oak (*Quercus* spp.) and there is good regeneration of Birch (*Betula* spp.), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*) and Holly (*Ilex aquilinum*) in the understory. Further down slope, a second area of woodland lies on poorly drained clays and comprised of young Oak and Elm (*Ulmus* spp.) with a rich ground flora characteristic of wet soils. This area used to contain one of the largest stands of Elm in the country but many of them have died due to Dutch Elm disease. This species is now in decline on an international scale and healthy specimens are very rare. Parts of the Garryrickin Nature Reserve have now been underplanted with conifers but it is still a valuable example of a deciduous woodland on fertile soils. Cherry laurel (*Prunus laurocerasus*) is invading both areas to the detriment of natural tree and shrub growth, but work is ongoing to try and eliminate this introduced species. 15.02.1995

**Hugginstown Fen pNHA (Site Code 000404)**

Hugginstown Fen is situated approximately 4 km south-west of Ballyhale, Co. Kilkenny. The site consists of a relatively large, isolated area of swamp and floating fen developed in a small valley in hilly country. It is underlain by limestone glacial till overlying and surrounded by acid Old Red Sandstone. The catchment is relatively small and iron-rich springs are an important source of water for the wetland. The site is a candidate Special Area of Conservation selected for alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive. The northern third of the fen is dominated by Common Reed (*Phragmites australis*) swamps with some small areas of open water near springs. The remainder of the site consists of species-rich fen, partly developed on mats of floating vegetation, dominated by a tall herb community in which Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Water Horsetail (*Equisetum fluviatile*), Bulrush (*Typha latifolia*), Water Mint (*Mentha aquatica*) and Lesser Tussock-sedge (*Carex diandra*) are common. Other species present include Nodding Bur-marigold (*Bidens cernua*), Marsh St. John's-wort (*Hypericum elodes*), Black Bog-rush (*Schoenus nigricans*) and Tubular Water-dropwort (*Oenanthe fistulosa*). Species-rich Rush/Purple Moor-grass (*Junco-Molinion*) grassland occurs in drained areas at the southern and northern end and around the margins at the peat-mineral interface. Small clumps of Willow (*Salix* sp.) occur occasionally on the fen margin. An interesting feature of this area is that the water flows overground initially then disappears abruptly underneath the floating fen vegetation. Two uncommon insect species recorded from Hugginstown Fen are Scarce Emerald Damselfly (*Lestes dryas*) and the Hoverfly *Parhelophis consimilis*. The Common Frog, a Red Data Book species, is frequent at the site. Although this site



has been damaged to some extent by drainage, especially in the southern part, it contains an important example of an alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive and remains one of the most interesting and diverse fen sites in Ireland.

13.06.2003

**Kyleadohir Wood Nature Reserve pNHA (Site Code 000405)**

Mixed woodland of oak, alder and elm with aspen. The area is low lying and poorly drained and is dissected by ditches. Dense thickets of scrub occur in places and the ground flora is varied with an abundance of grasses and rushes in wetter areas. A rather disturbed wood which may have been originally planted on old field systems. Nevertheless it has a variety of species and is one of the few woodlands of its type in an intensively agricultural area. Level semi-natural woodland of this type is nationally scarce.

15.02.1995

**Lough Cullin pNHA (Site Code 000406)**

Lough Cullin is the only natural lake in south Kilkenny and occupies a low-lying depression 6km north of Waterford. Streams enter the basin from the NW, NE and SE and cause considerable flooding in most winters. The outflow is sluggish towards Dunkitt and the Suir though here and elsewhere there has been work to deepen the channel. Although formerly peat-filled, at least in parts, there is now little evidence of peat in the area except in the soil and some fen vegetation on the eastern side of the lake and in the frequent use of bog oak in the fences. Generally the area consists of wet grassland made up of Creeping Bent (*Agrostis stolonifera*) with Tufted Hair Grass (*Deschampsia cespitosa*), marsh Ragwort (*Senecio aquaticus*) and Creeping Buttercup (*Ranunculus repens*). Where peat remains there is often a component of sedges (*Carex panicea*, *C. nigra*, *C. demissa*) as well as Meadowsweet (*Filipendula ulmaria*), Reed Fescue (*Festuca arundinacea*) and Devilsbit (*Succisa pratensis*). Cinquefoils (*Potentilla palustris*, *P. reptans*) and rushes (*Juncus acutiflorus*, *J. bulbosus*) are occasional. Most of the fields within the site are grazed though some are cut for silage and, rarely, tilled for cereals despite the winter flooding. The only area of semi-natural vegetation occurs east of the lake and within the lake itself. The fens here include much Reed Fescue as well as Loosestrifes (*Lythrum salicaria*, *Lysimachia nemorum*), Meadowsweet and Wild Angelica (*Angelica sylvestris*), Bottle Sedge (*Carex rostrata*) and Reed (*Phragmites australis*) grow near drains and around the lakeshore where they are joined by Narrow-leaved Bulrush (*Typha angustifolia*) in its only Kilkenny station, by Bur Reeds (*Sparganium erectum*, *S. minimum*) and by Bur Marigold (*Bidens cernua*). The main interest of the site lies in its flowering plants some of which are rare in the Kilkenny and Waterford region. There is also a high population of snipe in winter as well as smaller numbers of curlew, lapwing and mallard. In summer sedge warbler and reed bunting breed.

15.02.1995

**The Loughans pNHA (Site Code 000407)**

The Loughans is a turlough situated in flat land about 3km east of Urlingford, below the Slieve Ardagh Hills, in County Kilkenny. The basin is slightly undulating, with banks and hummocks of glacial drift around which the water rises. It has a level floor for the most part, but swallowholes and subsidence hollows are present. The turlough floods regularly, despite some drainage. In summer, it retains a permanent central pond and there are several subsidiary wet hollows at the eastern end. Around the central pond there are plant species typical of fluctuating water levels, and Amphibious Bistort (*Polygonum amphibium*) is common. Standing water is colonised by Broad-leaved Pondweed

(*Potamogeton natans*), Water-crowfoot species (*Ranunculus aquatilis* and *R. trichophyllus*) and Unbranched Bur-reed (*Sparganium emersum*). Some ponds have a floating sraw of vegetation formed by Floating Sweet-grass (*Glyceria fluitans*), Speedwells (*Veronica scutellata* and *V. catenata*) and Lesser Spearwort (*Ranunculus flammula*). About half of the basin is semi-reclaimed pasture dominated by Perennial Rye-grass (*Lolium perenne*), with other agricultural grasses such as Crested Dog's-tail (*Cynosurus cristatus*), and White Clover (*Trifolium repens*). Elsewhere, there is a more natural turlough vegetation, rich in small Sedges (*Carex nigra*, *C. disticha* and *C. hirta*), and Grasses such as Tufted Hair-grass (*Deschampsia cespitosa*) and Purple Moor-grass (*Molinia caerulea*). Wetland grasses such as Creeping Bent (*Agrostis stolonifera*) and Marsh Foxtail (*Alopecurus geniculatus*) are found in places, with a notable abundance of Creeping Cinquefoil (*Potentilla reptans*). To the north, there is a gradation into drier, lime-rich grassland where another recognisable and characteristic grassland community occurs, adding habitat diversity to the site. Several rare and scarce plant species occur at The Loughans. Green-winged Orchid (*Orchis morio*) occurs on the limestone grassland: this species is listed under The Flora Protection Order (1987). Two other species listed in The Irish Red Data Book, Marsh Helleborine (*Epipactis palustris*) and Northern Yellow-cress (*Rorippa islandica*), occur here. A number of local rarities have also been recorded, including Red Goosefoot (*Chenopodium rubrum*), Common Meadow-rue (*Thalictrum flavum*) and Zigzag Clover (*Trifolium medium*). The Loughans is the only large turlough in the south-east of the country, and the highest anywhere in Ireland. It has limited physical variation but, for its size, a fairly diverse vegetation, including open water, ditches, extensive damp areas and a good transition to the high quality lime rich grassland areas.

28.01.1997

**Mothel Church, Coolcullen pNHA (Site Code 000408)**

This bat site is located in the loft of the Church of Ireland, Mothel, Coolcullen, Co. Kilkenny. A nursery colony of Natterer's bats (*Myotis nattereri*) use the loft and bell tower of the church. Over 100 bats were counted at the site in 1993 making it one of the biggest in the country. The Natterer's Bat is an uncommon bat in Ireland, only several thousand are known from throughout the island. Body measurements include forearm 36-43mm; head and body 45 mm; wingspan 270 mm; weight 5-12 g. It is distinguished from other species by the presence of a still fringe of hairs along the tail membrane, fairly long pink ears and bright white fur on its underside. Few nursery colonies are known and these are in a variety of buildings, including church and house roofs, stone barns and caves. Single bats or small numbers are found under bridges during the summer. During winter, a few Natterer's Bats have been found in underground sites. This species forages in woodlands where it catches insects in the air or off foliage or the ground. As the national population of Natterer's bats is estimated to be only several thousand, this nursery roost is of national importance and also of international importance. There are no immediate threats facing this roost. The woodland to the east of the church is probably the preferred foraging area for this colony so any changes to this could adversely affect the colony.

10.07.1995

**Rathsnagadan Wood pNHA (Site Code 000409)**

Rathsnagadan is an area of swamp woodland adjacent to the River Nore, 7 km south-east of Inistioge. Developed on the deep river muds of the River Nore in an area which is totally flooded in winter, it supports an excellent diversity of species. The wood is dominated by Willows (*Salix* spp.) and Ash (*Fraxinus excelsior*), with scattered Alder (*Alnus*

glutinosa), Hazel (*Corylus avellana*), Sycamore (*Acer pseudoplatanus*) and Crab Apple (*Malus sylvestris*). The shrub layer contains Guelder Rose (*Viburnum opulus*), Field Rose (*Rosa arvensis*) and Spindle-tree (*Euonymus europaeus*). The woodland floor is covered in decaying tree litter which supports a rich bryophyte and lichen flora. This site also contains several rare insect species. There is also an interesting and diverse ground flora rich in tall herbs such as Hemlock Water-dropwort (*Oenanthe crocata*), Hedge Bindweed (*Calystegia sepium*) and Bramble (*Rubus fruticosus* agg.). Meadowsweet (*Filipendula ulmaria*) and Valerian (*Valeriana officinalis*) are also very common. In total, 47 Vascular plants species were recorded from this site. Of these, the Nettle-leaved Bellflower (*Campanula trachelium*) is a legally protected species (Flora protection order) which is only found in Ireland along the edges of the River Nore and River Barrow. Other plant species of note include Meadow-rue (*Thalictrum flavum*) and Summer Snowflake (*Leucojum aestivum*) which are infrequent in Ireland. This site is of international importance because of the several rare and legally protected plant species which it supports. It is also a good example of undisturbed swamp woodland, a relatively rare habitat.

#### **Thomastown pNHA (Site Code 000410)**

The Thomastown Natural Heritage Area is a narrow strip of wet grassland and deciduous woodland adjacent to the River Nore. The main habitat consists of damp meadow comprising a species-rich assemblage of grasses and herbs. Amongst the grassland herbs, there are several species of interest such as the legally protected Autumn Crocus (*Colchicum autumnale*) (Flora Protection Order 1987) and Rough Hawks-beard (*Crepis biennis*). There are also areas of swamp dominated by Reedgrass (*Phalaris arundinacea*), with Yellow Flag (*Iris pseudacorus*), Water Horsetail (*Equisetum fluviatile*), Water Mint (*Mentha aquatica*), Woody Nightshade (*Solanum dulcamara*) and Great Water Dock (*Rumex hydrolapathum*). An old mill race containing a variety of aquatic plants forms the northern boundary of the site. The riverbanks are colonised by a dense, tall herb community. The river channel and the swamp hold large invertebrate populations. An area of dry, mixed deciduous woodland adjacent to the grassland on a steep slope adds to the habitat diversity of this site. The canopy consists of Ash (*Fraxinus excelsior*), Beech (*Fagus sylvestris*) and Sycamore (*Acer pseudoplatanus*) with an understorey of Hawthorn (*Crataegus monogyna*) and Hazel (*Corylus avellana*). There is a rich and varied ground flora which includes scattered plants of the Nettle-leaved Bellflower (*Campanula trachelium*), a species which is protected under the Flora Protection Order of 1987. This site is rated as of national importance because of the presence of two rare and legally protected plant species, Autumn Crocus (*Colchicum autumnale*) and Nettle-Leaved Bellflower (*Campanula trachelium*).

15.02.1995

#### **Tibberaghny Marshes pNHA (Site Code 000411)**

Tibberaghny Marshes is an extensive area of wetland lying on the northern floodplains of the River Suir, 4 km east of Carrick-on-Suir. This site is comprised of very wet and undisturbed swamp, marsh and wet pasture. The main habitat is marshland colonised by reedbeds which support Common Reed (*Phragmites australis*) and wet woodlands of Willows (*Salix* spp.). There is also a fringe of deciduous woodland along the banks of the River Suir. Tibberaghny Marshes are a regionally important wintering site for duck, mainly Mallard, Wigeon and Teal. Greylag Geese, a legally protected species, are also known to occasionally frequent this site. Parts of this site are commonly used for cattle and sheep grazing. Duck and pheasant shooting are also frequently carried out and overshooting appears to have

damaged its present value to wildlife. Drainage modifications and other agricultural activities may also be threatening the habitat diversity and water quality on this site.

#### **River Barrow Estuary pNHA (Site Code 000698)**

This site comprises the lower and upper tidal reaches of the river Barrow before it enters Waterford Harbour. It extends from St. Mullins in Co. Carlow to Cheek Point in Co. Waterford (approximately 20-25 kilometres) and includes both sides of the river. The tidal river and estuary supports populations of the protected (EU Habitats Directive 92/43/EEC) Twaite Shad (*Alosa fallax fallax*) which spawn in selected areas. At the northern and south western sections of the site the very steep valley sides are rocky and support deciduous woodland with Oak (*Quercus* sp.), Ash (*Fraxinus excelsior*) or Hazel (*Corylus avellana*) alternatively dominant. There is a healthy under storey composed of abundant Holly (*Ilex aquilinum*) and a ground layer of ferns (*Dryopteris* and *Polystichum* spp.), Bluebell (*Hyacinthoides non-scripta*), Violet (*Viola riviniana*), Wood Sorrel (*Oxalis acetosella*) and Ivy (*Hedera helix*). There is also a narrow band of wet woodland at the base of the steep slopes and along old embankments. They are Willow (*Salix* spp.) dominant with occasional Alder (*Alnus glutinosa*), Birch (*Betula* sp) and some Oak (*Quercus* sp.) - possibly on drier areas of the embankments. Along the mid and southern side of the estuary, saltmarshes and saltmeadows have developed on the sediment which has accumulated at the mouths of incoming streams and inlets. Being far from the open sea, the saline influence is somewhat restricted and rather grassy communities have developed with an abundance of Red Fescue (*Festuca rubra*), some Hard Grass (*Parapholis strigosa*), and sea sedges (*Carex distans* and *C. extensa*). Other species seen include Sea couch (*Elymus pycnanthus*), Sea Aster (*Aster tripolium*), Sea arrowgrass (*Triglochin maritima*) and Sea Club-rush (*Scirpus maritimus*). At Alderton the saltmarsh grades into freshwater swamp with some trees, mostly Willows (*Salix* spp.). Common Meadow-rue (*Thalictrum flavum*) and Water Dropwort (*Oenanthe fistulosa*) are among the more interesting species. The Rare plant species Divided Sedge (*Carex divisa*) was considered extinct in Ireland until 1990 when it was recorded from several sites along the Barrow estuary. Boreerr's Salt-marsh Grass (*Puccinellia fasciculata*), a species legally protected under the Flora Protection Order 1987, is found at several locations in this site. This tufted perennial grass of salt marshes and estuaries is restricted to southern and eastern Ireland. Another Rare and protected species, Meadow Barley (*Hordeum secalinum*), occurs at several locations on this site. The overall distribution of this species is declining due to reclamation and embankment of lands fringing estuaries. At the northern end of the site the legally protected Nettle-leaved bellflower (*Campanula trachelium*) is found in two locations. This species is confined to the river valleys of the Barrow and Nore where it is found in grassy patches below damp woodland. It is declining due to amenity pressures along river banks where it was found. The Lower River Barrow is a regionally important site for wintering wildfowl and waders resulting in the following numbers: Shelduck 39; Wigeon 64; Teal 114; Oystercatcher 127; Golden Plover 300; Lapwing 859; Dunlin 720; Curlew 296; Redshank 132 (all counts average peaks in one season 1984/85-86/87). Peregrine falcon (*Falco peregrinus*), a species listed in Annex 1 of the EU Birds Directive and in the Red Data Book as being threatened in Ireland, breeds within the site (West side). Phenomenal populations of Swallow, roost in the reed beds at Stokestown below New Ross. The saltmarshes and salt meadows are under threat from agricultural improvement. Some have been extensively improved and are excluded from the site while others, though improved, still support pockets where the rare and protected species

occur. This site is important because environmental factors have allowed plant communities to develop here that are found nowhere else in the country. Three legally protected plant species are found, and another Rare species (*Carex divisa*) has its only known Irish station here. The presence of Rare, Red Data Book fish and of Peregrine Falcon is also notable.

19.12.1995

#### **Ardaloo Fen pNHA (Site Code 000821)**

Ardaloo Fen is a wetland area beside the Nuenna River about 5km southeast of Freshford. There is a transition from improved grassland to Common reed (*Phragmites australis*) swamp encompassing a diverse wetland flora. The wetland is in a fairly natural condition and the whole site is valuable for birds: The winter flooded grassland supports wildfowl and waders. The reedbed itself is home to warblers.

#### **Brownstown Wood pNHA (Site Code 000827)**

The Brownstown Wood Natural Heritage Area is a beautiful tract of deciduous Oak woodland situated on a low hill, 7km west of New Ross in County Kilkenny. This woodland is very unusual in that the canopy consists almost exclusively of Oak (*Quercus* sp.). This type of virtually pure oak forest is very rare in Ireland. The understorey is comprised of a good mixture of Birch (*Betula* sp.), Oak seedlings, Rowan (*Sorbus aucuparia*) and Ash (*Fraxinus excelsior*) with some Holly (*Ilex aquifolium*) and Beech (*Fagus sylvatica*). Developed on acidic, brown earth-type soil, the ground flora of this woodland is comprised of a thick carpet of Bilberry (*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard fern (*Blechnum spicant*), Cow-wheat (*Melampyrum sylvaticum*) and Bracken (*Pteridium aquilinum*). This site also includes some areas of scrub where natural regeneration of Ash and Oak is occurring on previously clear felled woodland. Because intact oak woodland is such a rare habitat in Ireland, this site is of regional importance. It is also of great interest as it is one of the few sites where Oak is freely regenerating. The ample numbers of Birch, Rowan and Oak seedlings and saplings flourishing in this woodland means that it has enough young tree growth to maintain its future viability.

#### **Clohastia pNHA (Site Code 000830)**

The site is a sand pit in the valley of the Barrow where glacial meltwater laid down an extensive deposit at the close of the ice age. The material is of mixed limestone and granite origin in keeping with its location which is on the Wicklow granite south of the Carlow lowlands. The sand is white in colour, probably from the granitic minerals, but its overall chemical reaction is basic so that the vegetation is of a limestone type. The main features of the area are the various excavations, some of which are still in use. Grassland which covers the flat surfaces includes crested dogtail (*Cynosurus cristatus*) and such herbs as dog daisy (*Leucanthemum vulgare*), purging flax (*Linum catharticum*), carline thistle (*Carlina vulgaris*), centaury (*Centaureum erythraea*) and St John's wort (*Hypericum perforatum*). More disturbed sites may have 'weed' species like mullein (*Verbascum thapsus*) or hard grass (*Catapodium rigidum*) while stabilised but untrampled areas are often rich in lichens (*Peltigera*, *Cladonia* spp.) and mosses. In some of these blue fleabane (*Erigeron acer*) occurs sparingly and it is the main reason for the site being listed, being a protected species. There are a few low-lying areas which flood in winter but are usually dry in summer. These have young willows (*Salix cinerea*) which, along with gorse (*Ulex europaeus*) on the slopes, contribute a bushy appearance to the site. The bushiness is accentuated by a belt of birch and hazel woodland along the eastern side, at the edge of the Barrow floodplain. This is developing naturally but as yet

has little ground flora. It changes to alder wood at the southern end where marsh marigold (*Caltha palustris*) is a feature along with a little crow garlic (*Allium vineale*).  
15.02.1995

#### **Cullahill Mountain pNHA (Site Code 000831)**

This site lies on a western outlier of the Castlecomer plateau, 6 km north-east of Johnstown, where the underlying limestone has been exposed relatively recently by erosion of the higher shales. The rock is in the form of an escarpment with a steep side facing the central plain (and the Cork-Dublin road) and more gradual slopes to the south-east where the shale soon appears. The vegetation of most of the site comprises a herb-rich grassland over limestone, in which no one species predominates. The coexistence of about 5 grass species, 2 sedges and 20 broad-leaved herbs is one of the most interesting features of the vegetation and it allows a rich insect fauna to maintain itself. Grasses found include Quaking-grass (*Briza media*), Crested Dog's-tail (*Cynosurus cristatus*), Sheep's-fescue (*Festuca ovina*), Downy Oat-grass (*Avenula pubescens*) and Yellow Oat-grass (*Trisetum flavescens*). Amongst these grasses Mouse-ear Hawkweed (*Hieracium pilosella*), Wild Thyme (*Thymus praecox*), Bird's-foot-trefoil (*Lotus corniculatus*), Lady's Bedstraw (*Galium verum*), Carline Thistle (*Carlina vulgaris*), Mountain Everlasting (*Antennaria dioica*), Purging Flax (*Linum catharticum*) and Eyebright (*Euphrasia* sp.) grow, while a number of smaller annual species are associated with rock outcrops. The orchid flora of the grassland is notably rich, with Twayblade (*Listera ovata*), Frog Orchid (*Coeloglossum viride*), Bee Orchid (*Ophrys apifera*), Early-purple Orchid (*Orchis mascula*) and Green-winged Orchid (*Orchis morio*) occurring. Green-winged Orchid is a rare species that is legally protected under the Flora Protection Order (1987) and the site is particularly notable for the abundance of this species (some 350 individuals were recently recorded from the site). On its west side, the site extends downslope to some Ash (*Fraxinus excelsior*)/Hazel (*Corylus avellana*) woodland which is regenerating well and spreading on the hill. Some of the trees grow out of moss-covered rocks and though the ground flora is as yet fairly sparse most of the expected species occur somewhere within the wood. Woodland on limestone is quite rare in the Midlands and is distinct from adjacent Hazel stands on shale, such as at Spahill. The importance of the site lies in the presence of the large population of Green-winged Orchid in grassland referable to a type listed, with priority status, on Annex I of the EU Habitats Directive.  
05.02.1997

#### **Esker Pits pNHA (Site Code 000832)**

Esker Pits proposed Natural Heritage Area, near Gagara, County Kilkenny, is a lightly worked gravel quarry supporting a range of vegetation types, most notably areas of species-rich calcareous grassland. Of particular significance is the presence of a large population of a rare Red Data Book plant species. The site comprises a mosaic of different habitats including patches of species-rich calcareous grassland, dry gravel banks, small ponds, scrub woodland and marsh areas which are flooded in the winter. The grassland areas contain an excellent diversity of species including a substantial population of the rare, Red Data Book species, Blue Fleabane (*Erigeron acer*). Other characteristic calcareous grassland species which occur here include Ox-eye Daisy (*Leucanthemum vulgare*), Black Medick (*Medicago lupulina*), Knapweed (*Centaurea nigra*), Greater Knapweed (*Centaurea scabiosa*), Carline Thistle (*Carlina vulgaris*), Common Centaury (*Centaureum erythraea*), Wild Carrot (*Daucus carota*), Fairy Flax (*Linum catharticum*), Field Scabious (*Knautia arvensis*) and Lady's Bedstraw (*Galium verum*), amongst others. The site supports a good range of ruderal plant species of interest. 24.06.2002

#### **Grannyferry pNHA (Site Code 000833)**

The Blackwater is a small tributary of the River Suir in south Kilkenny joining the main river upstream of Waterford. Its lower reaches (5km or so) are tidal and although the river embankments are still generally intact, various sluices and valves do not always operate successfully so that there is some flooding in the valley bottoms, especially on spring tides. This site consists of reedswamp, marshes and wet fields with a salt influence which declines from south to north. At the southern end there are saltmarsh communities with Saltmarsh Rush (*Juncus gerardi*), Sea Arrowgrass (*Triglochin maritimum*), Sea Aster (*Aster tripolium*) and various sedges (*Carex distans*, *C. otrubae*). Slender Spike-rush (*Eleocharis uniglumis*), Strawberry Clover (*Trifolium fragiferum*) and Brookweed (*Samolus valerandi*) are species of interest which grow in the fresher conditions just above the saltmarsh. There is also a little Meadow Barley (*Hordeum secalinum*) which is now a protected species because of its marked decline this century, caused by drainage and grassland improvement. Upstream, the vegetation changes into beds of Pond Sedge (*Carex acutiformis*), Hard Rush (*Juncus inflexus*) and Yellow Flag (*Iris pseudacorus*) along the railway line, though the persistence of Sea Club-rush (*Scirpus maritimus*) reminds one of the proximity of the sea. On the eastern side Common Reed (*Phragmites australis*) occurs in abundance with Marsh-marigold (*Caltha palustris*) and some sedges. There has been some reclamation here and the vegetation has been extensively modified from its natural condition. Small numbers of Mallard and Water Rail occur within the area and in summer there are, most probably, Sedge Warbler and Reed Bunting nesting.  
25.03.1994

#### **Inistioge pNHA (Site Code 000837)**

Inistioge is proposed for designation as a Natural Heritage Area (NHA) on the basis of its population of Meadow Saffron (*Colchicum autumnale*). The site consists of a narrow flood plain on the western side of the Nore River above Inistioge village about 6 km south-east of Thomastown. Meadow Saffron is protected under the Flora Protection Order (1987). It is a species of damp grassland. The Nore valley was the main centre of the distribution of this species in Ireland, but as a result of drainage, Meadow Saffron has declined dramatically in Ireland and Inistioge is one of its last remaining locations. The species was confirmed on this site in 1990.

#### **Kilkeasy Bog pNHA (Site Code 000839)**

Kilkeasy Bog is a large and varied wetland area located 6km south of Knocktopher in the flat lying farmland of south County Kilkenny. This site encompasses a wide range of habitats, many of which are uncommon in this area. It consists of small lakes, floating fen, wet grassland, cutover bog and heathland which support a great diversity of flora and fauna. Some of the species found here are not generally found in the surrounding area. Unfortunately, some of the original area of interest has been lost due to recent drainage and afforestation but this site is still of local ecological importance.  
15.02.1995

#### **Kylecorragh Woods pNHA (Site Code 000842)**

Situated on the steeply sloping banks of the River Nore, 5km west of New Ross, County Kilkenny, the Kylecorragh Woods form a prominent feature in the landscape. This proposed Natural Heritage Area is an excellent example of a relatively undisturbed, relict Oak woodland and is of great ecological interest. Apart from some damage from clear felling at the east of the site, this woodland has retained much of its natural character and contains a good diversity of species. The woods are quite damp and there is a rich and varied

ground flora. The species assemblages show interesting variations according to changes in slope, soil moisture content and density of the canopy which controls the amount of light penetrating the woodland. Where the high canopy of Oak (*Quercus* spp.) is very dense, the understorey is comprised mainly of Holly (*Ilex aquifolium*). In areas where there is greater light intensity, there is a greater diversity of tree and shrub species in the understorey including Holly, Hazel (*Corylus avellana*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*). The riverbanks of the River Nore are primarily colonised by Willows (*Salix* spp.). The wood also provides a safe haven for badgers, foxes, jays, ravens, sparrowhawks and other wildlife in the region. This type of woodland, with a high canopy composed almost entirely of Oak (*Quercus* spp.) is very rare in Ireland and is therefore of great scientific interest. Ecologically, it is also important because it is one of the few remaining examples of this habitat in the country. This site is therefore considered to be of regional importance.

#### **Mount Juliet pNHA (Site Code 000843)**

This site is located approximately 4 km north-west of Thomastown in the valley of the River Nore near the junction of this river and the Kings River. It comprises an area of damp meadow grassland and woodland situated in the flood plain of the River Nore and is of conservation significance for the presence of Meadow Saffron (*Colchicum autumnale*), a rare plant species that is listed in the Red Data Book and protected under the Flora Protection Order (1987). This species has its Irish headquarters in the River Nore valley.  
08.05.1997

#### **Murphy's of the River (Site Code 000844)**

Semi-natural woodland covers parts of the valley side south of Woodstock (Inistioge) and is well developed at Brownsford where the Nore takes several sharp bends in its passage through the Ordovician sandstones and slates at the extremity of the Leinster granite. The site consists of this valley side where rock is exposed in places, the floodplain that lies below and a small willow wood at the edge of the (tidal) channel. The valley side is steep (50 degrees or so) and covered by Oak, Holly, Hazel and Birch (*Betula pubescens*) with some Beech and Ash. All the trees are regenerating thorough a cover of Bramble (*Rubus fruticosus*), Foxglove (*Digitalis purpurea*), Woodrush (*Luzula sylvatica*) and Buckler Fern (*Dryopteris dilatata*). There are mossy patches everywhere, mostly of *Mnium hornum*, while lichens (including *Stictia* sp) are prominent on the trees. Wall Pennywort (*Umbilicaria rupestris*) and a little Filmy Fern (*Hymenophyllum tunbrigense*) grow on some of the rocks. At the base of the slope the woodland changes to a nutritionally richer type in which Ash is important. The herb species here include Enchanter's Nightshade (*Circaea lutetiana*), Yellow Pimpernel (*Lysimachia nemorum*) and Wood Speedwell (*Veronica montana*) and there are many ferns (*Polystichum setiferum*, *Dryopteris affinis* and *Phyllitis scolopendrium*). Wood sedges (*Carex sylvatica*, *C. strigosa*) also occur, the latter just above the flood zone. There is a gradual transition of species to the riverbank wood where Grey and Almond-leaved Willows (*Salix cinerea*, *S. triandra*) are dominant with a little Guelder Rose (*Viburnum opulus*). The Almond-leaved Willows form a canopy about 5m high which sprouts from horizontal 15m trunks lying on the mud. The site is unusual because there is no embankment on the river side and the wood is open to a completely natural pattern of flooding. An abundance of the naturalised Himalayan Balsam (*Impatiens glandulifera*) covers the ground with some Hemlock Water Dropwort (*Oenanthe crocata*), Marsh Ragwort (*Senecio aquaticus*), Wood Cress (*Cardamine flexuosa*) and Yellow Flag (*Iris pseudacorus*). The rare and protected (Flora Protection Order, 1987)

Nettle-leaved Bellflower (\**Campanula trachelium*) occurs sparingly, as it does in a few other floodplain woods in this valley. Upstream from the willow wood the floodplain has been enclosed by an embankment but the resultant field is little grazed and has been colonised by Yellow Flag, sedges (*Carex hirta*, *C. acutiformis*), Marsh Woundwort (*Stachys palustris*), Nettle (*Urtica dioica*), Greater Bridesfoot Trefoil (*Lotus uliginosus*) and Sorrel (*Rumex acetosa*) through a mat of Creeping Bent (*Agrostis stolonifera*) and Creeping Buttercup (*Ranunculus repens*). The site is included because of the occurrence of semi-natural oakwood which is most unusual in Kilkenny, and for the Bellflower, a specialty of the Nore valley. A number of plants that occur are rare in the region and are marked above with an \*asterisk.  
15.02.1995

#### **Newpark Marsh pNHA (Site Code 000845)**

A small marsh on the outskirts of Kilkenny Town, although the water level seems to be falling at the moment, it still supports a semi-natural fen vegetation dominated by the large sedge (*Carex elata*) and including the notable Large Water Dock (*Rumex hydrolapalcum*) amongst a suite of more typical species. The area is used as a feeding site by three protected bat species. Leisler's Bats (*Nyctalus leisleri*), Long-eared Bat (*Plecotus ausitus*) and the Pipistrelle (*Pipistrellus pipistrellus*). The naturalness of this site in a location so close to an urban population is unusual and increases the importance of this site.  
15.02.1995

#### **Red Bog, Dungarvan pNHA (Site Code 000846)**

The Red Bog Natural Heritage Area, located 2km north of Dungarvan in County Kilkenny, is an interesting wetland area surrounded by wet grassland and scrub. Afforestation has reduced the size of this site considerably and it is now bounded on the east and west sides by conifer plantations. The main habitat is floating fen comprised of emergent vegetation with several small areas of open water. The vegetation is dominated by Bulrush (*Typha latifolia*) and Saw Sedge (*Cladium mariscus*), a plant which is much more common in the west of Ireland. The flora is of local interest and the site supports several species of waterfowl in the winter.  
15.02.1995

#### **Spa Hill and Clomtanagh Hill pNHA (Site Code 000849)**

Spahill and the adjacent hills form part of an escarpment which links the Slieve Ardagh Hills with the Castlecomer Plateau. The hills are of limestone overlain by shales and/or sandstones so the surface geology is variable, with each rock type maintaining a very different type of vegetation. This particular site is mostly limestone, exposed as small ledges or as flat sheets when it is weathered into the pavement pattern so well known from the Burren. The hills are low and rounded. They rise relatively steeply from the Central Plain and drop south-eastwards more gently. Their surface is grassy in appearance but the soil is shallow especially on the upper parts and the rock breaks through frequently. The vegetation is dominated by Crested Dog's-tail (*Cynosurus cristatus*), Perennial Rye-grass (*Lolium perenne*) and Creeping Bent (*Agrostis stolonifera*), with Smooth Meadow-grass (*Poa pratensis*) and Yellow Oat-grass (*Trisetum flavescens*) occurring near outcrops. The community is species-rich with such plants as Wild Thyme (*Thymus praecox*), Mouse-ear Hawkweed (*Hieracium pilosella*), Quaking Grass (*Briza media*), Burnet Saxifrage (*Pimpinella minor*) and sedges (*Carex caryophylla* and *C. flacca*) scattered through it. Locally there is much Eyebright (*Euphrasia* sp.), Purging Flax (*Linum catharticum*) and Oxeye Daisy (*Leucanthemum vulgare*). The Rare and legally protected (Flora Protection Order, 1987), Green-winged

Orchid (*Orchis morio*) grows sparingly through this community. Two other orchid species, Frog Orchid (*Coeloglossum viride*) and Common Spotted-orchid (*Dactylorhiza cf. fuchsii*) are also recorded from the site. A few larger cliffs occur on the south side of Clomantagh where Polypody (*Polypodium australe*) is common, along with Hairy Rock-cress (*Arabis hirsuta*). A rather different heathy grassland is found on particularly thin soils on the eastern slope of Spahill. Here Devil's-bit Scabious (*Succisa pratensis*) turns the ground purple in summer, growing with Slender St. John's-wort (*Hypericum pulchrum*), Bitter-vetch (*Lathyrus montanus*), Yellow-rattle (*Rhinanthus minor*) and a little Heather (*Calluna vulgaris*). The ground in Clomantagh is largely similar to Spahill except that near the top there are outliers of the overlying sandstone which appear as low, lumpy rocks quite different in shape to the limestone. The difference is accentuated by the vegetation which includes more Heather as well as Heath Bedstraw (*Galium saxatile*), Bilberry (*Vaccinium myrtillus*), Purple Moor-grass (*Molinia caerulea*), Wavy Hair-grass (*Deschampsia flexuosa*), Tufted Hair-grass (*D. cespitosa*) and the mosses *Polytrichum juniperinum*, *Plagiothecium undulatum* and *Dicranum scoparium*. The final habitat in this diverse site is a woodland on the north-western slope. The trees are Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) and there is a good range of herb species on the ground. Wood-rushes (*Luzula sylvestris* and *L. pilosa*) are frequent, with Wood-sorrel (*Oxalis acetosella*), Greater Stitchwort (*Stellaria holostea*) and ferns (*Dryopteris dilatata* and *D. affinis*) also found. In seepage areas Golden Saxifrage (*Chrysosplenium oppositifolium*), Bugle (*Ajuga reptans*) and Remote Sedge (*Carex remota*) are characteristic and there is a little Water Avens (*Geum rivale*), Woodruff (*Galium odoratum*) and Tufted Hair-grass at the base of the slope. All in all, the site contains a variety of natural grassland communities that are rare in Ireland because of agricultural intensification. Taken with Cullahill Mountain to the north-east it forms a unit of high ecological interest. The presence of a population of Green-winged Orchid in grassland referable to a type listed, with priority status, on Annex I of the EU Habitats Directive is notable.  
05.02.1997

#### **Whitehall Quarries pNHA (Site Code 000855)**

Two disused shale/slate quarries 5km west of Bagnelstown. The quarry tips and the floors of the old working areas now provide a rich variety of dry acidic habitats, the substrate varying in stability and particle size etc. These have been colonised to a greater or lesser extent by a variety of plants typical of such dry habitats such as Bilberry (*Vaccinium myrtillus*). Although degraded by recent management, the vegetation has the potential to recover. The flora of this area presents a sharp contrast to the flora of the surrounding region and as such is of ecological interest. Raptors nest in the quarry cliffs.

#### **Galmoy Fen pNHA (Site Code 001858)**

Galmoy Fen is situated 7 km north of Johnstown in Co. Kilkenny, close to the boundary with Co. Laois. It comprises a cutover raised bog that has become flooded with base-rich groundwater and that now supports alkaline fen vegetation. It lies in a depression and is underlain by Carboniferous limestone. This site is a candidate SAC selected for alkaline fen, a habitat listed on Annex I of the E.U. Habitats Directive. The central part of the site comprises an area of cutover raised bog with numerous peat-cuttings, resulting in a mosaic of dry peat banks and wet peaty pools. The peat banks support typical bog species, e.g. Ling Heather (*Calluna vulgaris*), Gorse (*Ulex europaeus*) and Purple Moor-grass (*Molinia caerulea*), while the pools, which have become flooded with base-rich groundwater, support alkaline fen vegetation with such species as Black Bog-rush

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(*Schoenus nigricans*), Great Fen-sedge (*Cladium mariscus*) and Bog Mosses (*Sphagnum* spp.), amongst others. A large area of alkaline fen vegetation surrounds the central part of the site; this area has a number of large pools that support calcicole species. Other habitats present on the site include Gorse scrub, wet grassland, improved grassland, dry calcareous grassland with such species as Fairy Flax (*Linum catharticum*), Wild Thyme (*Thymus praecox*) and Mountain Everlasting (*Antennaria dioica*), and a small area planted with Sitka Spruce (*Picea sitchensis*). A stream brings water

to the site on its north-east side. The site supports a rich assemblage of invertebrates associated with fen and bog habitats. Irish Hare and Common Frog, both Red Data Book species, also occur. Parts of the site are grazed by cattle and the whole area is used for shooting. Galmoy Fen is of considerable conservation significance as it comprises a good quality example of alkaline fen, a habitat that is listed on Annex I of the E.U. Habitats Directive.  
18.06.2003