

# ENVIRONMENTAL REPORT

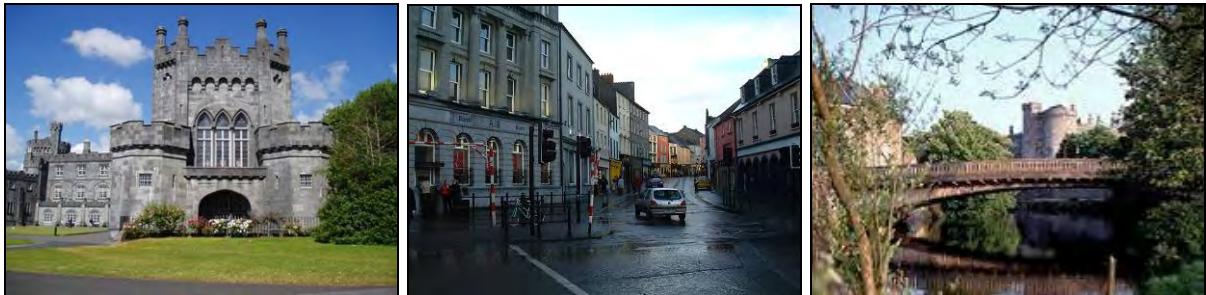
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ON THE

## STRATEGIC ENVIRONMENTAL ASSESSMENT

OF THE

## KILKENNY CITY AND ENVIRONS DEVELOPMENT PLAN 2008-2014



**For: Kilkenny Borough Council & Kilkenny County Council**

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## Table of Contents

<b>List of Figures .....</b>	<b>iii</b>
<b>List of Tables .....</b>	<b>iii</b>
<b>Section 1 SEA Introduction and Background .....</b>	<b>1</b>
1.1 Introduction and Terms of Reference .....	1
1.2 SEA Definition .....	1
1.3 Legislative Context.....	1
1.4 Implications for the Councils and the Elected Members .....	1
<b>Section 2 SEA Methodology.....</b>	<b>2</b>
2.1 Introduction .....	2
2.2 Screening.....	2
2.3 Scoping .....	2
2.4 Environmental Baseline Data and Other Strategic Actions.....	2
2.5 Alternatives.....	2
2.6 The SEA Environmental Report .....	3
2.7 The SEA Statement.....	3
2.8 Legislative Conformance.....	3
2.9 Difficulties Encountered.....	3
<b>Section 3 Baseline Environment Description .....</b>	<b>5</b>
3.1 Introduction .....	5
3.2 Biodiversity and Flora and Fauna.....	5
3.3 Population and Human Health.....	10
3.4 Soil.....	14
3.5 Water .....	15
3.6 Air and Climatic Factors.....	20
3.7 Material Assets .....	21
3.8 Cultural Heritage .....	25
3.9 Landscape .....	29
<b>Section 4 Strategic Environmental Objectives.....</b>	<b>32</b>
4.1 Introduction .....	32
4.2 Biodiversity, Flora and Fauna.....	32
4.3 Population and Human Health.....	34
4.4 Soil.....	34
4.5 Water .....	35
4.6 Air and Climatic Factors.....	36
4.7 Material Assets .....	36
4.8 Cultural Heritage .....	37
4.9 Landscape .....	38
<b>Section 5 A City and Environs Development Plan for Kilkenny .....</b>	<b>40</b>
5.1 The Plan .....	40
5.2 Relevant Forward Planning Strategic Actions .....	41
<b>Section 6 Description of Alternative Plan Scenarios.....</b>	<b>43</b>
6.1 Introduction .....	43
6.2 Identification and Description of Alternative Scenarios .....	43

<b>Section 7</b>	<b>Evaluation of Alternative Plan Scenarios</b>	<b>48</b>
7.1	Introduction	48
7.2	Methodology	48
7.3	Evaluation against Existing Environmental Baseline Description and Mapping	50
7.4	Evaluation against SEOs	52
7.5	The Preferred Alternative	52
<b>Section 8</b>	<b>Evaluation of Plan Measures</b>	<b>53</b>
8.1	Methodology	53
8.2	Strategic Context	53
8.3	Housing and Community Facilities	55
8.4	Economic Development	57
8.5	Recreation, Tourism and the Arts	58
8.6	Heritage	61
8.7	Infrastructure and Environment	68
8.8	Location and Pattern of Development	73
8.9	Guidelines for New Development	74
<b>Section 9</b>	<b>Mitigation Measures</b>	<b>76</b>
9.1	Introduction	76
9.2	Kilkenny <i>County</i> Development Plan Spatial Strategy (SS)	76
9.3	Subsidiary Plans (SP)	76
9.4	Mitigation Measures for Specific Environmental Topics	76
<b>Section 10</b>	<b>Monitoring</b>	<b>79</b>
10.1	Introduction	79
10.2	Indicators and Targets	79
10.3	Sources	79
10.4	Excluded Indicators and Targets	79
10.5	Reporting	79
10.6	Responsibility	80
10.7	Thresholds	80
<b>Appendix I</b>	<b>Site Synopses</b>	<b>84</b>
<b>Appendix II</b>	<b>Non Technical Summary</b>	<b>Separately Bound</b>

## List of Figures

Figure 3.1 River Nore.....	7
Figure 3.2 Designated Ecological Sites.....	8
Figure 3.3 Population Distribution .....	12
Figure 3.4 Population Change 2002 to 2006.....	13
Figure 3.5 SERBD River Catchment Risk Assessment .....	17
Figure 3.6 Ground Waters Vulnerability Rating .....	18
Figure 3.7 SERBD Ground Waters Risk Assessment .....	19
Figure 3.8 Transport Infrastructure .....	23
Figure 3.9 IPPC Licensed Facilities .....	24
Figure 3.10 National Monuments and Areas .....	27
Figure 3.11 National Inventory of Architectural Heritage .....	28
Figure 3.12 Views and Prospects .....	31
Figure 6.1 The Existing CEDP Development Envelope .....	45
Figure 6.2 Scenario 1 <i>Compact Development</i> .....	45
Figure 6.3 Scenario 2 <i>Semi Compact Development</i> .....	46
Figure 6.4 Scenario 3 <i>Dispersed Development</i> .....	47

## List of Tables

Table 2.1 Checklist of Information included in this Environmental Report .....	4
Table 3.1 Trees and Woodlands worthy of Preservation .....	9
Table 3.2 IPPC Licensed Facilities .....	22
Table 7.1 Criteria for appraising the effect of Plan provisions on Strategic Environmental Objectives.....	49
Table 7.2 Strategic Environmental Objectives (SEOs).....	49
Table 7.3 Evaluation of Alternative Scenarios against SEOs .....	52
Table 10.1 Selected Indicators, Targets and Monitoring Sources.....	83

# Section 1 SEA Introduction and Background

## 1.1 Introduction and Terms of Reference

This is the Environmental Report of the Kilkenny City and Environs Development Plan (CEDP) 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 Kilkenny City and Environs.

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 City and Environs. This report should be read in conjunction with the Kilkenny City and Environs 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 Kilkenny City and Environs and where it occurs will be significantly determined by the implementation of a City and Environs 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 the City and Environs - 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 the Councils and the Elected Members

As a result of the above legislation, certain plans and programmes which are prepared for Kilkenny Borough Council / Kilkenny County Council - including City Development Plans - are required to undergo SEA. The findings of SEA are expressed in an Environmental Report which is submitted to the Elected Members alongside the CEDP. 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 this report.

## Section 2 SEA Methodology

### 2.1 Introduction

This section details how the SEA for the CEDP 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 and Borough Councils.

### 2.2 Screening

Screening, or evaluation of the need for SEA to be carried out, was not required for the CEDP as SEA is mandatory under the SEA Regulations for the preparation or review of Development Plans where the population of the area of a planning authority is 10,000 persons or more.

### 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 Kilkenny City and Environs 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. Information is provided on existing environmental problems which are relevant to the CEDP, thus, helping to ensure that the CEDP does not make any existing environmental problems in Kilkenny City and Environs 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 CEDP 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 CEDP 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 Kilkenny City and Environs, 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 CEDP, alternatives were formulated through consultation with the plan-making team and a number of departments at the Councils.

## 2.6 The SEA Environmental Report

In this Environmental Report, which accompanies the CEDP, the likely environmental effects of the CEDP 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, 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 City. Mitigation measures to prevent or reduce significant adverse effects posed by the CEDP, 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 CEDP which includes policies and objectives which were not originally included in the Draft CEDP.

## 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 integrated into the CEDP - 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 CEDP in the light of the other alternatives, identifying the other alternatives considered,

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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.

commenting on their potential effects and explaining why the CEDP 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 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 Baseline Environment Description

### 3.1 Introduction

Kilkenny City and Environs' environmental baseline is described in this section. This baseline together with the Strategic Environmental Objectives, which are outlined in 0, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the CEDP 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 CEDP.

### 3.2 Biodiversity and Flora and Fauna

#### 3.2.1 Terrestrial Biodiversity and Flora & Fauna

All habitats within the City and its environs have been impacted upon heavily by human beings over time. Around Kilkenny City, tillage is concentrated on the fertile central plain of the River Nore. The banks of the Rivers Nore and Bregagh River play an important role in connecting areas of biodiversity within and outside the City with each other and with nearby designated sites. The functioning of the rivers and their banks as corridors allowing wildlife movement helps to prevent islands of habitat within the City from becoming isolated entities. These corridors are particularly important for mammals, bats in particular, and for small birds.

There are a number of trees and woodlands which are worthy of preservation within the City. Mature trees are concentrated mainly in Kilkenny Castle Park and in the grounds of Kilkenny College (formerly Celbridge House) on the Castlecomer Road (mature trees are found

in most of the sites listed in Table 3.1 and are not restricted to the two examples above).

Historic graveyards in the city including St. Canices Cathedral, St. Mauls, St. Johns (Col and RC) and St. Mary's (Col) are important green spaces and have a local ecological interest.

Hedgerows are an important habitat in the environs of Kilkenny city, and provide a significant potential wildlife corridor.

#### 3.2.2 Aquatic Biodiversity and Flora and Fauna

Aquatic flora and fauna within the City and its environs is found along and within the River Nore, its tributaries the Bregagh and Brownstown Rivers and Lough Macask.

The Nore River is of particular conservation interest due to factors including the presence of eleven species of animals that are protected under Annex II of the Habitats Directive<sup>3</sup>, some of which, for example Atlantic Salmon, occur in Kilkenny City.

In addition to being designated SAC and pNHA, 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*). Figure 3.1 clearly shows the course which the Nore takes through Kilkenny City and its Environs.

The channels of the River Nore have been highly modified within the City, most recently with the development of flood protection works. This modification has impacted significantly on aquatic flora and fauna.

Water quality is monitored on the Nore, Bregagh and Brownstown Rivers by the EPA (see Section 3.5).

<sup>3</sup> As transposed into Irish Law through S.I. No. 94 of 1997' European Communities (Natural Habitats) Regulations, 1997

### 3.2.3 Special Areas of Conservation

SACs are areas of conservation value for habitats and/or species of importance in the European Union, the designation and protection of which are internationally mandated under the Habitats Directive<sup>4</sup>.

The only SAC to be found within Kilkenny City and its Environs is the River Barrow and River Nore SAC (Site Code 002162). This SAC - which is also designated pNHA - consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains. The site is a candidate SAC selected for alluvial wet woodlands and petrifying streams, priority habitats on Annex I of the EU 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 Habitats Directive. The site is 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 plany Kilkenny Fern.

The SAC designation includes most of the riverbanks of the Nore as well as parts of the river banks of its tributary, the Brownstown. The area of the Nore's banks which are included in the SAC is reduced along the City Centre stretches. Figure 3.2 shows the extent of the SAC within the City and Environs area.

Site Synopses for both the SAC and the pNHAs identified below are in Appendix I.

### 3.2.4 Natural Heritage Areas

Natural Heritage Areas (NHAs) are areas of conservation value for ecological and/or geological/geomorphological heritage in Ireland the designation and protection of which are nationally mandated under the Wildlife (Amendment) Act 2000.

There are five proposed NHAs located within Kilkenny City and its environs: Dunmore Complex (Site Code 001859) in the northern environs of the City, Newpark Marsh (Site Code 045) in the north east of the city, Archersgrove (Site Code 002051) in the south eastern environs; Lough Macask (Site Code 001914) in the eastern environs, and; the River Barrow and River Nore (Site Code 002162)

The spread of pNHAs within the City and Environs is shown alongside the SAC on Figure 3.2.

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

The water bodies and banks of the River Nore and its tributaries together with various areas of open space and agricultural lands all play important parts in the City and Environs' ecological networks facilitating linkages both between and within the designated ecological sites and the non-designated surrounding urban and countryside areas.

<sup>4</sup> Directive 92/43/EEC as enacted into Irish law by the European Communities (Natural Habitats) Regulations 1997, SI 94/1997, which have been amended twice by SI 233/1998 and SI 378/2005

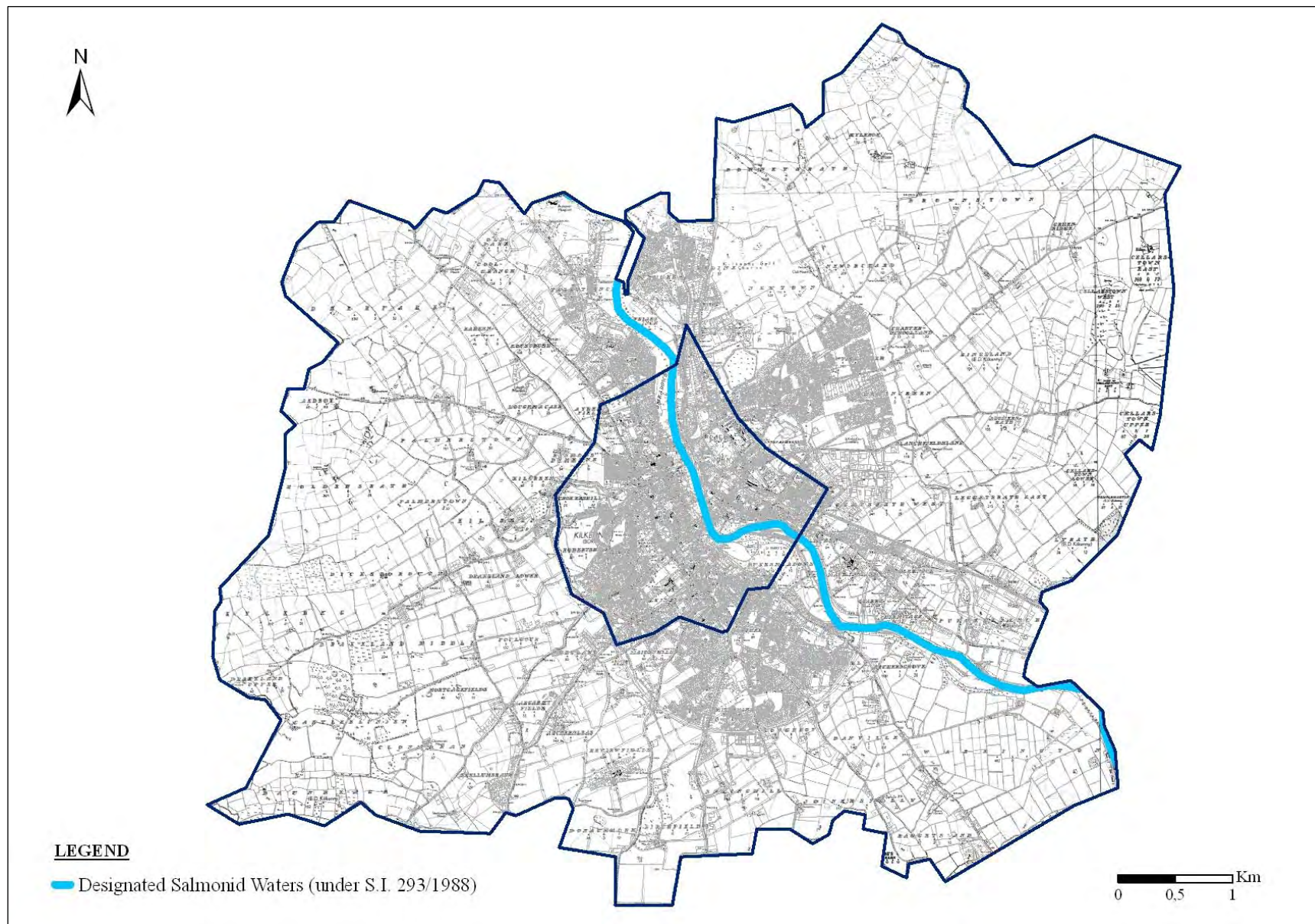
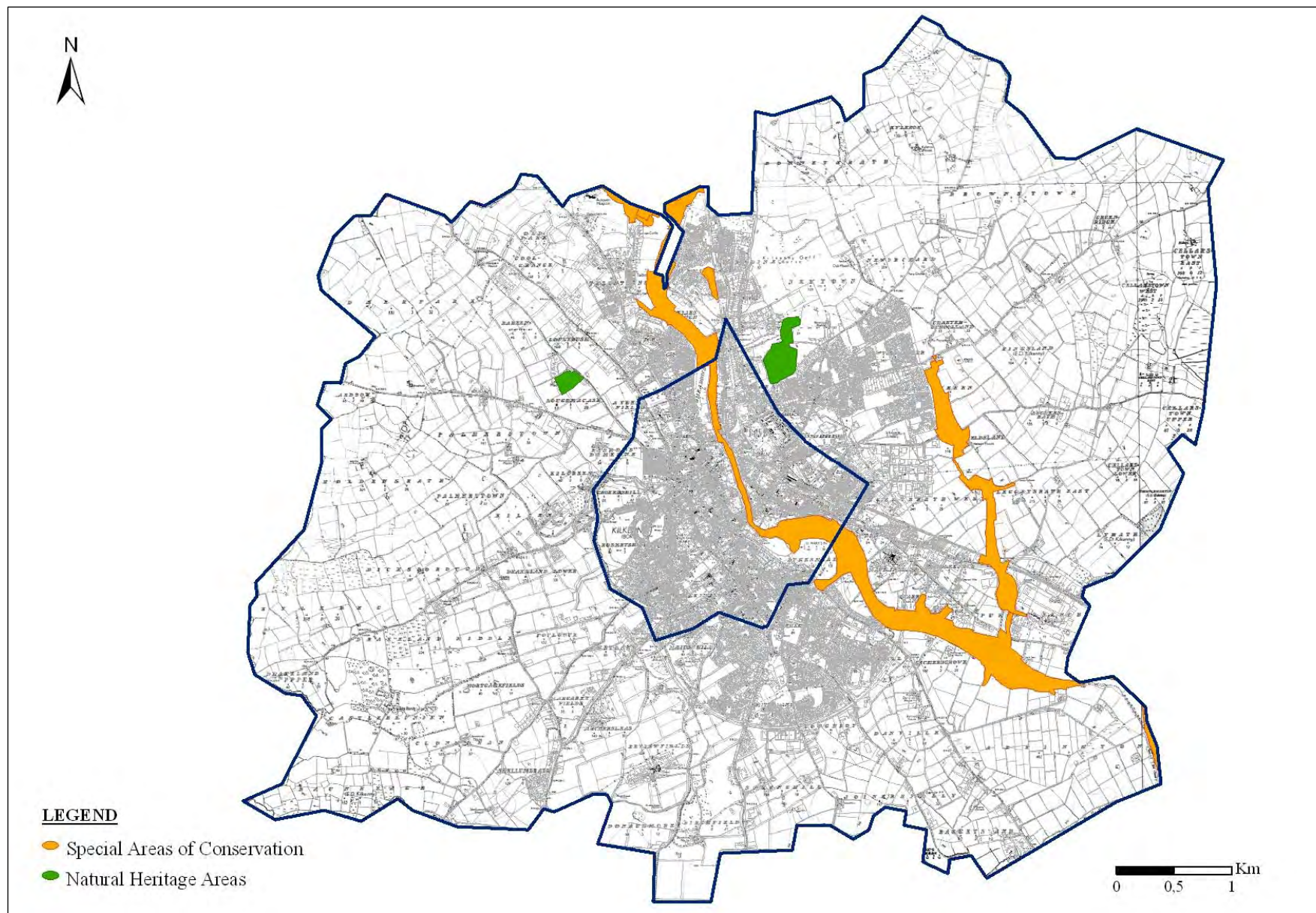


Figure 3.1 River Nore





**Figure 3.2 Designated Ecological Sites**

<b>Address</b>	<b>Address</b>
Lacken House, Dublin Road	Switzers Asylum, Bennettsbridge Road
St Hilda's, Dublin Road	Archersfield, College Road
Garnacreene, Dublin Road	Hotel Kilkenny, Callan Road
St Johns Church, Dublin Road	The Graveyard and Closh, Walkin Street
Cemetery, Dublin Road	Black Abbey, Abbey Street
Greensbridge St, Greensbridge Street - Riverside	Ayrfield House, Granges Road
St Mauls graveyard, Castlecomer Road	Loreto Schools, Freshford Road
Celbridge House, Castlecomer Road	Bishops Palace, Vicar Street
Newpark Hotel, Castlecomer Road	The Deanery, Coach Road
Newpark Lawn, Castlecomer Road	Canal Walk, Nore Valley
Kilkenny College, John Street	Lacken Walk, Nore Valley
St Johns Priory, John Street	Kilkenny Castle Parklands, Castle Road
Castlecomer Rd., from New Rd. to Ballybought St. - (Lime Ave.)	

**Table 3.1 Trees and Woodlands worthy of Preservation**

### 3.2.6 Existing Problems

Generally development in Kilkenny City and its Environs is not significantly impacting upon designated ecological sites however it is noted that the modification of the channels of the River Nore within the City, most recently with the development of flood protection works, has impacted significantly on aquatic flora and fauna.

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 as well as by developments which have resulted in the removal of hedgerows or loss of river banks.

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 City are 'at risk' or 'probably at risk' with regard to meeting legislative water quality objectives under the Water Framework Directive.

### 3.2.7 Evolution of Biodiversity and Flora and Fauna in the absence of a CEDP

In the absence of a CEDP, 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. Without the provision of zoned lands, development would be more likely to spread further beyond the existing environment thus resulting in greenfield development and the associated impacts upon biodiversity and flora and fauna.

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 the Nore or its tributaries could result in a reduction in ecological connectivity within and between these and other habitats.

Pollution of the City and Environs' water bodies as a result of any future development along or adjacent to their 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.

## 3.3 Population and Human Health

### 3.3.1 Population

Kilkenny City is the dominant urban centre in County Kilkenny which still has a relatively rural population structure. The Kilkenny City and Environs Area to which the Development Plan will relate is divided into three districts:

- Kilkenny No. 1 Urban which comprises the eastern half of the City
- Kilkenny No. 2 Urban which comprises the western half of the City, and;
- Kilkenny Rural which includes the Environs and surrounding rural areas.

Preliminary analysis of the 2006 Census Data shows that in the period 2002 to 2006 overall population in Kilkenny City and the Environs has increased by 8.3% from 22,133 to 23,967 persons. Most of this growth has occurred in the outer 'rural' area;

- Kilkenny No. 1 Urban which experienced an increase in population of 6.3% between 2002 and 2006 from 4,857 to 5,161 persons.

- Kilkenny No. 2 Urban has experienced an decrease in population of 7.2% between 2002 and 2006 from 3,734 to 3,464 persons, and;
- Kilkenny Rural which experienced an increase in population of 13.3% between 2002 and 2006 from 13,542 to 15,342 persons.

The overall growth of 8.3% is in line with that for the County which experienced a population increase of 8.8% in the same four years from a population of 80,339 in 2002 to a population of 87,394 in 2006. The three districts at Kilkenny City and its Environs comprise 27.42% of the County's total population, making this area the most dominant urban centre in the County.

### 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

As noted in Section 3.6 below, in 2005 Air Quality Assessment for the City showed that levels of PM<sub>10</sub> (particulate matter) exceeded the upper assessment threshold - a probable result of high traffic levels.

The population of the City and Environs has increased considerably in recent years and is set to increase further over the coming years. 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.

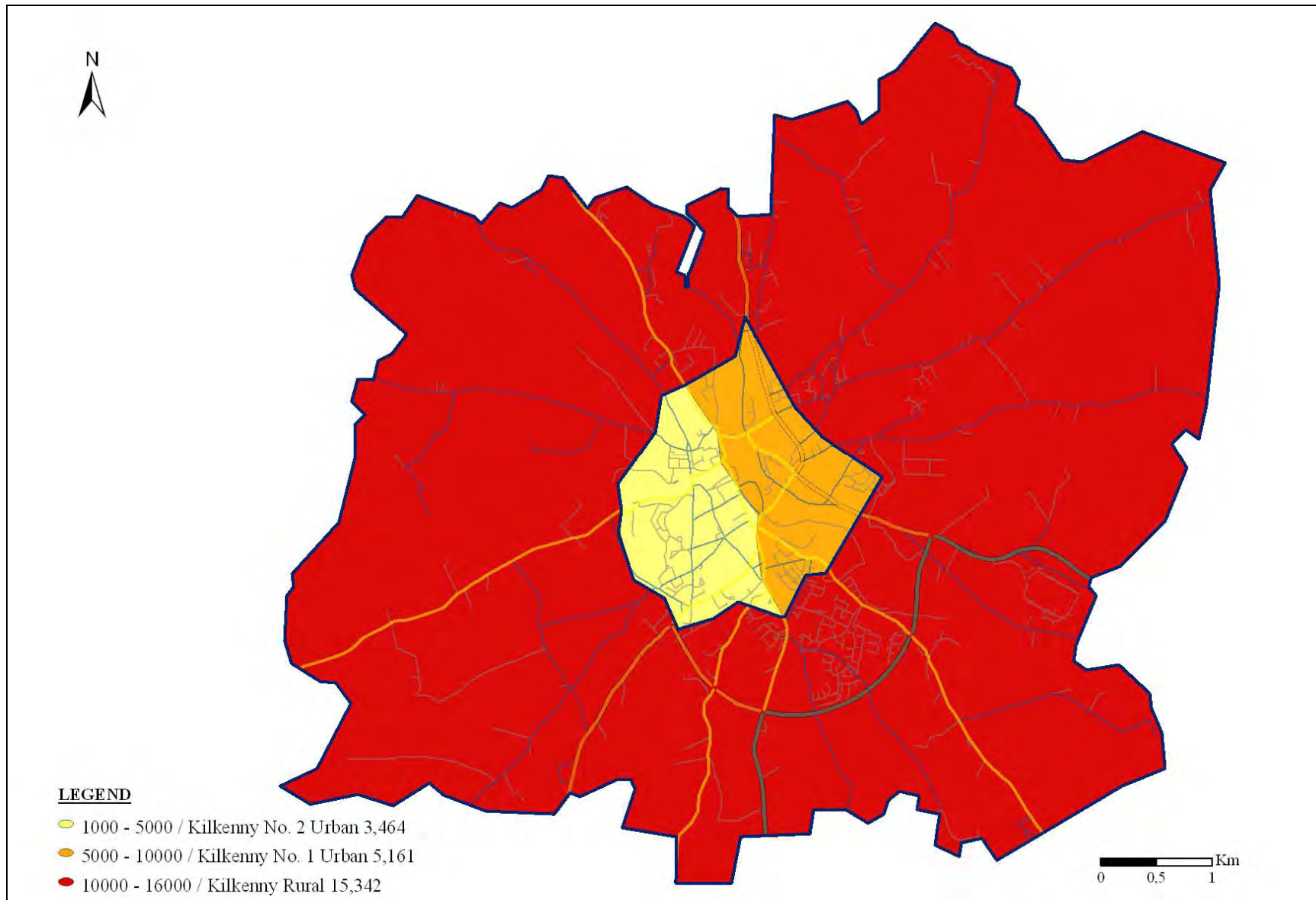
### 3.3.4 Evolution of Population and Human Health in the Absence of a CEDP

Current population projections for Kilkenny City and Environs estimate that the population is set to increase between 5,778 (25.7%) and 8,222 (34.3%) by 20205. In the absence of a CEDP for the City and Environs there would be no framework for directing this growth away from the most sensitive environments and consequently adverse environmental impacts would be more likely.

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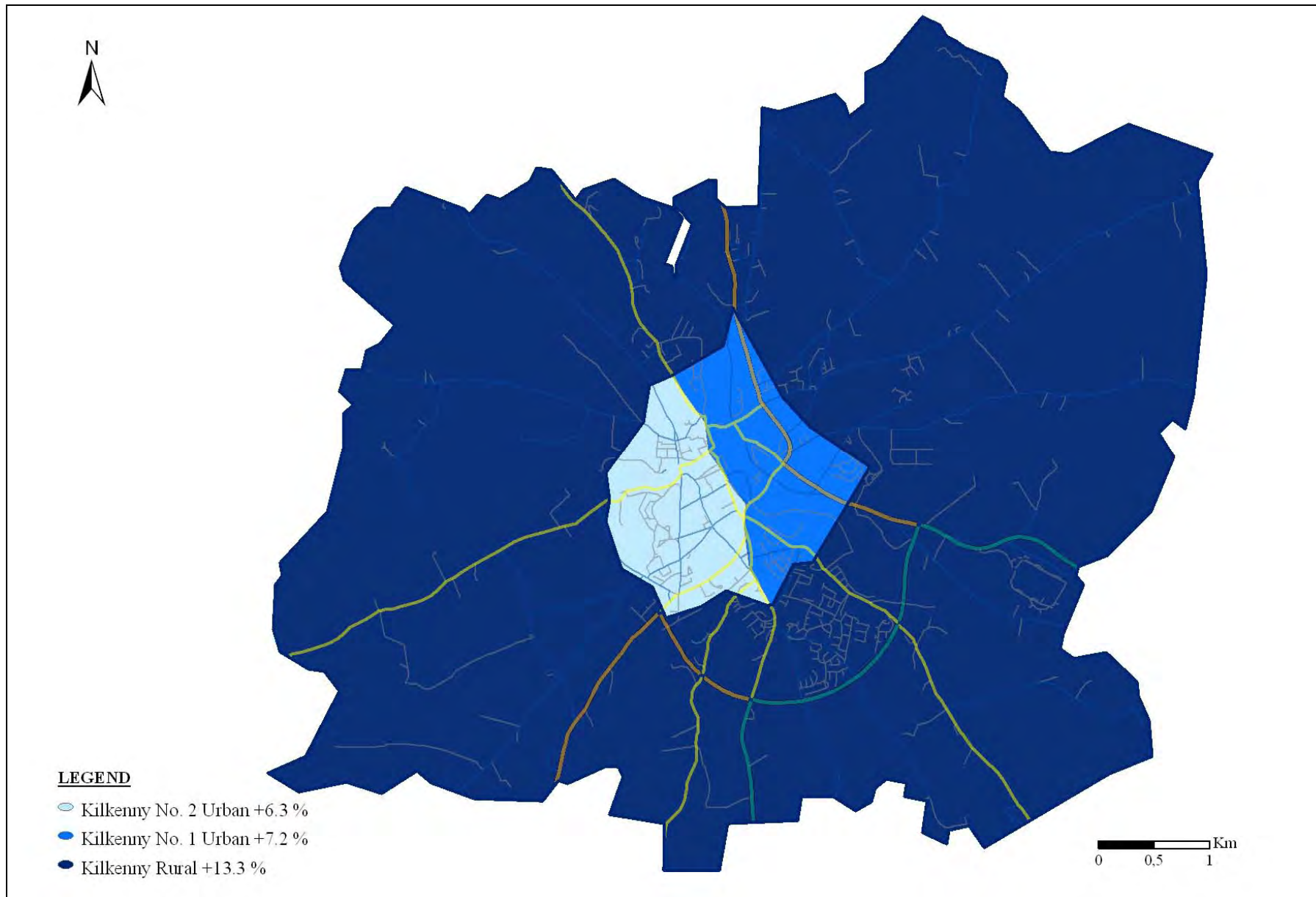
<sup>5</sup> See Kilkenny Population Study and Housing Strategy prepared by Colin Buchanan.





**Figure 3.3 Population Distribution**





**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.

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 Type

Soils in and around Kilkenny City Environs <sup>6</sup> (An Foras Talúntais, 1977) are grey brown podzolic soils which are of a 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 wider region and occur extensively over the County. They are deep, well drained soils derived from calcareous drift composed mainly of limestone with some coal shales and sandstone. These soils are fertile and all-purpose soils, excellent for grassland and also for the production of a wide range of vegetable crops.

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

The grey brown podzolic soils in and around the Environs support tillage as well as the terrestrial biodiversity outlined in Section 3.2.

Fertile alluvial soils occur in the flat areas adjacent to the River Nore and its tributaries.

### 3.4.3 Lough Macask

The geology of the area to the north west of the City has resulted in the formation of Lough Macask pNHA (see Appendix I). The Lough is a small pond 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.

The nature of the sites geology has given rise to vegetation which is similar to that which would be found in a turlough and which differs from most other wetlands around Kilkenny thus giving it a certain interest (NPWS, 1995)<sup>7</sup>.

### 3.4.4 Existing Problems

Greenfield development results in the building upon and thereby sealing off of non-renewable subsoil and soil resources. Most soils within the City have been sealed off while an increasing amount of soils are being sealed off in the Environs as a result of the City's expansion.

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.

### 3.4.5 Evolution of Soil in the Absence of a CEDP

The currently proposed Soil Directive suggests encouraging the rehabilitation of brownfield sites, thus reducing the depletion of greenfield

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<sup>7</sup> National Parks and Wildlife (1995) *Site Synopsis for Lough Macask proposed Natural Heritage Area* Dublin: Government of Ireland

sites. However, in the absence of a CEDP there would be no framework for the direction of growth towards brownfield sites in the City, 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.

## 3.5 Water

### 3.5.1 Introduction

Water in and around Kilkenny City is an integral part of the landscape.

The River Nore, its tributaries - the Bregagh and the Brownstown - and Lough Macask, located in the City's eastern environs, support important aquatic flora and fauna and play an important part in the City's ecological networks (see Section 3.2). In a wider context the Nore is important for the supply of drinking water through direct abstraction and groundwater recharge.

### 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 and Kilkenny Borough 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. Kilkenny and Environs 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 Surface Water

#### 3.5.4.1 EPA Monitoring

The most recent water quality data from the EPA (EPA, online water quality maps) shows that the quality of the Nore deteriorates as it flows through the City. The River deteriorates from a Q4 biotic rating<sup>9</sup> to a Q3 biotic rating<sup>10</sup>.

<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

The Bregagh River is identified as having a Q3 Biotic Rating as it flows into the Nore in Kilkenny City while the Brownstown River is identified as having a Q4 Biotic Rating before it flows into the Nore to the south of the city.

#### 3.5.4.2 SERBD Risk Assessment

Figure 3.5 shows the SERBD Risk Assessment for river catchments in and around Kilkenny City. The surface water body which covers the majority of the area is classed as being *at risk* of failing to achieve the WFD's objectives by 2015 while a smaller area is covered by a surface water body which is *probably at significant risk*.

### 3.5.5 Groundwater

#### 3.5.5.1 Introduction

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.

#### 3.5.5.2 Vulnerability

Kilkenny City and its Environs are located over a regionally important diffuse karst aquifer. The Geological Survey of Ireland rates aquifers according to their vulnerability to pollution (see Figure 3.6). Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter underground water. Aquifers of high vulnerability (which can be predominate the majority of the City and Environs) and aquifers

of extreme vulnerability (which can be found in a number of areas in the Environs) are the two classifications of aquifers which are most sensitive to an imposed contaminant load - the majority of the City and Environs ground waters are classified as being either of extreme or high vulnerability.

#### 3.5.5.3 SERBD Risk Assessment

Figure 3.7 shows the SERBD Risk Assessment for Groundwater in and around Kilkenny City. Most of the aquifers are assessed as being *probably at significant risk* of failing to achieve the WFD's objectives by 2015 with smaller aquifer areas assessed as being *probably not at significant risk*.

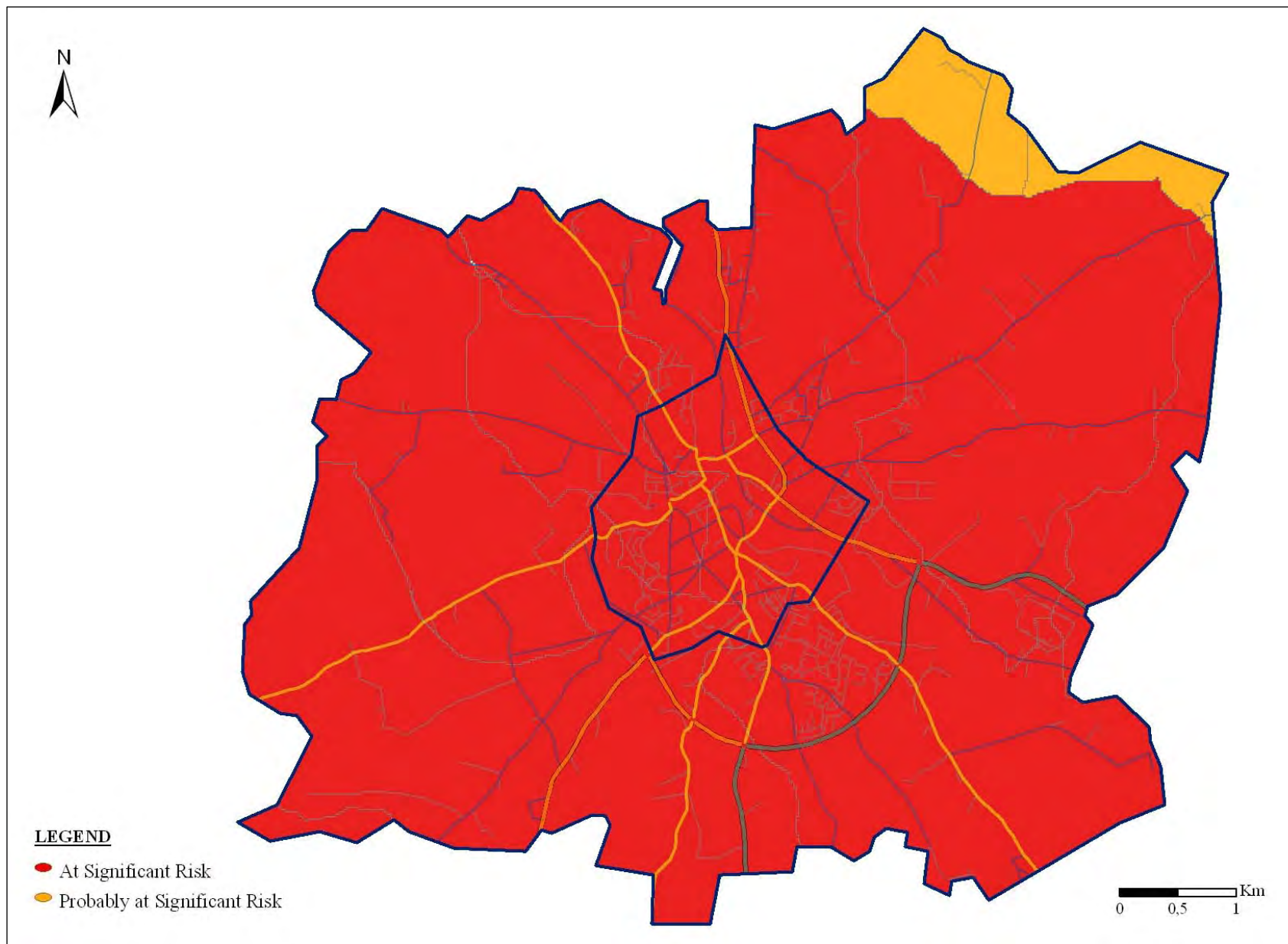
### 3.5.6 Flooding

The Office of Public Works' (2007) National Flood Hazard Mapping identifies multiple recurring flood points within the city over recent decades. In recent years the River Nore and its banks within Kilkenny City have undergone a series of flood mitigatory development works, however flooding is still present as a threat along the banks of the Bregagh.

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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.



**Figure 3.5 SERBD River Catchment Risk Assessment**



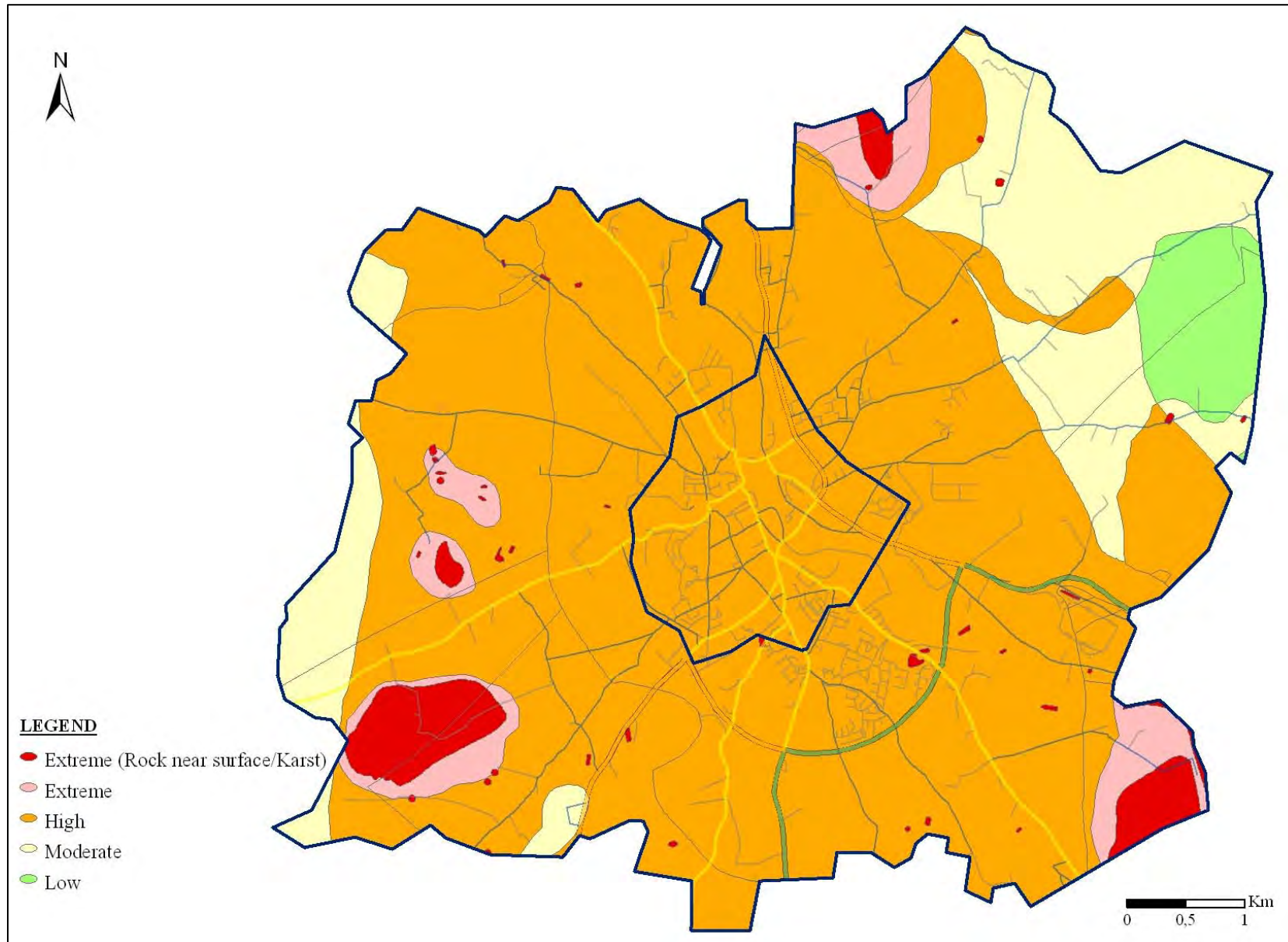
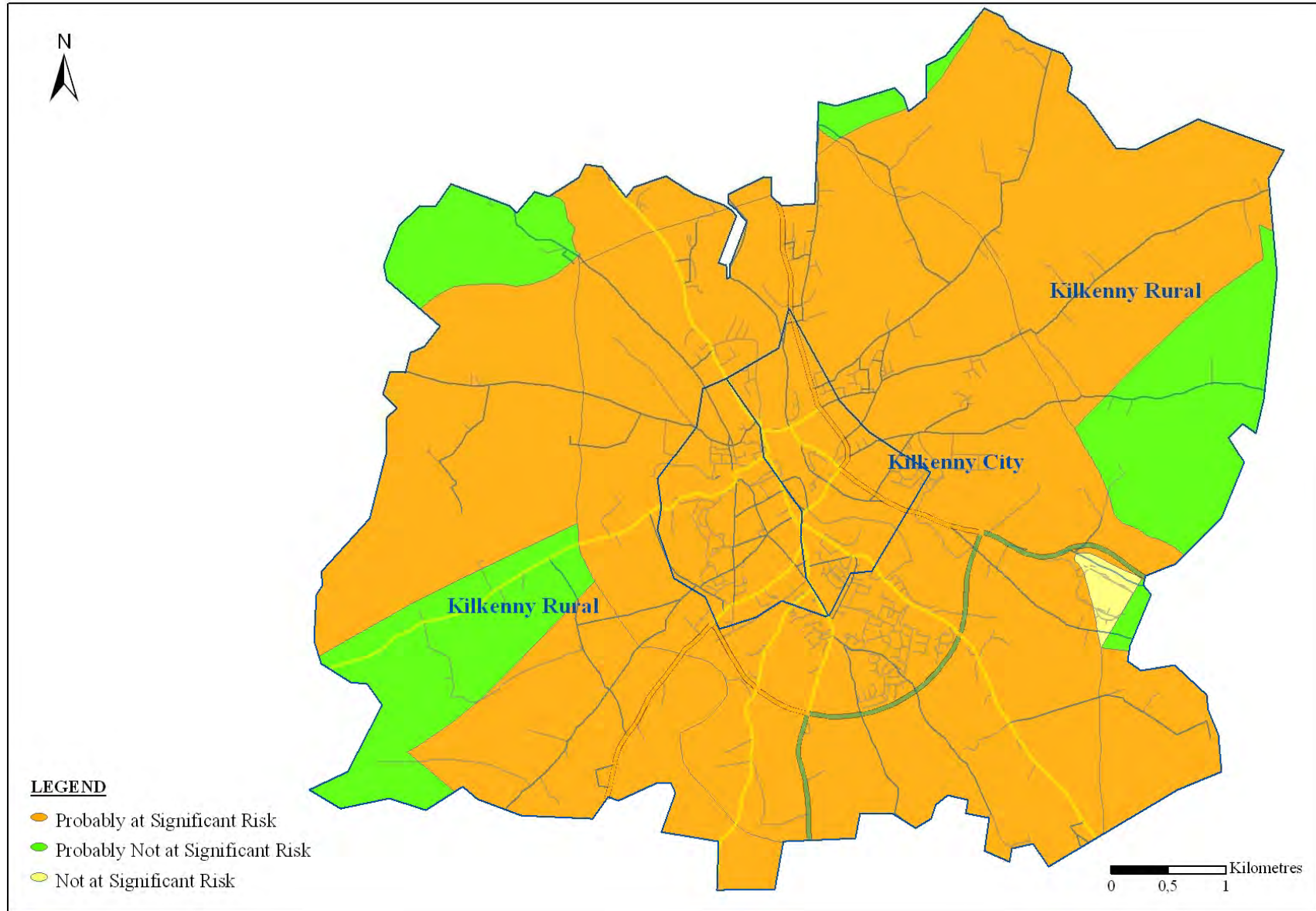


Figure 3.6 Ground Waters Vulnerability Rating



**Figure 3.7 SERBD Ground Waters Risk Assessment**

### 3.5.7 Existing Problems

There are severe environmental problems in and around Kilkenny City 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 surface water body is classified as being *at significant risk* of failing to achieve the WFD's objectives by 2015. In addition some of the river channel lengths have been measured as being slightly or moderately polluted.

The majority of the City and Environs' ground waters are classified as being either of extreme or high vulnerability and are probably *at significant risk* of failing to achieve the WFD's objectives by 2015.

Pressures which may place water bodies at risk from meeting their statutory targets under the Water Framework Directive as identified by the EPA during the consultation process which preceded this document include surface water and groundwater discharges by the Kilkenny Block Company, to the north west of the town and by the Irish Sisters of Charity to the south west of the town. Combined sewer overflows were also identified as potentially adversely impacting upon water quality - there are fifteen such overflows within Kilkenny City.

### 3.5.8 Evolution of Water in the Absence of a CEDP

Based on the risk assessment included in the SERBD Characterisation Report (2005)<sup>11</sup>, a sizable proportion of water bodies in and around Kilkenny City and Environs 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 these 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

The prevailing wind direction in Kilkenny City is south-west to north-east.

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.

Climate in the City is similar to that of the rest of the County. Relative to the rest of the Country, the continental climate type of the County is rather 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 rather extremely 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>12</sup>.

### 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.

<sup>11</sup> SERBD Project Office (2005) *Article 5 Characterisation Summary Report* Carlow: WRBD Project Office

<sup>12</sup> CAAS (2002) *Kilkenny Landscape Appraisal* Kilkenny: Kilkenny County Council [data from Met Éireann, Dublin.]



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

In the absence of a CEDP 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.

## **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 and Kilkenny Borough 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 across the County, including Kilkenny City and its Environs. 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 City and Environs 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 both Councils.

There is currently insufficient waste water treatment infrastructure in Kilkenny City and Environs to serve existing and proposed populations.

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 areas to be prioritised for Waste water infrastructure;- An upgrade of the Kilkenny City Wastewater Treatment Plant at Purcellsinch to the south east of the City is set to be funded under the Major Schemes Programme while a new waste water treatment plant, the Kilkenny City Western Environs, is set to be funded from developments within the area.

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.

### **3.7.2 Drinking Water Supply**

Water is abstracted from the River Nore to the north of the City's Environs while to the south west of the City's Environs, to the south of the River Bregagh, there is a groundwater abstraction point. Water is supplied to Kilkenny City and Environs by the Kilkenny County Council's treatment plant at Troyswood and the Borough Council's treatment plant at Radestown. Between them, these produce over 3 million gallons of water per day.

### **3.7.3 Transport Infrastructure**

#### **3.7.3.1 Roads**

Kilkenny City is connected to Carlow in the east through the N10 National Primary Road and to Waterford in the south through another stretch of the N10 which joins the N9 near Knocktopher. The N76 National Secondary Road links the City to Clonmel in the south west while the N77 and N78 link the City with County Laois in the north. A ring road will eventually encircle the entire city is partially completed. When it is finished the bypass will carry long/medium distance traffic which does not require access to the City Centre. The City has a number of Regional, Third and Fourth Class Roads.

Kilkenny City is connected to the Dublin/Waterford line by a spur from Lavistown to the Railway Station on the Dublin Road. A limited bus service is provided within the City and Environs by a private bus operator which operates from Mondays to Saturdays.

Figure 3.8 shows Kilkenny City's existing and proposed transport infrastructure.

### 3.7.3.2 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.

### 3.7.3.3 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.

### 3.7.4 IPPC Licensed Industries

There are three Integrated Pollution Control licensed industries (Figure 3.9 and Table 2.1); one - an 'A Risk' Category Industry - in the City Centre and two in the south eastern environs.

Reg. No.	Company Name	Licensed Status	Risk Category
P0448-01	E. Smithwick & Sons Ltd	Licensed	A
P0313-01	NN Euroball Ireland Ltd	Licensed	C
P0258-01	Tex Tech Industries Ltd	Licensed- actively ceased and under threshold	Not Categorised

Table 3.2 IPPC Licensed Facilities

### 3.7.5 Existing Environmental Problems

Kilkenny City has experienced large population 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.

Any lack in waste water treatment infrastructure has the potential to adversely impact 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.

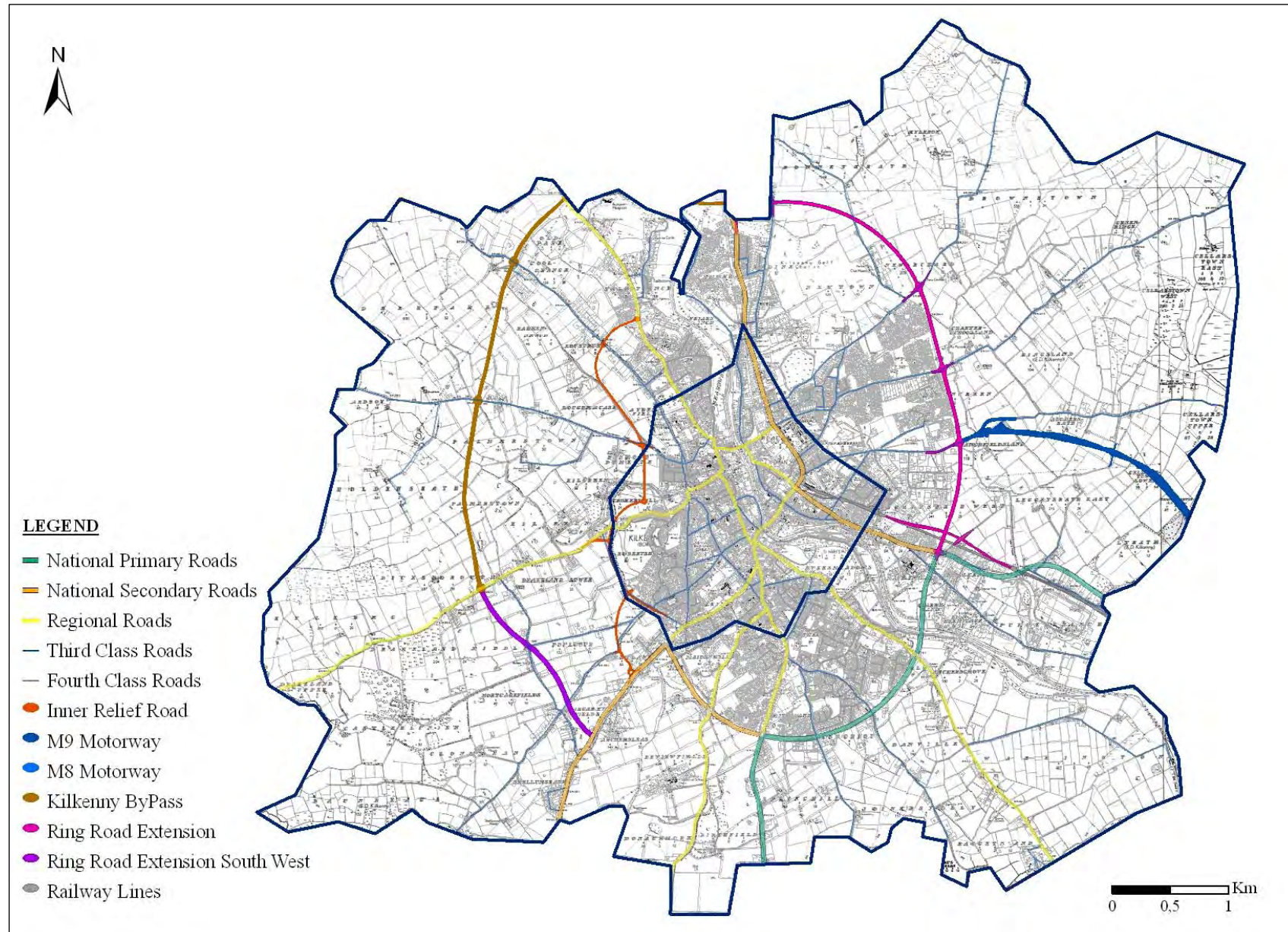
In order to accommodate recent and future growth, programmes of waste water treatment plants and networks, water supply infrastructure and transport infrastructure need to be implemented. These programmes have the potential to have significant adverse impacts on the environment if not mitigated. These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

### 3.7.6 Evolution of Material Assets in the Absence of a CEDP

In the absence of a CEDP 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 and transport infrastructure and powerlines.

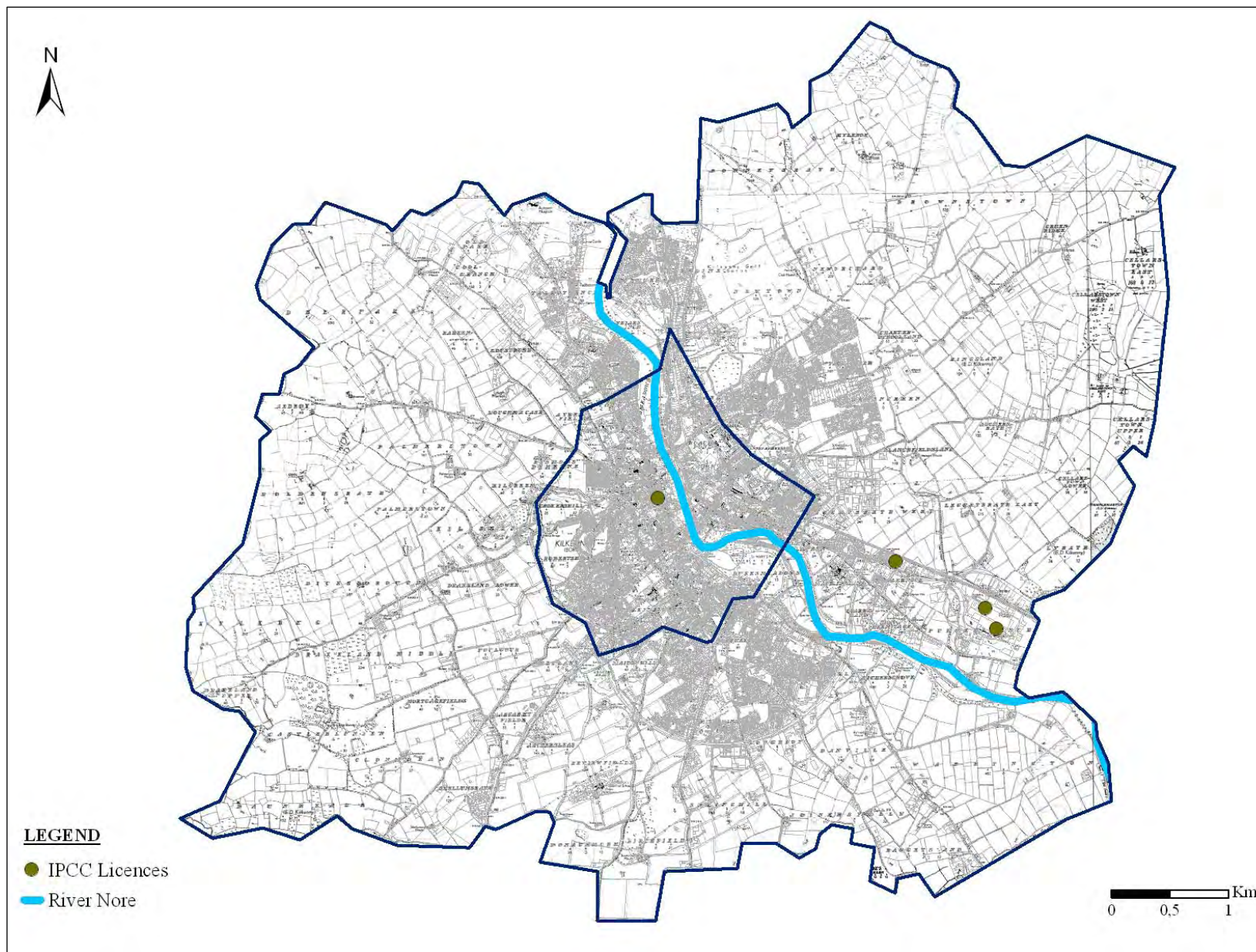
Failure to provide sufficient infrastructure for development would be likely to result in significant adverse impacts. For example, failure to upgrade and provide new waste water infrastructure would be likely to adversely impact upon water quality and indirectly significantly adversely impact upon biodiversity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

Due to sensitivities including landscape, archaeology and proximity to residences any significant improvements to the road network which have not been already granted planning permission must be preceded by Environmental Impact Assessments and consent from the planning authority.



**Figure 3.8 Transport Infrastructure**





**Figure 3.9 IPPC Licensed Facilities**

## 3.8 Cultural Heritage

### 3.8.1 Introduction

Heritage, by definition, means inherited properties, inherited characteristics and anything transmitted from 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 the medieval Kilkenny City is a unique resource which is fundamental to the cultural identity of the City and the quality of life of its citizens. Historic buildings can define the City's localities and communities and can become a focus of community identity and pride.

### 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.

Kilkenny City has a rich archaeological heritage which is a valuable cultural and tourism asset.

The wealth of archaeological heritage is reflected in the extent of the Record of Monuments and Places (RMP) for the City (see Figure 3.10). The RMP for Kilkenny lists and protects monuments and places under Section 12 of the National Monuments (Amending National Monument Acts from 1930 to 1994) Act, 1994. Monuments are any artificial or partly artificial building, structure, or erection. Monuments protected under the Act include prehistoric monuments and any monuments and places associated with commercial, cultural, economic, industrial, military, religious or social history. The Act includes all monuments in existence before 1700 A. D. (Government of Ireland, 1994).

Kilkenny City is identified as a single Recorded Monument (kk019-026) in Record of Monuments and Places.

There are a number of Zones of Archaeological Potential within the city, which indicate areas of known or potential archaeological interest, – the most extensive of which is centered on the core of Kilkenny City.

### 3.8.3 Architectural Heritage

Kilkenny City has a rich architectural heritage which includes the city walls, abbeys, gate lodges, barracks, a round tower, churches, the railway station, Smithwick's brewery, a variety of public and private houses, shops, walks bridges, locks and Kilkenny Castle and its gardens, parks and walls.

Historically important buildings in the City include the Shee Alms House, Rothe House, Bishops Palace and Black Abbey and there are many fine examples of traditional shop fronts. Buildings such as St. Canice's Cathedral,

Kilkenny Castle, and St. Mary's Cathedral dominate the centre and are linked by streets of different character and type. Many of these streets are joined together by narrow laneways or slips.

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. As well as buildings included on the RPS, there are a number of other buildings within the City that are listed in the National Inventory of Architectural Heritage (see Figure 3.11). 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.

There are many RPS entries in Kilkenny City with nine Architectural Conservation Areas (ACAs) found in Kilkenny City;- the City Centre ACA ;Kilkenny Castle ACA; St. Canice's ACA; John Street ACA; Patrick Street ACA; Michael Street ACA; St. Mary's ACA; Lacken ACA, and; Talbotsinch ACA.

An ACA is a place, area, group of structures or townscape which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected

structures, whose character it is an objective to preserve in a development plan. The ACA designation requires that planning permission must be obtained before significant works can be carried out to the exterior of a structure in the ACA which might alter the character of the structure or the ACA.

### **3.8.4 The Medieval Walls of Kilkenny City**

The historic urban centre of Kilkenny City retains much of its medieval fabric with the imposing Kilkenny Castle and a number of medieval religious buildings such as St. Canice's Cathedral, the Dominican Black Abbey and St. Francis' Abbey surviving.

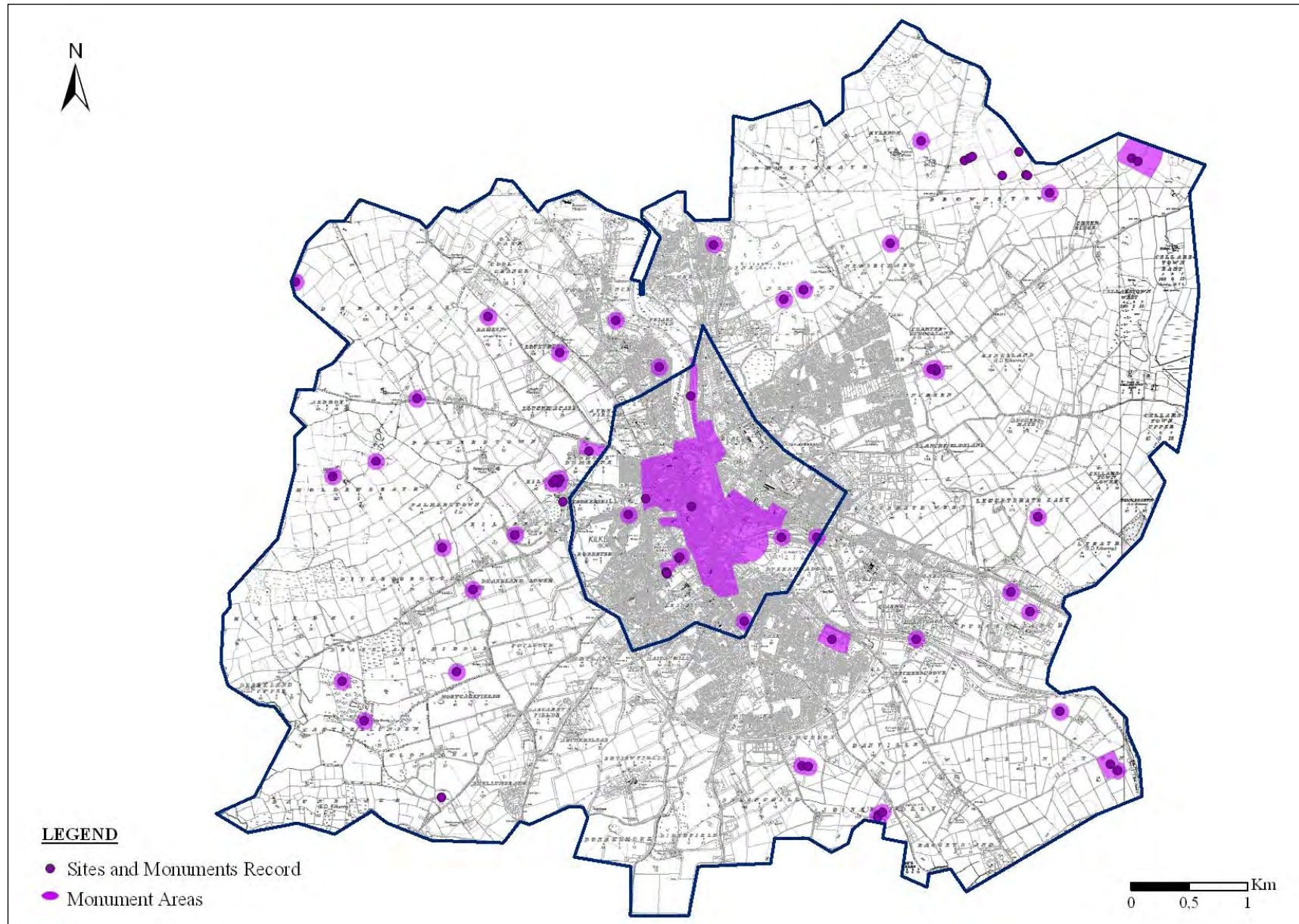
The City's historic streetscape developed and was contained, and still is to a very large degree, within a defensive circuit of stone walls. These walls, once a source of great civic pride, were a major undertaking in terms of construction and maintenance by the medieval inhabitants of Kilkenny City. The walls of the City are apparent in the City's current landscape and, as they were intended to do some 700 years ago the still define property boundaries and, where they survive above ground are imposing features.

The medieval walls around the City are an important legacy which should be protected; they are a vital element of the historic fabric that also includes buildings, the streetscape, ancient property boundaries and buried archaeological deposits (Doyle, 2005)<sup>13</sup>.

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<sup>13</sup> Doyle, Ian (2005) 'Medieval walls of Kilkenny City' *Heritage Guide No. 32* Wicklow: Archaeology Ireland





**Figure 3.10 National Monuments and Areas**

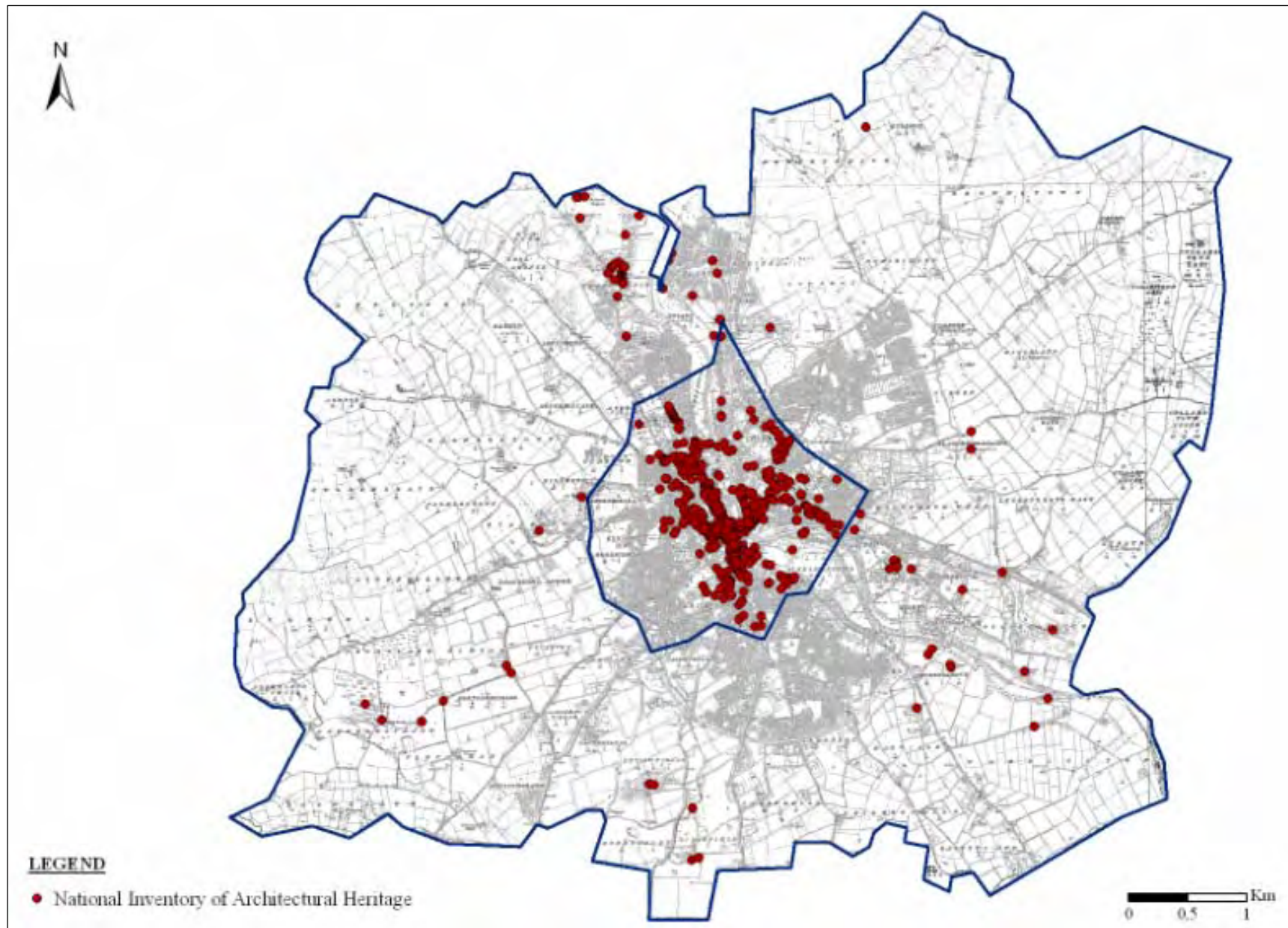


Figure 3.11 National Inventory of Architectural Heritage



### **3.8.5 Existing Environmental Problems**

Although many aspects of cultural heritage are protected under legislation, impacts can still occur as a result of development.

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.

Archaeology can be previously unknown but can be damaged through development causing ground disturbance.

Development on sites adjoining protected monuments, places or structures can also impact upon the setting of these cultural heritage items.

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 settlements like Kilkenny City.

The cumulative accommodation of large scale development in the City has the potential to cumulatively impact upon cultural heritage as well as the medieval layout and settlement patterns of the city.

### **3.8.6 Evolution of Cultural Heritage in the Absence of a CEDP**

In the absence of a CEDP 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**

The character of Kilkenny is the result of a combination of the natural features of river and topography, the street spaces as well as the City's cultural heritage including its various buildings.

The River Nore is an important natural feature of the City's landscape facilitating valuable views and prospects along its tree-lined banks and its bridges. The River's floodplains are an integral part of the urban structure and the overall character of the city, providing natural elements within the City Centre which are utilised by locals and visitors. Other public spaces within the City range from the potentially grand civic space in the Parade to smaller spaces within the numerous streets and slipways of the City.

The most significant part of the built environment of Kilkenny is the quality of the City Centre. Buildings such as St. Canice's Cathedral, Kilkenny Castle, and St. Mary's Cathedral dominate the centre and are linked by streets of different character and type. Many of these streets are joined together by narrow laneways or slips - a particular feature of Kilkenny's townscape. Some of these slips are pedestrian ways which form short cuts across the width of particularly long city blocks and do not have frontage development while others act as narrow streets with buildings fronting onto them. This network of streets and laneways is complemented by the banks of the River Nore.

Within the central area, the streets are typically narrow space channels enclosed on both sides by 18th and 19th century facades. The main streets tend to run parallel to the contours while the slips run across the contours often forming short-cuts. The historic band of retail uses

fronting Parliament Street and High Street in the central area is complimented by areas of mixed uses at the rear. This linear arrangement of uses was influenced by topography, the frequent flooding of the Nore and Bregagh Rivers and the historical developments which led to the creation of Irishtown and Hightown.

The environs of the City are largely residential in character with industrial, commercial, institutional and other uses. The structure is more open rather than the close grain form the Historic City. Landscapes, private gardens, open views and vistas, are an integral part of its visual character.

### **3.9.3 Landscape Sensitivities**

Specific components in the City are sensitive to development - they have a reduced ability to accommodate change or intervention without suffering unacceptable effects to their character. These sensitivities include the cultural heritage components and their contexts (National Monuments, National Monument Areas, Protected Structures, Architectural Conservation Areas and the medieval walls of the City) and the River Nore and its banks.

### **3.9.4 Views**

Kilkenny City and Environs has a number of sites, areas and vantage points from which notable views of the city can be had. There are also a number of prospects within the city from which particularly good views of the City's most important public buildings and natural landscape features may be obtained. Of particular importance are views to and from Kilkenny Castle, John's Bridge, Greens Bridge, Ossory Bridge, the Cathedral and the banks of the River Nore. Views to be protected contained in the CEDP are identified on Figure 3.12.

### **3.9.5 Existing Environmental Problems**

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 the City's landscape, especially in those areas within and nearest to the City Centre where

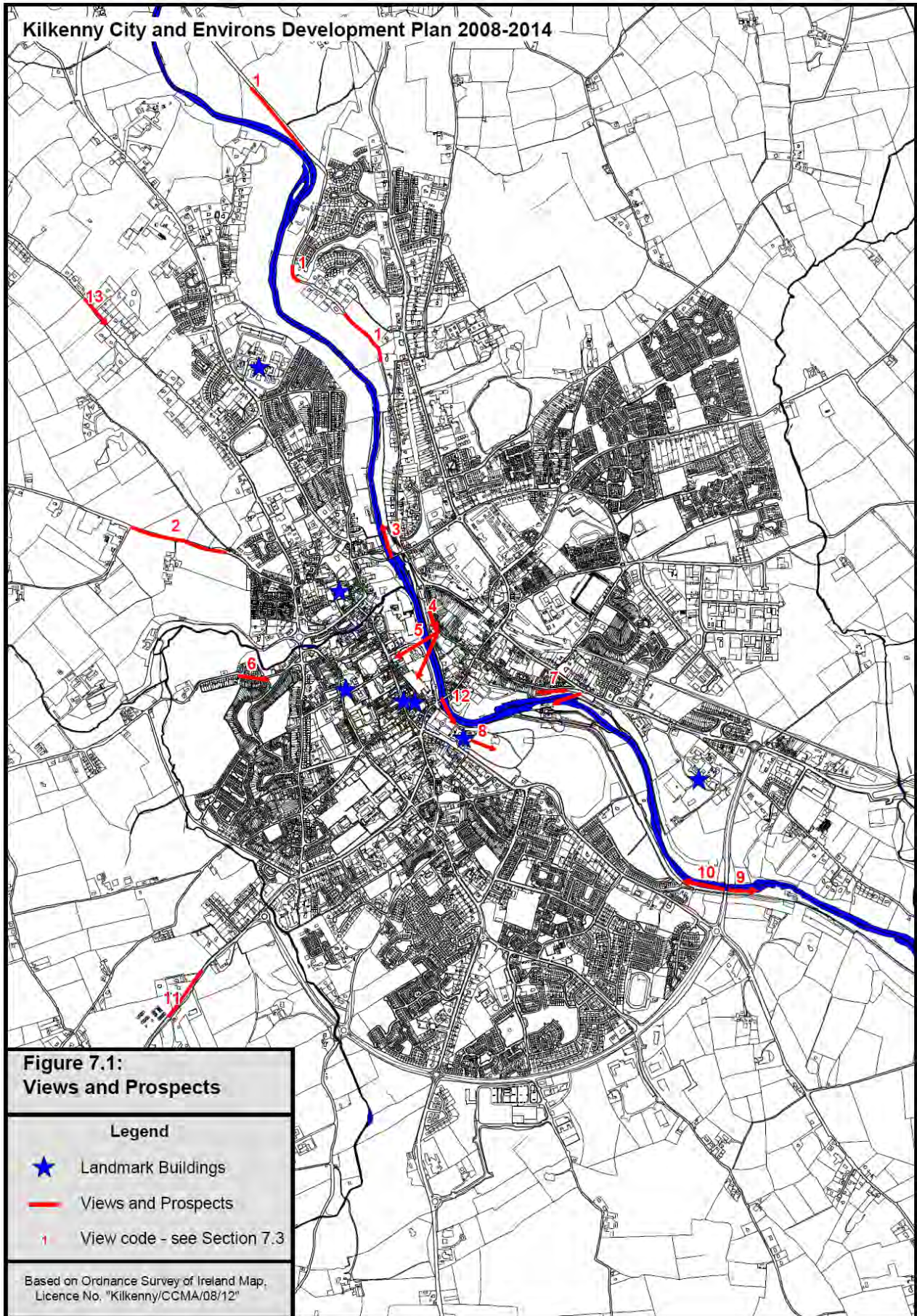
most cultural heritage components together with their contexts are situated.

Existing issues with regard to landscape in Kilkenny City include: developments encroaching onto and adjacent to the banks of the River Nore and developments which impact upon important views and prospects. Also the cumulative accommodation of large scale development in the City has the potential to cumulatively impact upon landscape and cultural heritage.

### **3.9.6 Evolution of Landscape in the Absence of a CEDP**

It is likely that in the absence of a CEDP there would be no framework directing developments to appropriate locations resulting in an increased likelihood that such development would impact upon landscape sensitivities or important views.





**Figure 3.12 Views and Prospects**

## Section 4 Strategic Environmental Objectives

### 4.1 Introduction

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the CEDP 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 CEDP 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 CEDP - 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, inter alia, settlement centre level in Kilkenny and integrated into any plan for Kilkenny City and its Environs.

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 CEDP.

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

The primary source used in formulating the SEOs was Table 4B of the SEA Guidelines (DEHLG, 2004)<sup>14</sup>. This list has been amended to

<sup>14</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.

give affect to objectives that are considered relevant to this CEDP. The use of SEOs, although not a statutory requirement, does fulfil 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>15</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.

<sup>15</sup> Department of Arts, Heritage, Gaeltacht and the Islands (2002) *National Biodiversity Plan* Dublin: Government of Ireland



## 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.

The habitats and species occurring SACs 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.

### 4.2.3 Ecological Networks

Development within Kilkenny City and Environs has led to loss of ecological networks and connectivity as identified in the baseline description.

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 baseline description has identified the rich aquatic biodiversity resources sustained by the River Nore.

Certain aquatic species occurring in the Nore are protected under Annex II of the Habitats Directive and, in addition, the Nore is designated as Salmonid water under the Quality of Salmonid Waters Regulations 1988, as well as being designated an SAC.

### 4.2.5 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to the City and Environs' 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
<b>Indicator B1:</b>	Percentage of relevant habitats and designated ecological sites lost as a result of implementation of the CEDP
<b>Target B1:</b>	No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the CEDP

<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 CEDP
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 CEDP

<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 CEDP – 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 CEDP

Note: the impact of implementing the CEDP 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 CEDP on human health is determined by the impacts which the CEDP 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
Indicator HH1:	Occurrence (any) of a spatially concentrated deterioration in human health
Target HH1:	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 SEO, Indicator and Target 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>16</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 CEDP) at the end of the CEDP lifespan

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

## 4.5 Water

### 4.5.1 The WFD 2000

#### 4.5.1.1 Overview

As described in the environmental baseline description, the South Eastern River Basin District's (SERBD) Characterisation Report includes a risk assessment which classifies waters in found within and surrounding Kilkenny City 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

<sup>16</sup> SEO S1 was identified as conflicting with SEOs CH1 and CH2

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>17</sup>, including their relevant metabolites, degradation and reaction products - 0,1 µg/l and 0,5 µg/l (total<sup>18</sup>).

Irish groundwater threshold values<sup>19</sup> are currently in the process of being set by the EPA.

<sup>17</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>18</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>19</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

#### 4.5.2 SEOs, Indicators and Targets

The following SEOs, Indicators and Targets have been developed with regard to the City and Environs' 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

#### 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.

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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.

#### 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>20</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>21</sup> :	Average distance travelled to work or school by the population of the City and Environs
Target A1ii:	A decrease in the average distance travelled to work or school by the population of the City and Environs

#### 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 infrastructure, transport infrastructure and powerlines etc need to be implemented. These programmes are likely to have significant adverse impacts on the environment if unmitigated. 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

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<sup>20</sup> As measured by the Central Statistics Office

<sup>21</sup> As measured by the Central Statistics Office



(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 and KBC, 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>22</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.

### 4.7.5 SEOs, Indicators and Targets

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

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<sup>22</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

<b>SEO M1:</b>	To serve new development under the CEDP 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 CEDP
<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 CEDP

## 4.8 Cultural Heritage

### 4.8.1 Archaeological Heritage

There is a rich archaeological heritage within Kilkenny City.

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

Kilkenny City is identified as a single Recorded Monument (ref: kk019-026) in Record of Monuments and Places and there are a number of Zones of Archaeological Potential within the city – the most extensive of which is centered on the core of Kilkenny City.

### 4.8.2 Architectural Heritage

In addition to its archaeological heritage, Kilkenny City has a rich architectural heritage which is displayed by the number of entries in the Record of Protected Structures (RPS) for the City. 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 Kilkenny City and Environs environmental baseline and the above strategic actions.

<b>SEO CH1:</b>	To protect the archaeological heritage of Kilkenny City and its Environs with regard to: entries to the Record of Monuments and Places; zones of archaeological, and; the context of the above within the surrounding landscape where relevant.
Indicator CH1:	Number of unauthorised developments occurring over the lifespan of the CEDP which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant
Target CH1:	No unauthorised developments occurring over the lifespan of the CEDP which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant.

<b>SEO CH2:</b>	To preserve and protect the special interest and character of Kilkenny City and Environs' 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 CEDP 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 CEDP 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.

## 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.

Sensitive landscape features in the plan area have been identified within the environmental baseline description.

#### **4.9.2 SEOs, Indicators and Targets**

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

<b>SEO L1:</b>	To avoid significant adverse impacts on the landscape, especially with regard to sensitive landscape features and designated scenic views
<b>Indicator L1:</b>	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 CEDP
<b>Target L1:</b>	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 CEDP

## Section 5 A City and Environs Development Plan for Kilkenny

### 5.1 The Plan

#### 5.1.1 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 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 and Kilkenny Borough Council have prepared the City and Environs Development Plan to which this report refers.

Kilkenny Borough Council is the Planning Authority for the administrative area within the Borough boundary while Kilkenny County Council is the planning authority for the Environs area outside the borough boundary.

The Kilkenny City and Environs Development Plan (CEDP), 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 Kilkenny City and Environs 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 CEDP is intended to provide for the proper planning and sustainable development for Kilkenny City and Environs for a duration of six years from the date on which it is adopted.

#### 5.1.2 Structure of the CEDP

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 City, the overall context will be informed by all relevant policies, including the settlement strategy, housing, community, economic, heritage and infrastructure considerations, underpinned by the City 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.

#### 5.1.3 Vision and Strategic Goals

The CEDP vision is to develop Kilkenny City as a centre of excellence for creativity in all sectors whilst ensuring the continued protection and enhancement of the city's magnificent built and natural heritage, its thriving cultural and artistic base and its strong and dynamic services economy. This will ensure that the city will be a vibrant and attractive place for people to visit, work and live in as it fulfils its role as a Hub for the South East Region.

The strategic goals identified within the CEDP are as follows:

- To promote the sustainable development of the City so as to enable it to fulfill its role as a Hub within the South East Region;
- To provide the highest quality living environment possible, to all members of our community;
- To guide the location and pattern of development whilst ensuring that a relatively compact urban form is maintained;
- To promote balanced and sustainable economic development and employment by ensuring that a diverse range of economic sectors are developed;
- To develop an integrated transport strategy for the City and Environs linked to land use objectives, which facilitates access to a range of transport modes;

- To protect, conserve and enhance the built and natural heritage of Kilkenny City and Environs for future generations;
- To promote the regeneration of the city centre, in particular the sites identified in the City Centre Local Area Plan, and to protect and promote the city centre as the commercial and cultural focus for Kilkenny City and Environs;
- To advance the redevelopment of the Bateman Quay site in accordance with the principles of the City Centre Local Area Plan;
- To provide for the development of sustainable communities through the preparation of Local Area Plans for the expansion of the City and Environs;
- To promote Western Environs Local Area Plan and the Loughmacask Local Area Plan areas as major new neighbourhoods for the expansion of Kilkenny City and Environs; and,
- To make provision for a hierarchy of parks, open spaces and outdoor recreation areas and to use the river corridors of the River Nore, Breagagh and Pocke to provide open space for the City and Environs.

#### **5.1.4 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 CEDP 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 CEDP.

## **5.2 Relevant Forward Planning Strategic Actions**

### **5.2.1 Introduction**

The Kilkenny CEDP is nested in a hierarchy of land use forward planning strategic actions. The CEDP must be consistent with the objectives of these strategic actions while any programmes or projects which take place in Kilkenny City and Environs must be consistent with the CEDP, when implemented.

### **5.2.2 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 centres. The Strategy seeks to renew, consolidate and develop existing urban centres keeping them as physically compact and public transport-friendly as possible to minimise urban sprawl while also achieving a high quality of design in new development. The NSS also sets a national context for spatial planning to inform regional planning guidelines and strategies including the statutory Development Plans.

Under the NSS, critical mass in the South East Region will be enhanced through Waterford performing as a gateway, supported by Kilkenny and Wexford as hubs. These three together form a nationally strategic 'growth triangle'. Kilkenny City is designated as a Hub with a projected target population of 30,000+ by the year 2020.

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

## **5.2.4 Environmental Protection Objectives**

The CEDP 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 CEDP 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 City and Environs 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 CEDP, 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 CEDP as specific policies and objectives.

### 6.2 Identification and Description of Alternative Scenarios

#### 6.2.1 Introduction

Alternatives for the plan have been developed around the concept of the development plan envelope, the extent of land area to be zoned under the plan. Note that the development plan envelope for the Kilkenny City and Environs Development Plan 2002 to 2008 (see Figure 6.1) is used as a reference from which each of the three alternatives developed.

#### 6.2.2 Scenario 1 - *Compact Development*

Development under Scenario 1 (see Figure 6.2) expands the development envelope set by the Kilkenny City and Environs Development Plan 2002 to 2008:

- A linear area of open space is provided for in the Eastern Environs
- In the eastern environs to the north of the N10 and to the east of lands zoned Industrial, lands are zoned Business Park with a Recreation, Amenity and Open Space buffer zoned around the Brownstown River
- Increased areas of residentially zoned lands are provided for in the south eastern environs
- Industrial / Business Park Zoning in the southern environs at Loughboy is extended so as to infill lands which are currently surrounded by this zoning

In addition to these expansions of the development envelope, Scenario 1 identifies areas which may undergo expansion in the future subject to development of a compact urban core and the provision of the appropriate infrastructure. These expansion areas are located outside the development envelope in the western and south western environs.

#### 6.2.3 Scenario 2 - *Semi Compact Development*

Scenario 2 (see Figure 6.3) is as Scenario 1 except with significant extensions to the development envelope in order to provide a greater amount of low density residential zoned lands. Market forces prevail with the areas identified under Scenario 1 as potential future expansion areas, zoned as residential ignoring any prerequisite to develop from the inside of the City outwards. Most development occurs at the junctions of existing and newly built roads.

Due to the areas of land zoned residential, there is a likelihood that development will exceed the provision of the appropriate infrastructure needed to support it.

As well as zoning Scenario 1's potential future expansion areas, additional lands are zoned in the eastern environs and at Loughboy to the south.

#### **6.2.4 Scenario 3 - *Dispersed Development***

Scenario 3 (see Figure 6.4) represents a further expansion of the City and Environs development envelop with particularly extensive areas zoned for low density residential development over and above those provided for by Scenario 2.

Taking cognisance of market demands, lands are zoned at the junctions of existing routes into the City.



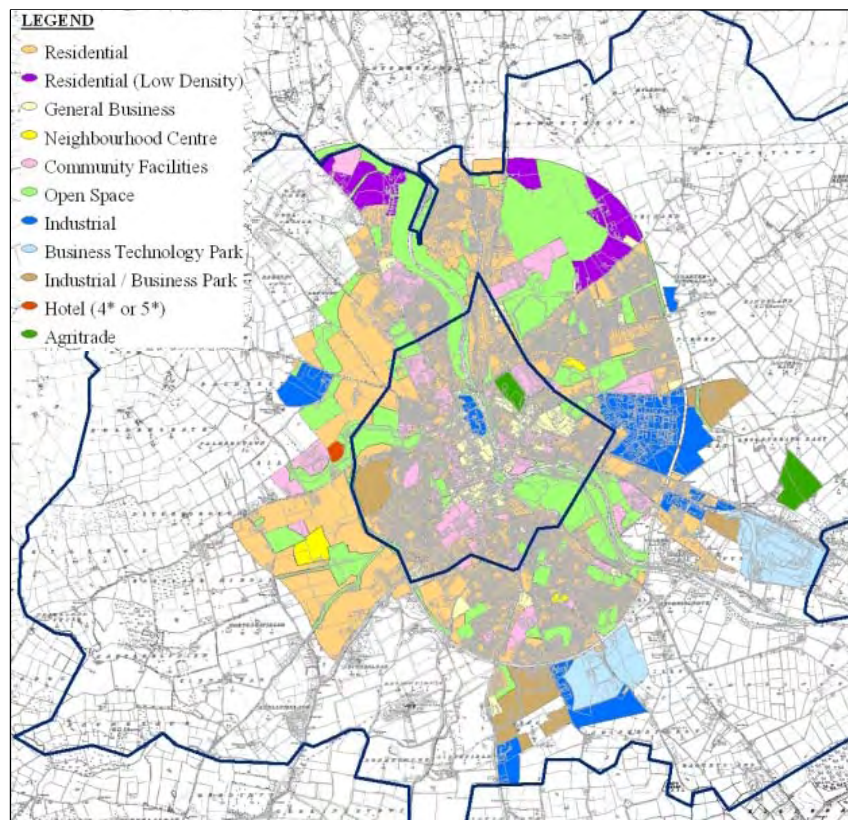


Figure 6.1 The Existing CEDP Development Envelope

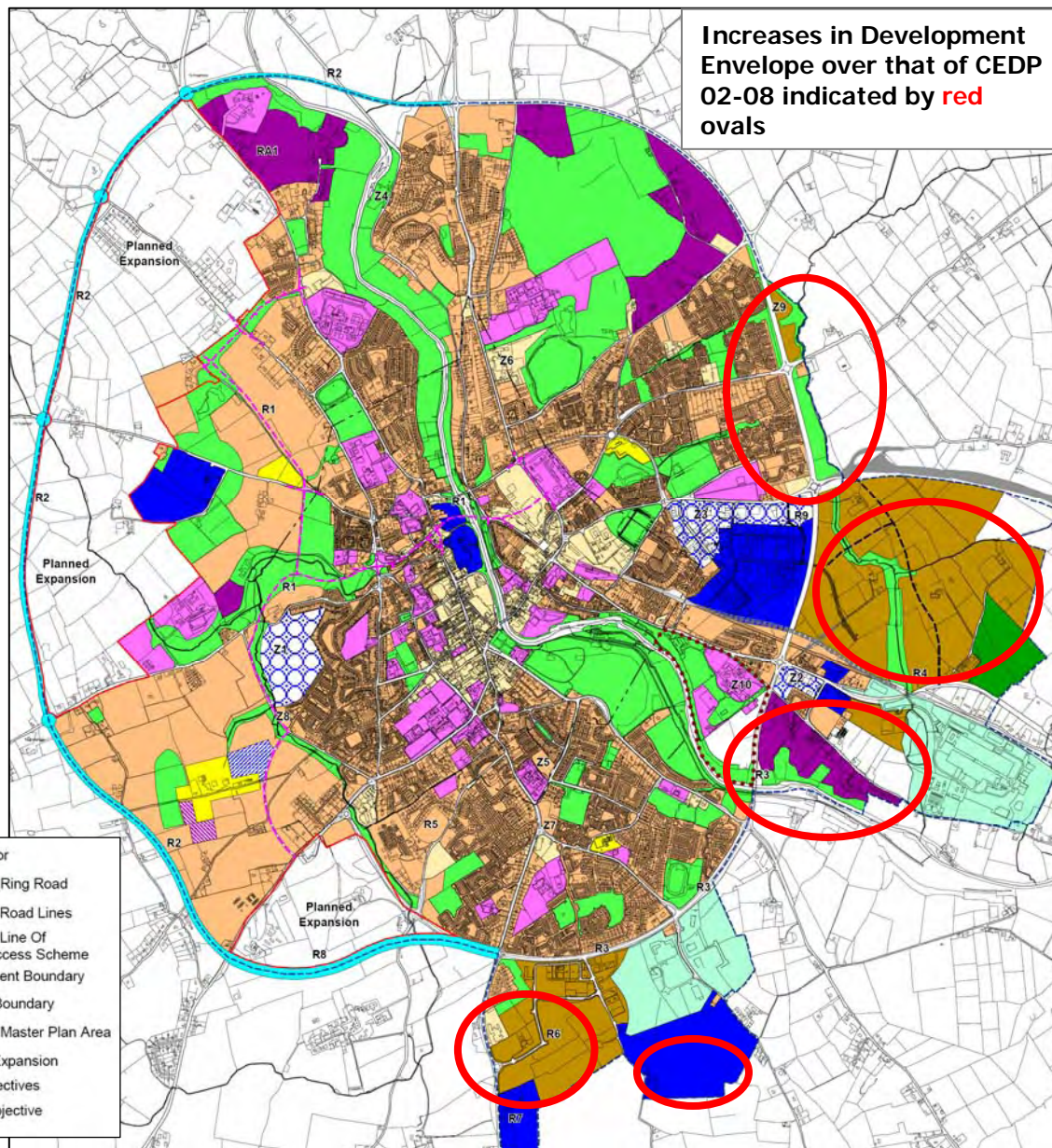


Figure 6.2 Scenario 1 *Compact Development*



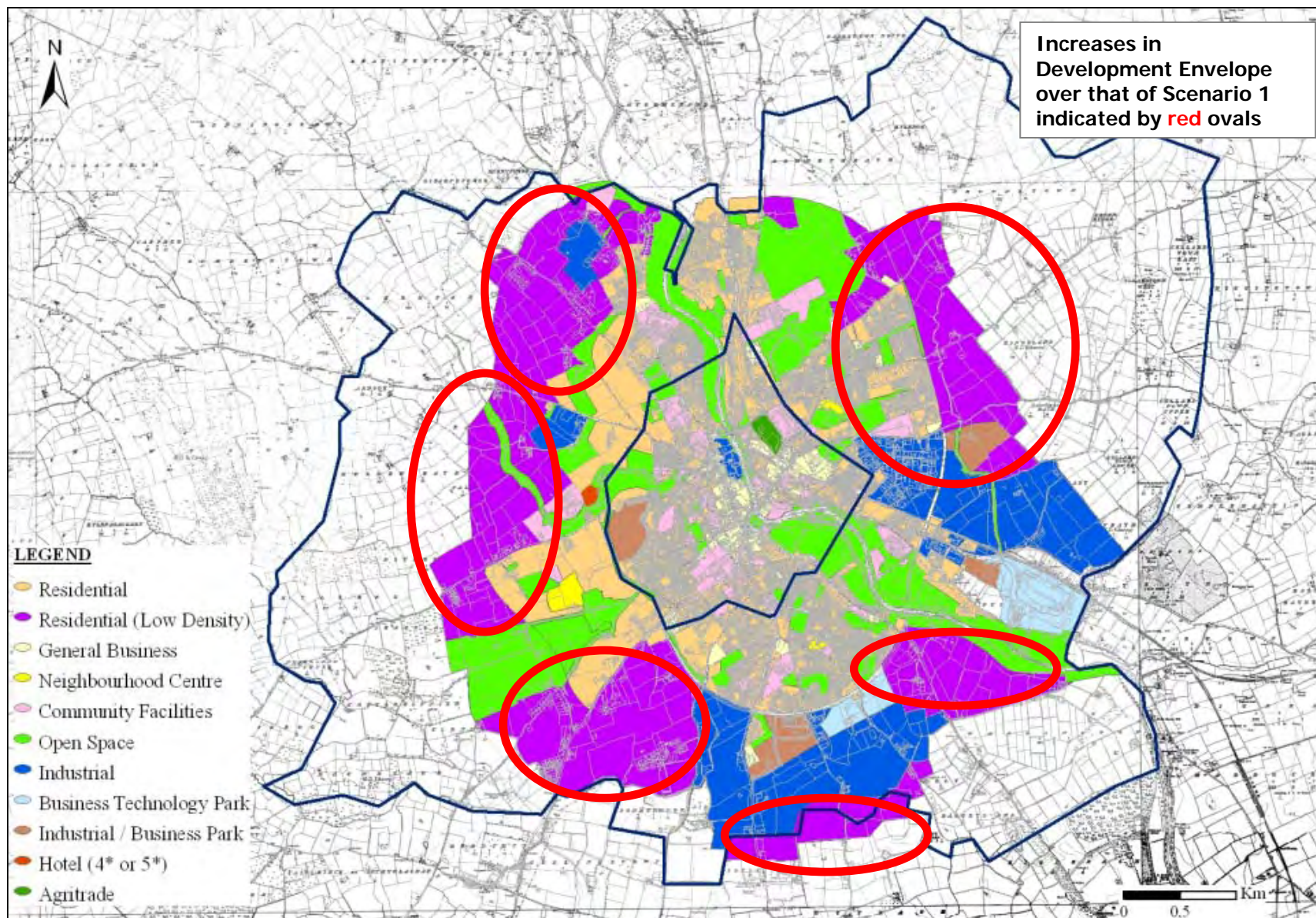


Figure 6.3 Scenario 2 *Semi Compact Development*



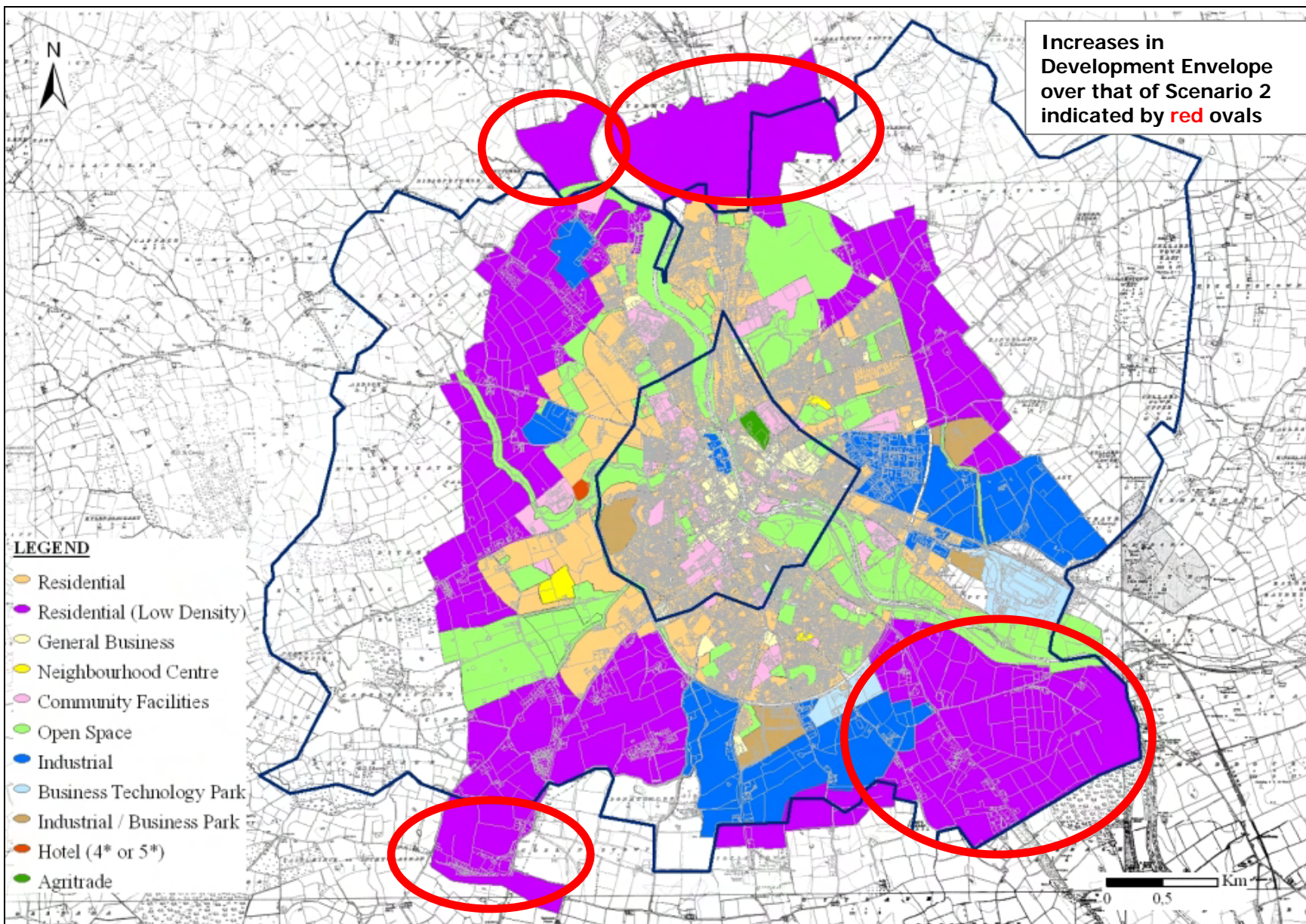


Figure 6.4 Scenario 3 *Dispersed Development*

## 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 City and its Environs 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 City'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 Existing Environment

In order to identify the extent to which environmental sensitivities are likely to be impacted upon by implementation of the plan, use has been made of the description of the environmental baseline, including the maps which spatially represent components of the environmental baseline, provided within Sections 3.2 to 3.9.

#### 7.2.2 Strategic Environmental Objectives (SEOs)

Based on an understanding of the existing and emerging environmental conditions in the City 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*.

<b>Likely to Improve</b> status of SEOs	<b>Probable Conflict</b> with status of SEOs- unlikely to be mitigated	<b>Potential 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) - 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>	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 CEDP
<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>23</sup>
<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>A1</b>	To minimise increases in travel related greenhouse emissions to air
<b>M1</b>	To serve new development under the CEDP with appropriate waste water treatment
<b>CH1</b>	To protect the archaeological heritage of Kilkenny City and its Environs with regard to: entries to the Record of Monuments and Places; zones of archaeological, 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 Kilkenny City and Environs' 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>24</sup>**

<sup>23</sup> SEO S1 was identified as conflicting with SEOs CH1 and CH2

<sup>24</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 Description and Mapping**

### **7.3.1 Scenario 1 - Compact Development**

#### **7.3.1.1 Planning Impacts**

The City and Environs' population and their associated employment, services and infrastructure are concentrated within the existing settlement centre. The outer boundaries of the settlement centre are strictly adhered to, expanding only where necessary and towards serviced lands.

The compact nature of development allows for efficient public transport links between employment and residential locations, facilitating easier circulation and mobility within the City and Environs. Demand for travel is reduced by a reduction in commuting.

The resulting density and scale of population allows for the economic provision of a wider range of services than would be the case in a more dispersed City.

The rural environment which surrounds the City is protected and maintained as this Scenario prevents the leakage of residential development into the surrounding rural areas.

Population is increased within the Borough Council's boundary and opportunities to create replacement and infill housing within the City are maximised.

#### **7.3.1.2 Environmental Impacts**

##### **Surface and Ground Water**

Almost all development is located over surface water bodies that are at significant risk and groundwater bodies that are vulnerable and probably at significant risk. This Scenario results in the least impact upon water quality as infill and renewal is encouraged and greenfield development occurs on serviced lands.

##### **Ecology**

Under this Scenario, with the exception of areas beside the salmonid River Nore and relevant tributaries - there is a relatively low potential for

development and settlement to conflict with nature. However, developments adjacent to the Nore and its tributaries or developments which potentially impact upon ecological connectivity should be very carefully prepared and scrutinised in order to anticipate and avoid impacts on these resources.

##### **Cultural Heritage**

The richness of cultural heritage within the City and Environs emphasises the need to put in place systematic ways of anticipating and avoiding architectural and potential archaeological impacts during the development stage. This is particularly relevant to infill and renewal development.

##### **Landscape**

The majority of the City Environs' landscape would remain unchanged under this scenario which allows for necessary and appropriate extensions to the development envelope.

### **7.3.2 Scenario 2 - Semi Compact Development**

#### **7.3.2.1 Planning Impacts**

Although most of the City and Environs' population and their associated employment, services and infrastructure are concentrated within the existing settlement centre, residential development leaks into the surrounding rural areas resulting in difficulties with regard to the provision of necessary infrastructure in the short to medium term.

No or inefficient public transport links are provided in order to link expansions at the edge of the development envelope.

The provision of local community and social services becomes less economically viable in the outer areas.

A greater locational choice is provided for development within the City and Environs and market forces lead to the take up of green field development over infill and renewal opportunities.

#### **7.3.2.2 Environmental Impacts**

##### **Surface and Ground Water**

Almost all development is located over surface water bodies that are at significant risk and groundwater bodies that are vulnerable and probably at significant risk. This Scenario results



in the increased likelihood of impacts upon water quality as development is allowed on lands which may not be serviced with the appropriate waste water treatment infrastructure.

### **Ecology**

With the expansion of the development envelope there is increased likelihood that ecological connectivity will be significantly adversely impacted upon by residential development. Impacts upon ground and surface waters as a result of inappropriate waste water treatment have the potential to interact with sensitive aquatic species such as Atlantic Salmon.

### **Cultural Heritage**

The richness of cultural heritage within the City and Environs emphasises the need to put in place systematic ways of anticipating and avoiding architectural and potential archaeological impacts during the development stage. This is particularly relevant to infill and renewal development.

### **Landscape**

Increasing areas of agricultural land would be replaced by paved surfaces resulting in an increasingly visually apparent expansion of the City and Environs development envelope.

## **7.3.3 Scenario 3 – *Dispersed Development***

### **7.3.3.1 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:

Residential development covers the outer reaches of the City's environs before the necessary infrastructure and services can be provided leading to inappropriate waste water treatment and a greater need to use the private car for transport.

Large areas of residential development are left without public transport links, community and retail services.

Opportunities for infill or renewal are not taken up as greenfield development is pursued with consequences for the orderly and efficient development of newly developing areas on the edges of the City, 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.

Potential adverse effects on water quality and environmentally sensitive areas, 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 or RPG framework.

### **7.3.3.2 Environmental Impacts**

#### **Surface and Ground Water**

Almost all development is located over surface water bodies that are at significant risk and groundwater bodies that are vulnerable and probably at significant risk. This Scenario results in the adverse impacts upon water quality as development is unlikely to be accompanied by the appropriate waste water treatment infrastructure. 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.

#### **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 habitats - and ecological networks.

#### **Cultural Heritage**

Although impacts upon cultural heritage would still remain likely, if unmitigated against, instances of conflict between development and cultural heritage could be reduced if greenfield development was pursued ahead of infill and renewal.

#### **Landscape**

There would be significant and widespread deterioration of the character and integrity of the edges of what is currently a quite compact City. Large areas of good agricultural land would become blighted by low density residential development.



## 7.4 Evaluation against SEOs

	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>Alternative Scenario 1</b> <i>Most Compact</i>	S1		B1 B2 B3 HH1 CH1 CH2 M1 W1 W2 A1 L1				SS SP MM1 MM2 MM3 MM4 MM5
<b>Alternative Scenario 2</b> <i>Semi Compact</i>		S1 M1 W1 W2 HH1	B1 B2 B3 A1 CH1 CH2 L1				
<b>Alternative Scenario 3</b> <i>Least Compact</i>		B1 B2 B3 HH1 S1 M1 W1 W2	CH1 CH2 A1 L1				

**Table 7.3 Evaluation of Alternative Scenarios against SEOs**

Table 7.3 summarises the evaluation of Alternative Scenarios 1, 2 and 3 against the Strategic Environmental Objectives (SEOs).

## 7.5 The Preferred Alternative

### 7.5.1 Summary of Analysis

On the basis of the above analysis Scenario 1 - *Most Compact* - emerges as the most environmentally sustainable alternative.

## 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 7.2.2. Use has been made of the environmental baseline maps of the individual components (Sections 3.2 to 3.9).

#### 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 Strategic Context

	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>Sustainability</b>							
It is the policy of the Councils to integrate the principles of sustainability in all policies and they will inform all the actions of the Councils for the period of the Plan.	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1						
<b>Strategy for Economic, Social and Cultural Development</b>							
To ensure that the policies and objectives of this plan support the County Development Board strategy.				√			
<b>Vision</b>							
Kilkenny Borough and County Councils will seek to develop the city as a centre of excellence for creativity in all sectors whilst ensuring the continued protection and enhancement of the city's magnificent built and natural heritage, its thriving cultural and artistic base and its strong and dynamic services economy. This will ensure that the city will be a vibrant and attractive place for people to visit, work and live in as it fulfils its role as a Hub for the South East Region.	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1						

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

<b>Strategic Goals</b>							
To promote the sustainable development of the city so as to enable it to fulfill its role as a Hub within the South East Region	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1						
To provide the highest quality living environment possible, to all members of our community	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1						
To guide the location and pattern of development whilst ensuring that a relatively compact urban form is maintained.	S1		CH1 CH2				
To promote balanced and sustainable economic development and employment by ensuring that a diverse range of economic sectors are developed.						√	
To develop an integrated transport strategy for the City & Environs linked to land use objectives, which facilitates access to a range of transport modes.	A1		B3 W1 W2 M1 CH1				
To protect, conserve and enhance the built and natural heritage of Kilkenny City & Environs for future generations.	B1 B2 B3 HH1 W1 W2 A1 CH1 CH2 L1		S1				
To promote the regeneration of the city centre, in particular the sites identified in the City Centre Local Area Plan, and to protect and promote the city centre as the commercial and cultural focus for Kilkenny City & Environs.	S1		CH1 CH2				
To advance the redevelopment of the Bateman Quay site in accordance with the principles of the City Centre Local Area Plan.			M1 CH1 CH2	√			
To provide for the development of sustainable communities through the preparation of Local Area Plans for the expansion of the City & Environs.	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1		M1 CH1 CH2				
To promote Western Environs Local Area Plan and the Loughmacask Local Area Plan areas as major new neighbourhoods for the expansion of Kilkenny City & Environs.	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1		M1 CH1 CH2				
To make provision for a hierarchy of parks, open spaces and outdoor recreation areas and to use the river corridors of the River Nore, Breaghagh and Poccocke to provide open space for the City & Environs.	B1 B2 B3 W1 A1 L1						
<b>Phasing Action</b>							
To prepare Local Area Plans for the areas of planned expansion as identified over the lifetime of this Plan.	S2			√			

## 8.3 Housing and 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	<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>Housing Strategy</b>						
It is an objective of the Councils to implement the housing strategy contained in Appendix B of the Development Plan.				✓		
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.	M1					
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.				✓		
To encourage economy and efficiency in the use of land and services.	M1					
To promote a high standard of architecture in the siting and design of new housing developments.	CH1					
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.	B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1					
To assist and facilitate state and community bodies in the development of a Traveller horse project in the county.						✓
<b>Residential Development</b>						
To strictly resist the change of use of residential units in the designated 'Housing Protection Areas'.						✓
Emphasise quality, innovation and a design-led approach in all housing development with proposals appropriate to each site and location.	CH1					
<b>Community Facilities</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					
<b>Education</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.						✓

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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 Councils 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.						✓
<b>Social Capital</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 city'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 city.						✓
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 city.						✓
To promote the development of social capital by providing opportunities for interaction, participation and the co-ordinated provision of public services.						✓
<b>RAPID Programme</b>						
To implement the RAPID Strategic Plan 2006-2013 in conjunction with the local communities.						✓
Action: To provide two multi-purpose play areas in Garringreen and Newpark Close during the lifetime of this plan.						✓
Action: To extend the Hebron Park community facility in the Eastern Environs						✓
<b>Library Service</b>						
To continue to improve the library service for all.						✓
Action: To provide a new Library for the City to be located at County Hall, which will replace the existing Carnegie Library.						✓
<b>Health</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 City and Environs.						✓
To co-ordinate with the Health Service Executive – South Eastern Area and other interested parties in the preparation of a Masterplan for the grounds of St Canice's hospital in order to determine the optimal land uses for the area.						✓
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.						✓



## 8.4 Economic 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>Education</b>						
To facilitate and promote the development of the existing 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 which would include within it a creative academy.					✓	
To develop a quality built environment to attract and sustain enterprise and employment.			CH1 CH2			
To strengthen the retail position of the city and to maintain a healthy city centre.						✓
To provide for a wide range of development opportunities in the City & Environs so as to foster a balanced economic structure.						✓
To assist and support the development of the most up to date telecommunications and broadband facilities for the City & Environs.				✓		
To support Enterprise Ireland, Kilkenny County Development Board, Leader and relevant community support groups/agencies such as Kilkenny Chamber of Commerce and Industry in the promotion of economic development and indigenous enterprise.						✓
To support I.D.A. Ireland in the attraction of high value added manufacturing sectors and internationally traded sectors into Kilkenny.						✓
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		B3 S1 W1 W2 CH1 L1			
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.						✓
<b>Offices</b>						
To facilitate and encourage retail office development in the city centre and at District centres and Neighbourhood centres where the scale is compatible with the local service function.			✓			
To allow general office development outside the city centre area on suitable zoned lands subject to a sequential testing of the proposal.			✓			
To allow general office development outside the city centre area on suitable zoned lands subject to a sequential testing of the proposal.			✓			
<b>Retail Strategy</b>						
Over time, but unlikely to be in the timescale of this 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					
Relocation and upgrading of existing operations should be encouraged						✓
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.						✓
No further bulky goods floorspace retail warehousing parks will granted in and around the City & Environs due to constraints on the expenditure capacity for additional comparison floorspace over the period 2008 – 2014. (D218)						✓

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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>Specific Policies and Proposals</b>						
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.				✓		
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.			<b>B3 W1 W2 M1 CH1</b>			
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.				✓		
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.						✓
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.				✓		

## 8.5 Recreation, Tourism and the Arts

	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
<b>Recreation</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.				✓		
Kilkenny County and Borough Councils will seek to develop a strategic approach to the development of open space, amenity and recreation provision throughout Kilkenny City and County as outlined in the Kilkenny Open Space, Sports and Recreation Study.				✓		
It will be Councils' policy to maximise the use of resources.				✓		
It will be the policy of the Councils to co-operate with local development organisations, community groups, the County Kilkenny Vocational Educational Committee, and others in the development of recreational facilities throughout the county and to enter into joint venture arrangements where appropriate for the provision of such facilities.						✓

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

Action: Complete the development of the new swimming pool which incorporates other sports and leisure facilities at Scanlon Park.					✓
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.					✓
It is the policy of the County Council to promote the natural amenity potential of the River Nore in order to facilitate the development of amenity, recreational, ecological and tourism benefits for the city and region generally. The River Nore has considerable potential both waterside and landside to be used as recreational asset for the city, the county and the region as a whole.					✓
Action: Complete the River Nore Linear Park within the lifetime of the Plan.	<b>B2 B3 W1</b>				
Action: Create access points to the River Nore Linear Park as opportunities arise.			✓		
To seek the establishment of public parks along the Poccocke and Breagagh Rivers.	<b>B3 W1</b>				
Action: Develop a playing pitch and other recreational/community facility at the Johnswell Road Amenity Area					✓
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.					✓
Action: Develop a playground at Newpark Close.					✓
Action: Advance the planning for the provision of playground facilities at the Scouts Den and Loughboy Park.					✓
Action: To undertake a mapping exercise that identifies existing play services, facilities and amenities as well as highlights gaps in these areas across the county.					✓
Require the provision of appropriately located and designed open space, recreational and amenity areas in considering applications for new development.					✓
Ensure that new open space has good pedestrian, cyclist and disabled access.					✓
Make existing areas of open space as user-friendly as possible.					✓
Protect and improve the natural amenity potential and accessibility of the River Nore.	<b>B1 B2 B3</b>				
Protect and improve access to the River Nore without compromising the quality and setting of the river.	<b>B1 B2 B3 W1 L1</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 which will be strategically linked in a series of walks.	<b>B3 W1</b>				
Impose a development levy to provide walking amenities and facilities					✓
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>				
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 Failte Ireland's Strategy for the Development of Irish Cycle Tourism, South East Regional Report			✓		
Action: 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.					✓
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>				
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.					✓

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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.						✓
Action: 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						✓
Action: To develop a regional park facility along the Breaghagh River valley in partnership with the voluntary and community groups and the private sector.	<b>B3</b>					
Action: Create access points to the River Nore Linear Park as opportunities arise. (In particular at RA1 on zoning objectives map but also other locations)						✓
Action: Develop a playing pitch and other recreational/community facility at the Johnswell Road Amenity Area.				✓		
Action: Support other local communities in the provision of similar facilities.				✓		
Action: Undertake a survey of existing rights of way in the City & Environs and establish a register within two years of the adoption of the plan						
<b>Tourism</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.					✓	
To encourage and support increased coordination, cohesion and linkages between agencies such as Fáilte Ireland South East, Kilkenny Borough and County Councils 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 Fáilte 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 integrated regional approach taken by Fáilte Ireland and the South East Region Tourism body and Kilkenny Tourism to raise the profile of the South East as a tourism destination.						✓
Continue to support the activities of organisations such as Fáilte Ireland, S.E.R.T., BNS LEADER, Kilkenny Tourism and local development groups in the promotion and development of Kilkenny City and County as a tourist destination.						✓
Promote and encourage tourism development which is based on and reflects the characteristics and distinctive elements of the City's history, culture and environment;				✓		
To minimise the negative impacts that Tourism has on the growth of the city;				✓		
To promote and encourage the sustainable and well planned growth of the tourism industry in Kilkenny City;						✓
To promote and encourage an integrated transport system within the city and to and from the City and Environs to facilitate improved access;	<b>A1</b>					
Encourage the provision of indoor and activities based tourism facilities and events which extend the tourism season.						✓
Support the marketing of Kilkenny through the initiatives of the Kilkenny Marketing Strategy Group and Kilkenny Tourism.						✓
To promote Kilkenny City and Environs as a designated conference centre in the Southeast Region and to develop a suitable facility for conferences within the City and Environs.						✓
To develop a bus park facility						
Action: To develop and implement an integrated and appropriate signage strategy for Kilkenny City & County in consultation with all relevant stakeholders.				✓		
Encourage the clustering of tourism products to increase linkages within and reduce leakage from, the local economy.						✓
Support the implementation of the Kilkenny Tourism & Development Strategy 2006 – 2011.				✓		
Encourage and promote cycling-based tourism in the city and county and to support Fáilte Ireland's Strategy for the	<b>A1</b>		<b>A1</b>			

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

Development of Irish Cycle Tourism, South East Regional Report.						
<b>The Arts / Cultural Development</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.						✓
To identify a Cultural/Artistic quarter for the City and to ensure the provision of appropriate linking infrastructure, including signage, pedestrian routes and heritage trails, to ensure that cultural/Artistic buildings are linked to one another and to the wider public realm as part of a coherent spatial structure.				✓		

## 8.6 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	<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
<b>Introduction</b>						
To prepare and implement, in partnership with the Kilkenny Heritage Forum and relevant stakeholders, a County Heritage Plan and County Biodiversity Action Plan.	<b>B1 B2 B3</b>					
To support and facilitate the Kilkenny Heritage Forum	<b>B1 B2 B3</b>					
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.	<b>B1 B2 B3</b>					
<b>Public Spaces</b>						
To protect, enhance, improve, extend and where appropriate create new public/civic spaces throughout the city.	<b>B3</b>					
To maintain important historic details within the civic spaces such as historic paving, cobblestones, post boxes, spur stones etc.	<b>CH2</b>					
To reduce the impact of traffic congestion in the historic centre by traffic calming measures, more efficient signage and pedestrianisation.	<b>A1</b>					
To conserve and enhance biodiversity in new and existing civic spaces.	<b>B3</b>					
To ensure the avoidance of visual clutter when introducing street signage and new street furniture.	<b>CH2 L1</b>					
<b>Views and Prospects</b>						
To protect views and prospects identified on Map 7.1 by requiring new development or extensions to existing development to be designed and located so as to minimise the interruption of these views.	<b>L1</b>		<b>S1</b>	✓		
To encourage street layouts in newly developed areas which create new vistas to existing and new landmarks, in particular within the Western Environs and the Loughmacask Local Area Plan lands.				✓		
<b>City Presentation and Maintenance</b>						
It is the intention of Kilkenny Borough Council and Kilkenny County Council to work closely with the "Keep Kilkenny Beautiful" Committee and other relevant organisations, community groups, business and private interests to maintain the traditional high standards in this regard.						✓
<b>Natural Heritage and Biodiversity</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	<b>B1 B2</b>					



Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

this plan.						
<b>Designated Natural Heritage Sites of International and National Importance</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.	<b>B1 B2</b>			✓		
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.	<b>B1 B2</b>			✓		
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</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.	<b>B1 B2</b>					
Action: To provide Supplementary Planning Guidance, in relation to conserving and enhancing biodiversity in the context of development.	<b>B1 B2</b>					
<b>Protected Species</b>						
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</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</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</b>					
<b>Nature Conservation Outside of Designated Areas</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.	<b>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</b>					
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 compensatory measures are put in place, to conserve and enhance biodiversity and landscape character.	<b>B3</b>					
<b>Local Biodiversity Action Plan</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 HH1 W1 W2 L1</b>					
Integrate bio-diversity considerations into Council plans, programmes and activities.	<b>B1 B2 B3 HH1 W1 W2 L1</b>					
<b>Historic Gardens and Designed Landscapes</b>						
Discourage development that would lead to a loss of, or cause damage to, the character, the principal components of, or the setting gardens designed landscapes of special historic interest.	<b>B3 L1</b>					
Preserve, protect and where necessary enhance, heritage varieties of plants and trees that form part of the local/regional biodiversity resource, and that contribute to local identity.	<b>B3 L1</b>					
To continue to assist in the implementation and management of the recreation of the medieval garden at Rothe House, as part of the Rothe House Conservation Plan.	<b>B3 L1</b>					
<b>Inland Waters, Rivers, Streams and Wetlands</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 W1 L1</b>					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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.	<b>B3 W1 L1</b>					
Protect items of architectural heritage and industrial archaeological interest associated with waterways corridors.	<b>CH1 CH2</b>					
To consult with the Southern Regional Fisheries Board and the National Parks and Wildlife Service prior to undertaking, approving or authorising any works or development which may have an impact on rivers, streams and waterways.	<b>B3 W1</b>					
<b>County Geological Sites &amp; Geological Heritage Areas</b>						
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</b>					
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.	<b>B1 B2</b>					
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.	<b>B1 B2</b>					
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>B1 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.	<b>B1 B2</b>					
<b>Woodlands, Trees and Hedgerows</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.	<b>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.	<b>B3 L1</b>					
To conserve important trees, groups of trees or woodlands, using Tree Preservation Orders, as appropriate.	<b>B3 L1</b>					
In partnership with the Forest Service, to provide guidance to developers and others on requirements and procedures in relation to tree felling.	<b>B3 L1</b>					
Have regard to sites of significance identified in the Kilkenny Woodland Survey 1997 in the assessment of planning applications.	<b>B3 L1</b>					
Have regard to, and seek the conservation of, the trees of County Kilkenny identified in the Tree Register of Ireland.	<b>B3 L1</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>					
Seek the retention of hedgerows, and other distinctive boundary treatment such as stone walls, when undertaking, authorising or approving development.	<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, as appropriate.	<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>					
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>		<b>L1</b>			
The Councils 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 Council property.	<b>B3 L1</b>					
Seek the conservation of trees of cultural importance e.g mass bushes, rag bushes and other trees marking areas of cultural significance	<b>B3 L1 CH2</b>					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

Action: To carry out surveys of significant trees and hedgerows in the county during the lifetime of this plan, as appropriate and feasible.				✓		
Action: Investigate the possibility of updating the Woodland Survey of Kilkenny, in partnership with relevant stakeholders.				✓		
<b>Archaeology</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			
To ensure the preservation in-situ, or preservation by record of: The archaeological monuments included in the record of monuments and places as established under section 12 of the National monuments (Amendment Act, 1994); Any other sites and features of historical or archaeological interest; Any subsurface archaeological features that may be discovered during the course of infrastructural/development works.	CH1		S1			
Provide guidance to developers and property owners regarding the archaeological implications of a proposed development.	CH1					
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.	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.	CH1					
To ensure the protection of archaeological material in situ by ensuring that only minimal impact on archaeological layers is allowed.	CH1		S1			
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					
To encourage the dissemination of the results of archaeological excavation in a timely and appropriate manner.	CH1					
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					
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 city. The Council will also seek the preservation, maintenance and improvement of all existing right of ways to such areas where appropriate.				✓		
To assist in the implementation of the conservation plans for the City Walls, Rothe House and St Mary's Church and Graveyard.	CH1					
<b>Historic Gardens</b>						
Conserve and protect historic graveyards and churches within Kilkenny and to encourage their maintenance in accordance with conservation principles and as resources allow.	CH1 CH2		S1			
To continue to support and assist communities in the care and conservation of historic graveyards through its Historic Graveyards Grants Scheme.	CH1 CH2					
To preserve, protect and where necessary enhance, significant heritage objects such as mass rocks, holy wells and/or other significant cultural features that form part of the cultural heritage of the City and Environs.	CH1 CH2		S1			
<b>Architecture</b>						
To ensure the protection of the architectural heritage of Kilkenny City & Environs 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			
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.	CH2		S1			
To promote principles of best practice in conservation in terms of use of appropriate materials and repair techniques through the administration of the Conservation Grants Scheme funded by The Department of the Environment Heritage and Local Government.	CH2					
To ensure the protection of the architectural heritage through promoting the importance of regular maintenance of structures contained within the Record of Protected Structures.	CH2					
To provide assistance to owners of protected structures in undertaking essential repairs and maintenance by the provision of relevant information.	CH2					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

To 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		S1			
To encourage the sympathetic retention, reuse and rehabilitation of Protected Structures and their setting	CH2		S1			
To protect elements of designed landscapes of special interest located within the attendant grounds of Protected Structures, including boundary features.	CH2 L1		S1			
To require an architectural impact assessment/conservation method statement for developments within the grounds of country house estates which are Protected Structures.	CH2					
Action: To respond to the Ministerial recommendation to include in the Record of Protected Structures, structures which have been identified as being of Regional, National or International significance in the National Inventory of Architectural Heritage survey of the city and county published in 2006. To carry out a review of the Record of Protected Structures for the functional area of Kilkenny City and Environs.	CH2		S1			
<b>Architectural Conservation Areas</b>						
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			
To have regard to the Architectural Heritage Protection Guidelines, 2004 issued by the Department of the Environment, Heritage and Local Government when assessing proposals for development affecting an ACA.	CH2		S1			
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			
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, shop fronts and pub fronts 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 fascias constructed in aluminium or uPVC are not introduced to buildings within an ACA.	CH2					
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 special 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 all historic shopfronts and pub fronts. Where replacement is necessary, to encourage the introduction of shop fronts and pub fronts of contemporary high quality design and materials into the ACA.	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		S1			
<i>City Centre Architectural Conservation Area</i> To retain the existing scale of building heights of three and four storey buildings. To limit large scale developments within the historic centre which may necessitate the assimilation of smaller historic building plots. To encourage the renovation and re-use of any vacant or derelict buildings. To retain the medieval street pattern. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To protect the tight urban grain and rhythm of existing streetscapes To encourage well presented ground floor spaces and facades and to avoid pastiche shop fronts and pub fronts. To control the size, number and composition of advertisements on facades to prevent visual clutter in the main streets. To control lighting and the colour of lighting on the external façade of buildings. To promote timber painted signage and to prevent plastic and neon signs. To facilitate the removal of overhead cables throughout the ACA. To support the implementation of the St. Mary's Church and Graveyard Conservation Plan. To support the implementation of the Rothe House Conservation Plan.	CH2		S1			

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

<p>To support the implementation of the Kilkenny City Walls Conservation Plan. To improve the visual appearance of the car parking area at the Market yard, and ensure a high standard of architectural design for any development at Bateman Quay. To ensure pedestrian permeability is paramount in any future redevelopment of Bateman Quay. To ensure a high standard of paving and street furniture on High Street and St. Kieran Street following pedestrianisation.</p>						
<p><i>Kilkenny Castle Architectural Conservation Area</i> To protect the historic and architectural character of the Castle and its unique setting. To enhance and reinstate the character of The Parade as an important historic civic space by implementing appropriate design and uses, an objective of the City Centre Local Area Plan. To protect the natural amenity of the Castle Park as an important recreational area and wildlife habitat. To protect the structures of Ormonde Mill and its setting on the bank of the River Nore. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To protect the special low-density residential character of the Castle Gardens residential area. To ensure appropriate uses for the buildings on The Parade, which will not detract from the civic character of the area.</p>	CH2		S1			
<p><i>St. Canice's Architectural Conservation Area</i> To protect the historic and architectural character of St. Canice's Cathedral and its unique setting. To protect the grouping of the Cathedral, Library, Deanery and other adjacent buildings. To respect and retain established building lines. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To enhance the character of Vicar Street and Troy's Lane. To seek the conservation of St. Francis Abbey and its setting. To ensure that any development occurring along the River Nore will be sensitive in its design and mindful of its proximity to the river. To facilitate the upgrading and visual improvement of the Classic Furniture site on Green Street. To facilitate the restoration of the Brian Stone building located on Green Street. To protect the character and setting of the residential terraces of Thomas Square and Troys Gate. Any new roads in this area should be designed in a manner so as not to detract from the special character of the area, and should be sensitive to the existing scale of development within the area.</p>	CH2		S1			
<p><i>John Street Architectural Conservation Area</i> To encourage well presented ground floor spaces. To control the size, number and composition of advertisements on facades to prevent visual clutter in the main streets. To control lighting and the colour of lighting on the external façade of buildings. To promote timber painted signage and to prevent plastic and neon signs. To reduce advertisement on facades. To encourage the renovation and re-use of any vacant or derelict buildings. To protect historic plot sizes along Johns Street Upper and Lower and to avoid the amalgamation of sites for new buildings. To avoid pastiche shopfronts and pubfronts. To facilitate the removal of overhead cables throughout the ACA. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To protect St. John's Church and its setting. To ensure that any new developments to the south of Maudlin Street are sensitive in scale to the existing residential buildings. To ensure any future re-development of the petrol station and adjoining sites on the Dublin Road is sensitive in scale to the surrounding buildings. To expand the role of County Hall as a civic amenity for Kilkenny through the creation of a new park and investigate the creation of a new urban square to Johns Street, in accordance with the Kilkenny City Centre Local Area Plan. To protect residential uses along Maudlin Street.</p>	CH2		S1			



Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

To protect the setting of St. John's Place, including their front gardens and railings, and to facilitate the restoration of these houses. To consider the balance of uses on John Street when dealing with change of use planning applications.					
<i>Patrick Street Architectural Conservation Area</i> To enhance the character of Ormonde Road and College Road as an approach to the city centre. To protect important protected structure such as St. Patrick's Church, St. Kieran's College, the former Presbyterian Church, the City Vocational School and Talbots Castle. To ensure any future developments along Jacob Street adhere to a formal building line and are predominantly residential in nature. To protect the visual relationship between Butler House, the Design Centre and Kilkenny Castle. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To avoid backland development which would impact negatively on the character of the area.	CH2		S1		
<i>Michael Street/Wolfe Tone Street ACA</i> To protect and enhance existing residential uses and to avoid change of use of habitable dwellings to commercial purposes. Bed and Breakfast developments will be considered on their own merits. To avoid the demolition of existing habitable dwellings, and promote restoration of derelict buildings. To protect the amenity along the River Nore as an environmental, recreational and residential area. To ensure a high standard of architectural design to any development to the rear of Michael Street and Wolfe Tone Street, and ensure it is sensitive in scale and materials to the existing area. To protect the setting of dwellings at Johns Quay Terrace, including retention of all front railings and gardens. Any proposals for new development along the River should be of a contemporary design and address its waterfront location.	CH2		S1		
<i>St. Mary's Architectural Conservation Area</i> To protect and enhance the setting of St. Mary's Cathedral. To protect the residential character, setting and appearance of dwellings on Parnell Street, James' Green, Kickham Street, Dominick Street, Stephens Street, Rothe Terrace and the Kennyswell Road. To protect Kenny's Well and its setting and adjacent open space along the Breagagh River. To protect and retain the historic integrity of the city walls, in accordance with the Kilkenny City Walls Conservation Plan (Heritage Council, 2005). To protect the visual amenity of the Breagagh River, and ensure that any future developments adjacent to it address its riverside location.	CH2		S1		
<i>Lacken Architectural Conservation Area</i> To protect the character of the area, in particular the setting of substantial houses in their own grounds which contain mature trees. To protect the industrial archaeology of the Lacken Corn Mill and its setting on the banks of the River Nore, adjacent to the Dublin Road.	CH2		S1		
<i>Talbotsinch Architectural Conservation Area</i> To protect the character of Talbotsinch Village as a model Village. To protect and enhance the architectural features of the buildings. To protect and enhance the grouping of buildings and their setting. To review the boundaries of the Talbotsinch ACA during the lifetime of the plan.	CH2		S1		
<b>The Vernacular Built Heritage</b>	CH2		S1		
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		
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				
Action: 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		

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

<b>Floodlighting</b>						
To require an appropriate assessment of the potential impacts of proposals to floodlight buildings and structures.	L1 CH2			✓		
To ensure the protection of the special character and setting of protected structures and of an ACA when considering proposals for floodlighting.	L1 CH2					
To ensure the avoidance of the spillage of potential obtrusive light to adjacent areas and to avoid unnecessary over lighting.	L1 CH2			✓		
To provide guidance to developers and others in relation to floodlighting.	L1 CH2					
<b>Place Names</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.						✓
Action: To provide guidance to developers and others in relation to naming of new developments						✓

## 8.7 Infrastructure and Environment

	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>Climate Change</b>						
To prepare a County Climate Change Action Plan over the course of this Development Plan.						✓
<b>Roads</b>						
It is the objective of the Kilkenny Borough Council and the Kilkenny County Council to: <ol style="list-style-type: none"> <li>1. Reserve free from development the line of the proposed Central Access Scheme and to complete the Central Access Scheme within the plan period. (R1 on the zoning objectives map)</li> <li>2. Reserve free from development the proposed line of the western by-pass for the city from the Castlecomer Road to the Callan Road including for a river crossing. (R2 on the zoning objectives map)</li> <li>3. Complete the N10 Ring Road Improvement Scheme from the Dublin Road Roundabout to the Waterford Road Roundabout. (R3 on the zoning objectives map)</li> <li>4. Complete the N10 Road Improvement Scheme from Dublin Road Roundabout to Leggettsrath Roundabout (R4 on the zoning objectives map)</li> <li>5. Complete the R697 Kells Road Improvement Scheme from Upper Patrick St. to the Kells Road Roundabout (R5 on the zoning objectives map)</li> <li>6. Provide a link road from the roundabout at Springhill on the N10 to the Outrath Road (R6 on objectives map).</li> <li>7. The development of the lands located at R7 (known as the Murphy machinery lands) to be dependent on access from the link road from the N10 to the Outrath road.</li> <li>8. Reserve free from development the proposed line of a new road link from the Callan Road to the Waterford Road roundabout. (R8 on the zoning objectives map).</li> <li>9. Provide a second entrance to the Hebron Industrial Estate from the Hebron Road (R9 on zoning objectives map).</li> <li>10. Continue to implement the recommendations of the Cycle Routes Study for the City &amp; Environs as resources and finance permit.</li> <li>11. Complete the Golf Links Road, New Orchard Road and Lovers Lane Improvement Scheme</li> </ol>				✓		

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

<p>12. Complete the pedestrianisation of Kieran St. (from Parliament Street to Rose Inn Street);</p> <p>13. Pedestrianise High Street from Friary Street junction to its junction with Kieran Street;</p> <p>14. Implement a traffic management scheme for Upper New Street, Jacob Street and Upper Patrick Street.</p> <p>15. Prepare and implement traffic management and calming schemes for the City &amp; Environs as the need arises.</p> <p>16. Complete a traffic calming scheme for the Castlecomer Road.</p> <p>17. Provide appropriately designed pedestrian crossing points at all schools in the City &amp; Environs within the Plan period.</p> <p>18. Promote the diversion of heavy through traffic via the eastern by-pass;</p> <p>19. Introduce charges for on-street parking within the city centre;</p> <p>20. Provide suitable arrangements for coach parking within the City and Environs;</p> <p>21. Facilitate the provision of approved bus stops and shelters within the City and Environs as the need arises;</p> <p>22. Provide a pedestrian bridge over the Nore at the Carnegie Library.</p> <p>23. Where roads infrastructure is provided to accommodate future development, to require contributions from developers who benefit from such works.</p> <p>24. Ensure that adequate footpaths, public lighting and cycle paths are provided in newly developing areas.</p> <p>25. Ensure that all new footpaths are dished at junctions wherever feasible and that tactile surfaces are used where appropriate to assist the visually impaired.</p> <p>26. Complete the John's Bridge Rehabilitation Scheme</p> <p>27. Complete the Ballybought Street Improvement Scheme</p> <p>28. Complete the Glendine Road Improvement Scheme</p> <p>29. Complete the Newpark Drive Improvement Scheme</p>						
To complete a mobility and traffic management plan dealing with issues such as modal shift accessibility.	<b>A1</b>			✓		
Implement the recommendations of the Kilkenny City & Environs Cycle Routes Study as resources and finances permit as part of the transport strategy for the City & Environs.				✓		
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>					
Seek the provision of well located car parking spaces, multi storey car parking being the preferred option and to ensure that adequate and convenient car parking spaces are provided;				✓		
To ensure, through price control measures, that the city centre car parking spaces are for short stay purposes				✓		
To provide and control the development of parking for both long and short term parking demand that optimises the use of all spaces.				✓		
It is the policy of the Borough Council to prepare a comprehensive Directional and Explanatory Signage Scheme for Kilkenny City during the lifetime of this Plan, in line with objectives in the Kilkenny City Local Area Plan.						✓
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.				✓		
To initiate the establishment of a Transport Forum to oversee transport policy for the city and county, in conjunction with the County Development Board and/or Transport SPC.						✓
To facilitate the provision of Bus shelters as appropriate.						✓
Seek to implement the South-East Regional Passenger Transport Strategy 2002-2012.						
<b>Airports</b>						
Support the continued development of airport facilities and services at the South East Regional Airport and Kilkenny Aerodrome to the benefit of industrial commercial and tourism development.				✓		
Support the improvement of transport linkages and services between the airport, and the entire South-East Region, i.e. roads and public transport				✓		
Facilitate the future development of Kilkenny aerodrome by reserving air corridors as necessary.						✓
<b>Renewable Energy</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.						✓

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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.						✓
<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.						✓
Facilitate the provision of an integrated waste facility incorporating thermal treatment and energy and associated necessary infrastructure in the region.						✓
<b>Sustainability and Energy Efficiency in Buildings</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.						✓
<b>Telecommunications</b>						
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.			L1			
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.			L1			
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.	L1					
Have regard to the Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities published by the Department of the Environment in July 1996.				✓		
Ensure the sharing of masts and support structures where this is feasible.				✓		
<b>Air Quality</b>						
Implement the provisions of national policy and air pollution legislation, in conjunction with other agencies as appropriate.	HH1 A1					
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.	HH1					
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.	HH1 A1					
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.	HH1 A1					
<b>Water Quality Policy</b>						
To actively participate in the implementation of the Water Framework Directive	B1 B2 B3 HH1 W1 W2 L1					
To jointly with other participating 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 L1					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

To implement the South Eastern River Basin Management Plan	<b>B1 B2 B3 HH1 W1 W2 L1</b>					
To increase public awareness of water quality issues and the measures required to protect and where required, improve the quality of all waters				✓		
To take account of the findings of the National Programs of Measures Studies being developed for the River Basin Management Plans	<b>B1 B2 B3 HH1 W1 W2 L1</b>					
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.	<b>B1 B2 B3 HH1 W1 W2</b>					
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.	<b>B1 B2 B3 HH1 W1 W2</b>					
Ensure the protection of sources of potable water and will continue the process of monitoring the quality of water resources.	<b>HH1 W1 W2</b>					
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 adequate, and that effluents are treated and discharged in a satisfactory manner.	<b>B1 B2 B3 HH1 W1 W2</b>					
Prevent pollution of water by means of development management and enforcement measures.	<b>B1 B2 B3 HH1 W1 W2</b>					
Implement the measures quoted under the Water Quality Standards Reports for Phosphorous and Dangerous Substances Regulations.	<b>HH1 W1 W2</b>					
To implement the Water Quality Management Plans for the Barrow, Nore and Suir Rivers pending adoption of the South East River Basin Management Plan	<b>B1 B2 B3 HH1 W1 L1</b>					
<b>Water Supply</b>						
Ensure an adequate, sustainable and economic supply of good quality water in sufficient quantities for the domestic, commercial and industrial needs of Kilkenny City and Environs;						✓
Conserve water supplies within the existing supply system and to eliminate leakage at all available opportunities;						✓
To protect the sources of water supply from polluting activities;	<b>W1 W2</b>					
Implement the Water Quality Management Plan for the River Nore;	<b>W1 W2</b>					
To ensure that there is sufficient spare capacity in the water supply network to cater for all anticipated requirements;						✓
Action: Continue the Kilkenny City and Environs Water Conservation Scheme to reduce unaccounted for water from 45% to 20%						✓
Action: Provide and plan for the Kilkenny City Regional Water supply scheme				✓		
<b>Waste Water Services</b>						
Prioritise the upgrading of the Purcellsinch wastewater treatment plant.	<b>M1</b>					
Provide for the necessary drainage facilities to serve the needs of all development within the City and Environs and to prevent pollution;	<b>M1</b>					
Separate the disposal of foul and surface water effluents through the provision of separate sewerage networks;	<b>M1</b>					
To maximise the benefit from capital expenditure by ensuring the economic use of existing and planned waste water treatment facilities;	<b>M1</b>					
Meet in full the requirements of the E.U. Urban Waste Water Treatment Directive.	<b>M1</b>					
Implement the sludge management plan for the city and county	<b>M1</b>					
<b>Litter Management Plan Policy</b>						
Prepare and implement a Litter Management Plan and carry out its statutory functions in relation to the Litter Pollution Act 1997.						✓



Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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 city.						✓
Continue in its partnership approach with the Keep Kilkenny Beautiful Committee, community groups, 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 city						✓
<b>Waste Management</b>						
To reduce to a minimum the cost of recycling to the consumer in Kilkenny City and Environs.						
<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.	HH1					
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						✓
<b>Flood Management</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					
<b>Control of Major Accident Hazards Directive (Seveso II Directive)</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					
<b>Contaminated Land</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.				✓		
Action: Complete a register of contaminated sites within the county during the lifetime of this plan.	HH1					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

<b>Fire Service</b>						
To upgrade and replace fire stations and to replace and provide new equipment and vehicles as the need arises.						✓

## 8.8 Location and Pattern of 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>Location and Pattern of Development - Development Strategy</b>						
Action: To prepare an Urban Design Framework Plan for the Hebron Road as the main entrance corridor to the city.	<b>CH2</b>					
<b>Development Guidelines - Urban Design</b>						
It is the policy of the Councils to encourage the establishment and maintenance of high quality sustainable residential communities.	<b>CH2</b>					
<b>Development Guidelines - Residential Development Standards</b>						
It is the policy of the Planning Authority to encourage the well-planned and economic provision of residential accommodation on serviced lands.	<b>M1</b>		<b>B1 B2 B3 W1 W2 CH1 CH2 L1</b>			
<b>Development Guidelines - Open Space Requirements</b>						
To secure a high quality of design layout and landscaping in all new residential developments consistent with the Residential Density Guidelines.	<b>L1</b>					
<b>Public House and Entertainment Use</b>						
To control the location, size and activities of entertainment uses that are likely to attract significant numbers of people in particular public houses with large floor areas with or without other entertainment and night clubs, in order to safeguard the general amenity, environmental quality, residential amenity, character and function of the area. In applications for such developments the onus will be on the applicant to demonstrate that the proposed new entertainment use, or extension to existing use or variation in opening hours would not cause harm to general amenity, environmental quality, residential amenity or the established character and function of the area.	<b>CH2</b>					
<b>Roads Objectives</b>						
R1 – Reserve free from development the line of the proposed Inner Relief Road R2 – Reserve free from development the line of the proposed western by-pass R3 – To complete the N10 Road Improvement Scheme from Dublin Road Roundabout to Leggettsrath Roundabout To complete the N10 Ring Road Improvement Scheme from the Dublin Road Roundabout to the Waterford Road Roundabout. R4 – To complete the R697 Kells Road Improvement Scheme from Upper Patrick St. to the Kells Road Roundabout R5 – To provide a link road from the roundabout at Springhill on the N10 to the Outrath Road R6 – The development of the lands located at R6 (known as the Murphy machinery lands) to be dependent on access from the link road from the N9 to the Outrath road. R7 – Reserve free from development the proposed line of a new road link from the Callan Road to the Waterford Road roundabout. R8- To provide a second entrance to the Hebron Industrial estate from the Hebron Road.				✓		

## 8.9 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>Policy</b>						
It is the policy of the Councils to encourage the establishment and maintenance of high quality sustainable residential communities.	<b>B1 B2 B3 HH1 S1 W1 W2 A1 M1 CH1 CH2 L1</b>					
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>					
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 L1 HH1</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 Planning Authority to encourage the well-planned and economic provision of residential accommodation on serviced lands.	<b>HH1 W1 W2 M1</b>					
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.						✓
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. Where a proposed development is located in close proximity to an established park area or zoned open space this may be relaxed depending on the nature and quality of existing provision. This relaxation will only be considered where the development pays a financial contribution towards the improvement of the open space so as to improve its quality and carrying capacity.				✓		
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>					
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 Kilkenny City, it is the policy of the Planning Authority to encourage the maintenance of original shopfronts, or the reinstatement of traditional shopfronts 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>					

Environmental Report on the Strategic Environmental Assessment of  
the Kilkenny City and Environs Development Plan 2008-2014

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 Councils will endeavor 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 discourage new housing developments that include gated communities in their plans.						✓

## 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 CEDP.

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 Kilkenny County Development Plan Spatial Strategy (SS)

Mitigation measure SS as set out in the Kilkenny *County Development Plan SEA* Environmental Report identifies the Kilkenny Hub Corridor Impact Zone which has a significant potential to conflict with elevated densities of environmental sensitivities. In order to sustainably facilitate necessary development in this area the preparation of a Spatial Strategy to assist in the preparation of future development plans or local area plans in this area is recommended.

This strategy will help to mitigate against impacts arising as a result of implementation of the Kilkenny City and Environs Development Plan.

### 9.3 Subsidiary Plans (SP)

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

Policies should be amended where necessary to take 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 areas 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.

### 9.4 Mitigation Measures for Specific Environmental Topics

#### 9.4.1 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.

#### 9.4.2 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.

### **9.4.3 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.

### **9.4.4 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.

### **9.4.5 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 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.

#### **9.4.6 MM5: Archaeological Heritage**

It is considered that archaeological heritage within the City and Environs is sufficiently

protected by current designations and supporting policies within the CEDP.

#### **9.4.7 MM6: Architectural Heritage**

It is considered that architectural heritage within the City and Environs is sufficiently protected by current designations and supporting policies within the CEDP.

#### **9.4.8 MM7: Landscape**

It is considered that the landscape within the City and Environs is sufficiently protected by the designations of the various landscape components and by the policies within the CEDP relating to inter alia views and prospects.

## 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 City and Environs Development Plan (CEDP) 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 CEDP is achieving its environmental objectives and targets - measures which the CEDP 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 CEDP 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 Borough and County Councils 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 Kilkenny Borough and County Councils 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 W2 (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 City and Environs) 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 CEDP will be prepared to coincide with the Manager's report to the elected members on the progress achieved in securing CEDP 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 and Borough Councils are 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 CEDP.

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source
<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 CEDP</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 CEDP</p> <p>B3: Percentage loss of connectivity between areas of local biodiversity as a result of implementation of the CEDP – 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 CEDP</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 CEDP</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 CEDP</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 Borough and County Council, EPA, Health and Safety Authority</p>
<p><b>Soil</b></p>	<p>S1: Area of brownfield land developed over the plan period</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 CEDP) at the end of the CEDP lifespan</p>	<p>Development Management Process</p>



Environmental Component	Selected Indicator(s)	Selected Target(s)	Source
<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>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>W2: Compliance with Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC</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>
<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 City and Environs</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 City and Environs</p>	<p>CSO [As noted under Section 10.4, monitoring data may not be available for this indicator when the monitoring evaluation is being prepared].</p>
<b>Material Assets</b>	<p>M1: Number of new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CEDP</p>	<p>M1: No new developments granted permission which cannot be adequately served by a public waste water treatment plant over the lifetime of the CEDP</p>	<p>Development Management Process</p>

Environmental Component	Selected Indicator(s)	Selected Target(s)	Source
<b>Cultural Heritage</b>	<p>CH1: Number of unauthorised developments occurring which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - 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 CEDP 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 CEDP which result in full or partial loss to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant.</p> <p>CH2: No unauthorised developments occurring over the lifespan of the CEDP 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>
<b>Landscape</b>	<p>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 CEDP</p>	<p>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 CEDP</p>	<p>Development Management Process; Complaints received from statutory consultees</p>

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

## Appendix I Site Synopses

### Special Areas of Conservation

#### 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: *Neoascia 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 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 (*Orobanchae 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, Aughavau 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 Creadaan 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 (*Orobanchae hederaceae*) and Greater Broomrape (*Orobanchae 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 grise 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 daubentonii*), 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

## 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 (*Ricciocarpus 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 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, Portarlinton, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graigueamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrus. 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: *Neoascia 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 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 (*Orobancha rapumgenistae*) 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*, *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 (*Orobancha hederæ*) and Greater Broomrape (*Orobancha 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 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

#### **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 Popistrelle (*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

All site synopsis sourced from National Parks and Wildlife (various) *Site Synopses for Special Areas of Conservation and proposed Natural Heritage Areas* Dublin: Government of Ireland