

# Environmental Report (SEA) of Ferrybank Belview Local Area Plan 2017



Planning Department  
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## Non-technical Summary

### Section 1 Introduction and Terms of Reference

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

What is an SEA?

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

Why is it needed?

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

How does it work?

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

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

The ER contains the following information:

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

### What happens at the end of the process?

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

## Section 2 The Plan

### 2.1 Content of the Plan

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

1. Introduction & Strategic Context
2. Core Strategy & Zoning
3. Area identity
4. Economic Development and Retailing
5. Belview Port Area
6. Community and Housing
7. Heritage
8. Recreation, Tourism and the Arts
9. Infrastructure & Environment
10. Transport
11. Development Management
12. Implementation & Finance

### 2.2 Interactions with Relevant Policy, Plans or Programmes

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

- [National Climate Change Adaptation Framework](#)<sup>1</sup>
- [National Spatial Strategy \(NSS\)](#)<sup>2</sup>
- [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#)<sup>3</sup>
- [Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 \(2009\)](#)
- Ministerial Guidelines on [Architectural Heritage Protection](#), [Childcare Facilities](#), [Development Plans](#), [Landscapes](#), [The Planning System and Flood Risk Management](#), [Retail Planning](#), [Strategic Environmental Assessment](#), [Sustainable Residential Development in Urban Areas](#) and [Sustainable Rural Housing](#)
- [South East River Basin Management Plan](#)<sup>4</sup>
- Waterford Planning and Land Use Transportation Study (PLUTS)<sup>5</sup>
- [South East Regional Planning Guidelines](#)<sup>6</sup>
- [Waterford City Development Plan 2013-2019](#)
- [Kilkenny County Development Plan 2014-2020](#)

The Plan will set the strategic context for planning applications within the Plan area.

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

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

<sup>3</sup> Government of Ireland, [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#), 2012

<sup>4</sup> South Eastern River Basin District, [South East River Basin Management Plan](#), 2010

<sup>5</sup> Atkins, [Waterford Planning and Land Use Transportation Study 2004-2020](#), 2004

<sup>6</sup> South East Regional Authority, [Regional Planning Guidelines for the South East Region 2010-2022](#), 2010

## Section 3 The Environmental Baseline

### 3.1 Introduction

The environmental baseline of the plan area is described in this section. This baseline, together with the Strategic Environmental Objectives which are identified in Section 3.3, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Plan and to determine appropriate monitoring measures.

The environmental baseline is described in line with the legislative requirements encompassing the following components –

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

### 3.2 Evolution of Environment in the absence of a Plan

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

#### 1. Biodiversity, Flora and Fauna

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

#### 2. Population and Human Health

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

#### 3. Soil

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

#### 4. Water

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

5. Air

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

6. Climatic factors

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

7. Material Assets

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

8. Cultural Heritage (architectural and archaeological)

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

9. Landscape

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

**3.3 Strategic Environmental Objectives**

Strategic Environmental Objectives (SEOs) are measures against which the environmental effects of the Plan can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the Plan.

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

**Table NTS1 SEA Objectives**

Environmental Parameter	International, European, National policy documents/strategies/guidelines	No.	Objective (EPO)	Broad Planning Policy Objective (PPO)
Biodiversity, fauna and flora	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity <a href="#">Actions for</a>	B1	Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species	Protect designated sites (SACs & NHAs) and protected species from development. Identify locally important habitats for protection. Provide for green infrastructure.

	<a href="#">Biodiversity 2011-2016, Ireland's National Biodiversity Plan (2011)</a>		including ecological linkages/corridors.	Concentrate development in areas with least sensitivities.
Population and Human Health	Agenda 21 (1992) <a href="#">Our Sustainable Future: A framework for sustainable development for Ireland (2012)</a> The National Spatial Strategy (2002) <a href="#">Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009)</a>	P1	Improve people's quality of life based on sustainable high-quality residential, working and recreational environments and travel patterns.	Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, Regional Planning Guidelines and the County Development Plan 2014. Promote higher density residential development in suitable locations. Promote sustainable transport patterns through appropriate zoning and provision for public transport. Require appropriate levels of recreational areas with any residential application.
	Directive 2002/49/EC of 25 June 2002 relating to the assessment and management of environmental noise Directive 96/62/EC – Air Quality Framework Directive	P2	Minimise noise, vibration and emissions from traffic	Require noise controls with all relevant applications. Promote sustainable transport patterns through appropriate zoning and provision for public transport.
Soil	<a href="#">A Resource Opportunity, Waste Management Policy in Ireland</a> <sup>7</sup> .	S1	Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands.	Direct development to brownfield lands in preference to developing greenfield lands. Encourage rehabilitation of existing housing stock where appropriate.
		S2	Minimise the consumption of non-renewable sand, gravel and rock deposits	
		S3	Minimise the amount of waste to landfill	Provide appropriate waste disposal facilities, including for composting and recycling in all developments.

<sup>7</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

Water	<p>EU Water Framework Directive (2000/60/EC)  <a href="#">EU Directive on the assessment and management of flood risks</a> [2007/60/EC],  <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a> (2009)</p>	W1	Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.	<p>Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks.                      Provide sufficient capacity in water services to serve zoned land.                      Include Strategic Flood Risk Assessment as part of the Plan.</p>
		W2	Promote sustainable water use based on a long-term protection of available water resources.	
		W3	Reduce progressively discharges of polluting substances to waters	
		W4	To comply as appropriate with the provisions of <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a>	
Air	<p><a href="#">Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive</a> (2008/50/EC)</p>	A1	Reduce all forms of air pollution	<p>Promote energy efficient developments.                      Promote sustainable transport patterns through appropriate zoning and provision for public transport.</p>
Climatic factors	<p><a href="#">National Climate Change Adaptation Framework</a> (2012)</p>	C1	Reduce waste of energy, and maximise use of renewable energy sources	<p>Promote energy efficient developments.                      Promote sustainable transport patterns through appropriate zoning and provision for public transport.</p>
		C2	Minimise emissions of greenhouse gases to contribute to a reduction and avoidance of human-induced global climate change	
		C3	Reduce the need to travel	

		C4	Assess, plan and manage adaptation to climate change impacts	
Material Assets	<a href="#">Our Sustainable Future: A framework for sustainable development for Ireland</a> (2012)	M1	Make best of use of existing infrastructure and promote the sustainable development of new infrastructure.	Direct development to brownfield lands in preference to developing greenfield lands. Encourage rehabilitation of existing housing stock where appropriate.
Cultural Heritage (architectural and archaeological)	<a href="#">European Convention on the Protection of Archaeological Heritage</a> (1992) <a href="#">Framework and Principles for the Protection of the Archaeological Heritage</a> (1999) <a href="#">Architectural Heritage Protection Guidelines</a> (2004)	H1	Promote the protection and conservation of the cultural heritage, including architectural and archaeological heritage	To conserve and protect the archaeological heritage with regard to entries on the RMP. To conserve and protect the special interest and character of the architectural heritage with regard to the RPS and the NIAH.
Landscape	The European Convention on Landscape, 2000 <a href="#">A National Landscape Strategy for Ireland</a> <a href="#">Strategy Issues paper for consultation</a> (2011)	L1	Conserve and enhance valued natural and historic landscapes, their character and features within them.	Avoid the loss of designated views.

## Section 4 Alternative Scenarios

### 4.1 Description of the Alternative Plan Scenarios

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

#### Alternative 1: Continued consolidation

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

#### Alternative 2: Dispersed growth

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

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

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

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

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

## 4.2 Evaluation of Alternative Scenarios

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

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

#### Environmental impacts

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

#### Planning impacts

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

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

#### Environmental impacts

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

#### Planning impacts

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

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

#### Environmental impacts

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

#### Planning impacts

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

### 4.3 Selection of Preferred Alternative

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

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

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

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

### 4.4 Appropriate Assessment and Flood Risk Assessment

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

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

## Section 5 Mitigation and Monitoring Measures

### 5.1 Mitigation

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

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

### 5.2 Monitoring

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

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

## 1 Introduction

A review of the Ferrybank Belview Local Area Plan (LAP) (2009-2020) is being carried out by Kilkenny County Council. This Plan will cover the area of urban area of Ferrybank, which forms part of Waterford city, and also the Belview port area to the east. To satisfy the requirements of [European Directive 2001/42/EC](#)<sup>8</sup>, the Planning and Development (Strategic Environmental Assessment) (SEA) Regulations 2004 (as amended) require that an SEA is carried out on any Local Area Plan where the population (or target population) is more than 5,000 persons. The population of the built-up area of Ferrybank is estimated at over 5,246<sup>9</sup> therefore an SEA is required.

SEA is the formal, systematic evaluation of the likely significant effects of implementing the plan, before a decision is made. The process includes preparing an Environmental Report where the likely significant effects are identified and evaluated.

This report has been prepared in accordance with the [SEA Guidelines for Regional and Planning Authorities](#)<sup>10</sup>.

### 1.1 Report Structure

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

Requirements of <a href="#">SEA Directive</a>	Section of Environmental Report
1. an outline of the contents and main objectives of the plan and relationship with other relevant plans;	Chapter 2: Contents and Description of the Plan
2. the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;	Chapter 3: Current state of the environment
3. the environmental characteristics of areas likely to be significantly affected;	Chapter 3: Current state of the environment
4. any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive;	Chapter 3: Current state of the environment
5. the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any	Chapter 4: Policy objectives

<sup>8</sup> EU, [Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment](#), Article 1

<sup>9</sup> See Section 2.3 of the LAP

<sup>10</sup> [Implementation of SEA Directive \(2001/42/EC\): Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional and Planning Authorities](#) November 2004

environmental considerations have been taken into account during its preparation;

6. the likely significant effects<sup>11</sup> on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

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

8. an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;

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

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

Chapter 6: Likely significant effects on the environment

Chapter 7: Mitigation measures

Chapter 5: Assessment of Alternatives

Chapter 8: Development Plan Monitoring

Non-technical Summary

## 1.2 Methodology

### 1.2.1 Screening

Screening was not carried out, as SEA is mandatory for the preparation of this LAP.

### 1.2.2 Scoping

A brief scoping report was prepared in October 2014 in accordance with the [SEA Guidelines for Regional and Planning Authorities](#)<sup>12</sup>. The purpose of the scoping report was to ensure the identification of relevant environmental issues so they could be addressed appropriately in the Environmental Report. The scoping report also indicated the level of detail necessary for the SEA of the LAP.

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<sup>11</sup> These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.

<sup>12</sup> Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment, Guidelines for Regional and Planning Authorities November 2004

**1.2.2.1 Consultation**

In line with the Planning and Development (SEA) Regulations 2004 as amended<sup>13</sup>, the Environmental and Planning Authorities were given notice on the 25<sup>th</sup> September 2014 of the intention of Kilkenny County Council to carry out an environmental assessment.

A response was received from the EPA on the 29<sup>th</sup> September 2014, which included an SEA pack for all Local Authorities to incorporate in carrying out the Environmental Report. The letter listed general topics to be considered, covering issues such as water quality and flooding.

A response was received from the Department of Arts, Heritage and the Gaeltacht on the 24<sup>th</sup> October 2014 in relation to cultural heritage.

The comments from both bodies were incorporated within the Scoping Report and are taken into account in the content of this Environmental Report in accordance with the Regulations. (See Section 3.9 in relation to cultural heritage.)

**1.2.3 Public Consultation**

Public consultation regarding the Plan took place during two separate periods; February-March 2015 and March-April 2016.

The first period comprised a public meeting (held in conjunction with Waterford City and County Council) on the 18<sup>th</sup> February 2015 in Abbey College in Ferrybank, and also a pre-draft submissions period which ran from the 6<sup>th</sup> February until the 6<sup>th</sup> March 2015.

The second pre-draft submissions period ran from 18th March 2016 until 15th April, 2016.

Three submissions were received in relation to the SEA, from the EPA, ref. P1, the Dept. of Arts, Heritage and the Gaeltacht, ref. P2 and Louise Buggy, P27. These submissions were addressed in the Chief Executive’s Report, and the relevant extracts are summarised below.

Submission ref.	Summary	Chief Executive’s Opinion and Recommendation
P1 EPA	This submission relates to the notice for SEA Scoping, as sent to the EPA in September 2014. The submission sets out the key environmental issues to be taken into account in the preparation of the SEA and Plan. An SEA checklist is attached to assist in the preparation of the SEA and Plan.	These issues will be addressed herein.
P2 DAHG	This submission relates to the notice for SEA Scoping, as sent to the DAHG in September 2014. The submission requires that a detailed Cultural Heritage Section be included in the SEA to include	Cultural heritage section has been included.

<sup>13</sup> Planning and Development Strategic Environmental Assessment (Amendment) Regulations 2011 S.I. 201 of 2011

	assessing the management and protection of the terrestrial, coastal, intertidal and underwater archaeological resource.	
P27 Louise Buggy	<p>Seeks that the SEA cover the following:</p> <ul style="list-style-type: none"> <li>• Impacts on cSAC from the private effluent treatment plant at Christendom</li> <li>• Odour from the effluent and rendering plant</li> <li>• The option of decommissioning the private effluent treatment plant</li> </ul>	<p>The EPA license certain activities by means of IPC licenses. An IPC licence is a single integrated licence which covers all emissions from the facility and its environmental management. There are two IPC facilities operating in Christendom; license numbers P0040-01 and P0040-02 and P0205-01 and P0205-02, both named as Anglo Beef Processors Ireland trading as ABP Waterford. Monitoring of these licenses is the remit of the EPA and any queries or complaints in this regard must be addressed to the EPA. It is beyond the scope of this Strategic EA to examine the detail of current practices at existing, licensed facilities.</p>

#### 1.2.4 Environmental Baseline Data

The baseline data assists in assessing the current state of the environment, facilitating the identification, evaluation and subsequent monitoring of the effects of the plan.

Baseline data was collected based on the various broad environmental topics described in the [SEA Directive](#); i.e. biodiversity, population, human health, fauna, flora, soil, water, air, climate factors, material assets, cultural heritage including architectural and archaeological heritage and landscape. The Directive requires that information be focused upon relevant aspects of the environmental characteristics of the area likely to be significantly affected by the plan and the likely change, both positive and negative terms where applicable. The baseline data was collated from currently available, relevant data sources, as the [SEA Directive](#) does not require major new research to be carried out. Where deficiencies or gaps in the information were identified, this is noted.

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

#### 1.2.5 Selection of Strategic Environmental Objectives

The [Directive](#) requires that relevant environmental protection objectives (EPOs), established at international, EU or national level are identified and listed. The [Guidelines](#) include an indicative list of EPOs, which was followed, and these are set out in Chapter 4. In addition, the Step-by-Step Guide to the SEA process in the [Guidelines](#) recommends that broad planning policy objectives (PPOs) for the area are defined. Both the EPOs and the PPOs were combined to form the Strategic Environmental Objectives, or SEOs, against which the alternatives and plan provisions were assessed.

### 1.2.6 Consideration of Alternatives

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

### 1.2.7 Environmental Assessment of the LAP

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

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

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

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

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

The formulation of the Plan and the preparation of the Environmental Report is an iterative process that takes place over many months and therefore it is difficult to document the evolution of every objective in the Plan. However, there are a number of significant changes for which the SEA is mainly responsible, which are noted here.

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

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

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

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

A Strategic Flood Risk Assessment (SFRA) has been carried out as part of the SEA process. The SFRA is included as an appendix to this SEA.

#### **1.2.9 Mitigation**

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

#### **1.2.10 Monitoring**

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

#### **1.2.11 Technical Difficulties Encountered**

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

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

#### **1.2.12 Report Preparation**

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

## 2 Contents and Description of the Plan

### 2.1 Contents

Kilkenny County Council is currently preparing the Ferrybank Belview Local Area Plan 2018 (hereafter referred to as the Plan) which will replace the existing Local Area Plan for 2009-2020. This Plan is being prepared under the provisions of the Planning and Development Acts 2000-2010 to develop and improve the area in a sustainable manner. The area to be included in this Plan is shown enclosed by the red boundary line on Figure 2.1.

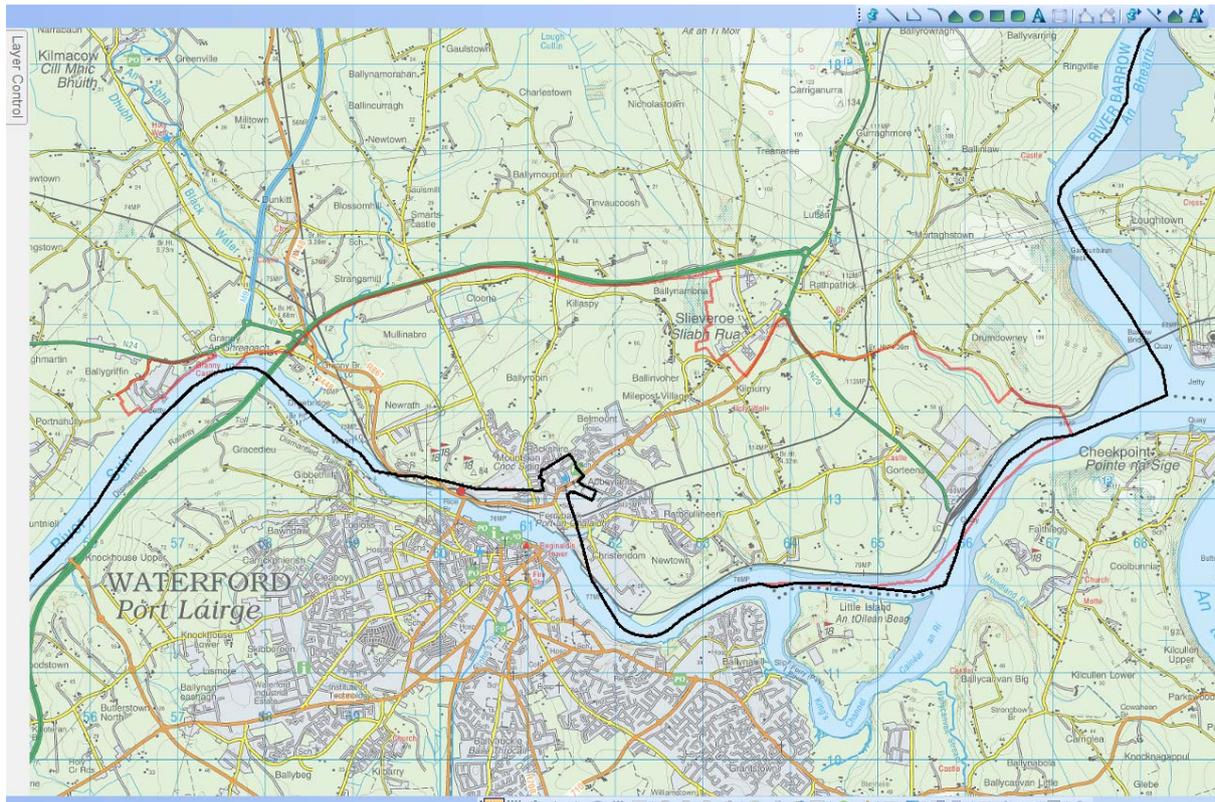


Figure 2.1 Plan area

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

1. Introduction & Strategic Context
2. Core Strategy & Zoning
3. Area identity
4. Economic Development and Retailing
5. Belview Port Area
6. Community and Housing
7. Heritage
8. Recreation, Tourism and the Arts
9. Infrastructure & Environment
10. Transport
11. Development Management
12. Implementation & Finance

As the Core Strategy included in Chapter 2 of the Plan outlines, the focus for new residential development will be within and adjoining the existing built-up area of Ferrybank. The Plan's zoned land has a total capacity for 910 units. The focus for new industrial/employment development will be in the vicinity of Belview port.

## 2.2 Objectives

The main objectives and ethos of the Plan can be summarised in its Vision (Section 1.10) as follows: *"To ensure that the people of the Waterford City Environs in County Kilkenny enjoy a good quality of life with a high standard of education, excellent employment prospects and easy access to a full range of social, economic and cultural services. Through integrated planning and cooperation with Waterford City and County Council, all other stakeholders in the region, ensuring that Waterford City will fulfil its role as a Gateway city and as an economic driver of the South East Waterford City region, and facilitating the provision of key investment priorities and ensuring that development takes place in a balanced, sustainable, transport friendly, attractive manner with good quality of life and opportunities for the people of the City, environs and the region".*

## 2.3 Relationship with other relevant plans and programmes

The Plan provides a land use framework for the sustainable development of the area. In its making, the Plan will have regard to all relevant planning and environmental policy and legislation including European Union directives, Ministerial guidelines and other national, regional and county plans and policies. These include the following:

- [National Climate Change Adaptation Framework](#)<sup>14</sup>
- [National Spatial Strategy \(NSS\)](#)<sup>15</sup>
- [National Planning Framework](#)
- [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#)<sup>16</sup>
- [Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020](#) (2009)
- Ministerial Guidelines on [Architectural Heritage Protection](#), [Childcare Facilities](#), [Development Plans](#), [Landscapes](#), [The Planning System and Flood Risk Management](#), [Retail Planning](#), [Strategic Environmental Assessment](#), [Sustainable Residential Development in Urban Areas](#) and [Sustainable Rural Housing](#)
- [South East River Basin Management Plan](#)<sup>17</sup>
- Waterford Planning and Land Use Transportation Study (PLUTS)<sup>18</sup>
- [South East Regional Planning Guidelines](#)<sup>19</sup>
- [Waterford City Development Plan 2013-2019](#)
- [Kilkenny County Development Plan 2014-2020](#)
- North Quays Strategic Development Zone scheme (as it emerges)

<sup>14</sup> Department of Environment, Community and Local Government, [National Climate Change Adaptation Framework](#), 2012

<sup>15</sup> Department of the Environment and Local Government, [The National Spatial Strategy 2002-2020, People, Places and Potential](#), 2002

<sup>16</sup> Government of Ireland, [Our Sustainable Future – A Framework for Sustainable Development for Ireland](#), 2012

<sup>17</sup> South Eastern River Basin District, [South East River Basin Management Plan](#), 2010

<sup>18</sup> Atkins, [Waterford Planning and Land Use Transportation Study 2004-2020](#), 2004

<sup>19</sup> South East Regional Authority, [Regional Planning Guidelines for the South East Region 2010-2022](#), 2010

In particular, the Kilkenny County Development Plan 2014-2020 (CDP) provides a context for the making of this Plan. The [CDP](#) allocated a projected population growth figure for Ferrybank, which must be adhered to. This population projection is translated into a housing land requirement, or a 'pot' of zoned land. The Core Strategy of the Plan sets out how the LAP complies with the County Core Strategy and how the population allocation is distributed.

The [Waterford City Development Plan 2013-2019](#) also provides a context for this Plan, as the area covered by that Development Plan adjoins the Plan area.

The Plan will set the strategic context for any development applications in the area.

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

### 3.1 Statistical overview of the area

The Plan area comprises 2,152 hectares. Its population in 2016 is estimated at 5,246.

### 3.2 Description of the physical environment of the area

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

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

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

### 3.3 Biodiversity, Flora and Fauna

Information on habitats and biodiversity is available from the National Biodiversity Data Centre<sup>20</sup>. Kilkenny also has a Biodiversity Plan which gives details on the types of habitats and species found in Kilkenny.

#### 3.3.1 Designated sites

Habitats in the county, of international and national importance, are designated under EU and national legislation. The two categories of designated site in effect in the Plan area are:

- I. Special Areas of Conservation (SAC)  
SAC's have been, and are being designated, under the EU Habitats Directive to conserve habitats and species of European importance.
- II. Natural Heritage Areas (NHA)  
NHA's have been, and are being, designated to conserve habitats and species of national importance and sites of geological interest, under the Wildlife (Amendment) Act, 2000.

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<sup>20</sup> <http://www.biodiversityireland.ie/>

There are currently two Natura 2000 sites in the immediate vicinity of the Plan area, the Lower River Suir (Site Code 002137) within the Plan area, and the River Barrow and River Nore (Site Code 002162), located just outside the boundary. There are also two proposed Natural Heritage Areas, see Table 3.1 below. These sites are illustrated on Figure 3.1.

**Table 3.1: Designated Natural Heritage Sites of International and National Importance**

Site Name	SAC	pNHA	WF
Lower River Suir	002137		
River Barrow & River Nore	002162		✓
River Barrow Estuary		000698	
Grannyferry		000833	

SAC candidate Special Area of Conservation pNHA Proposed Natural Heritage Area  
 WF Wildfowl Sanctuaries

Data is available on all of these sites from the NPWS, to varying degrees. The two SAC sites are mapped and have a Site Synopsis, which includes a section on potential threats to the SAC. Threats are outlined in the various Site Synopses as follows:

- Lower River Suir: Fragmentation, abundance of alien invasive species, grazing regimes, drainage, eutrophication, infilling and reclamation, weirs, water pollution.
- River Barrow and River Nore: Fragmentation, abundance of alien invasive species, grazing regimes, fishing, water pollution, Eutrophication, Land reclamation, Afforestation, drainage, sea-level rise, weirs, channel maintenance.

In 2010, two Freshwater Pearl Mussel Management Plans were published for the Rivers Nore and Clodiagh (tributary of the River Suir)<sup>21</sup>.

Every six years, the NPWS publish a report on the conservation status of habitats and species protected under the Habitats Directive. The second report was published in 2008<sup>22</sup>. The third assessment report was published in 2013. Volume 2<sup>23</sup> (Habitats) and Volume 3<sup>24</sup> (Species) contain the detailed reports and relevant scientific information, including the conservation status of each SAC and the SPA by habitats and species. Table 3.2 sets out the conservation status of each SAC by habitats and species for both 2008 and 2013.

<sup>21</sup> Produced by NS2, funded by DEHLG, [Freshwater Pearl Mussel \(Second Draft\) Nore Sub-basin Management Plan](#), 2010

Produced by NS2, funded by DEHLG [Freshwater Pearl Mussel Second Draft Clodiagh Sub-Basin Management Plan](#), 2010

<sup>22</sup> NPWS, [The Status of EU Protected Habitats and Species in Ireland](#), 2008

<sup>23</sup> NPWS, [The Status of EU Protected Habitats and Species in Ireland 2013, Habitat Assessments, Volume 2](#), 2013

<sup>24</sup> NPWS, [The Status of EU Protected Habitats and Species in Ireland 2013, Species Assessments, Volume 3](#), 2013

Table 3.2 Conservation status of Natura 2000 sites (habitats and species) in Plan area							
Site Name	Site Code/Ref	Habitats *Includes note on whether habitat is mapped in Plan area	Conservation Status		Species* *Includes note on whether species is mapped in Plan area	Conservation Status	
			2008	2013 (Trend)		2008	2013 (Trend)
Lower River Suir SAC	002137	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] (mapped in Plan area)	Poor	Inadequate (stable)	Margaritifera margaritifera [1029] (not mapped in Plan area)	Bad	Bad (declining)
		Mediterranean salt meadows (Juncetalia maritimi) [1410] (mapped in Plan area)	Poor	Inadequate (stable)	Austropotamobius pallipes [1092] (mapped in Plan area)	Poor	Inadequate (stable)
		Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] (mapped in Plan area)	Bad	Inadequate (declining)	Petromyzon marinus [1095] (range is mapped in Plan area)	Poor	Bad (Stable)
		Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] (mapped in Plan area)	Poor	Bad (stable)	Lampetra planeri [1096] (range is mapped in Plan area)	Good	Favourable (N/A)
		Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] (mapped in Plan area)	Bad	Bad (improving)	Lampetra fluviatilis [1099] (range is mapped in Plan area)	Good	Favourable (N/A)
		Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)[91E0] (mapped in Plan area)	Bad	Bad (improving)	Alosa fallax [1103] (mapped in plan area)	Bad	Bad (Stable)
		* Taxus baccata woods of the British Isles [91J0] (Not mapped in Plan area)	Bad	Bad (improving)	Salmo salar (only in fresh water) [1106] (mapped in Plan area)	Bad	Inadequate (stable)

*Environmental Report*

					Lutra lutra [1355] (mapped in Plan area)	Poor	Favourable (N/A)
River Barrow & River Nore/ Barrow Estuary/ Abbeyleix Wood Complex cSAC	002162	Estuaries [1130] (mapped in Plan area)	Poor	Inadequate (improving)	Vertigo moulinsiana [1016] (not mapped in Plan area)	Bad	Inadequate (declining)
		Mudflats and sandflats not covered by seawater at low tide [1140] (mapped in Plan area)	Poor	Inadequate (improving)	Margaritifera margaritifera [1029] (not mapped in Plan area)	Bad	Bad (declining)
		Salicornia and other annuals colonizing mud and sand [1310] (mapped in plan area)	Poor	Inadequate (declining)	Austroptamobius pallipes [1092] (mapped in Plan area)	Poor	Inadequate (stable)
		Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] (mapped in plan area)	Poor	Inadequate (stable)	Petromyzon marinus [1095] (range is mapped in Plan area)	Poor	Bad (Stable)
		Mediterranean salt meadows (Juncetalia maritimi) [1410] (mapped in plan area)	Poor	Inadequate (stable)	Lampetra planeri [1096] (range is mapped in Plan area)	Good	Favourable (N/A)
					Lampetra fluviatilis [1099] (range is mapped in Plan area)	Good	Favourable (N/A)
					Alosa fallax [1103] (mapped in plan area)	Bad	Bad (Stable)
					Salmo salar (only in fresh water) [1106] (mapped in Plan area)	Bad	Inadequate (stable)
					Lutra lutra [1355] (mapped in Plan area)	Poor	Favourable (N/A)
					Trichomanes speciosum [1421] (Not mapped in Plan area)	Good	Favourable (N/A)
					Margaritifera durrovensis (Margaritifera margaritifera) [1990] (Not mapped in Plan area)	Bad	Bad (declining)

### 3.3.2 Flora and Fauna

A number of species are protected under European and national law, under Annex IV of the Habitats Directive and the Wildlife Acts. Data is available from the National Biodiversity Data Centre on the occurrence of species in Co. Kilkenny. The NPWS produce a number of plans in relation to some protected species, these are set out below, and the distribution of the species in the Plan area is included.

The NPWS have produced a number of Species Action Plans for particular species of highest conservation concern and their distribution within Kilkenny is set out in Table 3.4.

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

<b>Species Action Plan</b>	<b>Distribution in Kilkenny/Plan area<sup>25</sup></b>
Species Action Plan Bats 2008	Widely found
Species Action Plan Killarney Fern 2008	Not in Plan area
Species Action Plan Red Squirrel 2008	In Plan area
Species Action Plan Irish Lady's-tresses, Pollan, Hare, Corncrake 2005	
Irish Lady's-tresses	None in Kilkenny
Pollan	None in Kilkenny
Hare ( <i>Lepus timidus hibernicus</i> )	Widely found
Corncrake	In Plan area

Threat Response plans have also been issued for particular species. These three year plans provide detailed information on range, distribution and habitat. They also focus on the particular threats facing each species and identify the measures required to address these threats, as well as identifying who is responsible for implementing them and providing a time frame for delivery.

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

Aquatic flora and fauna is addressed also under Section 3.6.

### 3.3.3 Woodlands, Trees and hedgerows

There is one Tree Preservation Order in the area, Christendom Wood in Ferrybank, Ref. 1/2008.

The National Survey of Native Woodlands (NSNW)

The National Survey of Native Woodlands (NSNW) surveyed a total of 58 sites in Kilkenny as part of the National Survey (BEC consultants 2003-2008). There is one site within the Plan area, as shown on Figure 3.1, Site Code 225 at Mullinabro/Newrath. This site overlaps with a site identified as being of high value, locally important, containing Oak-Ash-Hazel woodland, habitat code WN2, see below.

The Tree Register of Ireland (TROI) identified approx. 180 significant trees in the county. These are available to view at:

<sup>25</sup> [National Biodiversity Data Centre website](#) accessed March 2013

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

No trees are listed on the Register in the Plan area.

#### Ancient woodlands

Ancient woodlands are defined in Ireland as areas which have been wooded since 1660. Possible ancient woodlands (PAWS) and long established woodlands (LEWS) were identified from documentary and archaeological evidence by the NPWS. A total of 28 PAWS and LEWS were identified in Co. Kilkenny, and one of these is located at the same site as the NSNW in Newrath, within the plan area, see Figure 3.1.

The Strategic Environmental Assessment carried out for the 2009 LAP identified a total of 7 woodland sites as being of high value, locally important.

Two of these were sites of Oak-Ash-Hazel woodland, habitat code WN2. They were found to have an unusually low proportion of non-native species and well formed canopies. The two sites are located in Mullinabro and Cloone, see Figure 3.1, and are connected by a small stream, which adds diversity. The site at Mullinabro was identified as part of the NSNW, see above.

Four of these woodland sites were identified as Riparian Woodland, habitat code WN5. These sites are all located in the east of the Plan area, in Belview see Figure 3.1.

One of these sites was identified as Mixed Broadleaved Woodland, WD1, located near the SAC in Belview.

#### 3.3.4 Invasive Species

Invasive species such as Japanese Knotweed, rhododendron, sycamore and laurel can cause major ecological changes and damage to habitats where they become established. Information is available on invasive species from the National Biodiversity Data Centre<sup>26</sup> and from Invasive Species Ireland<sup>27</sup>, which is a joint venture between the Northern Ireland Environment Agency and the National Parks and Wildlife Service. A list of the top twelve invasive species in the region, known as The Dirty Dozen Report<sup>28</sup>, was published by the National Biodiversity Data Centre in 2010. This report provides detailed information, including distribution maps and species profiles, for the top twelve invasive species in the region. The twelve species and their broad distribution in the vicinity of the Plan area<sup>29</sup> are:

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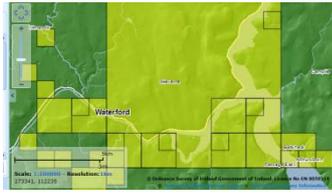
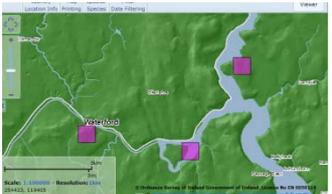
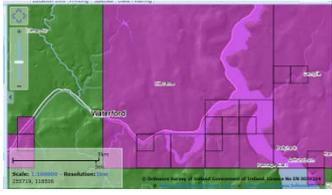
<sup>26</sup> <http://invasives.biodiversityireland.ie/>

<sup>27</sup> <http://invasivespeciesireland.com/>

<sup>28</sup> <http://invasives.biodiversityireland.ie/wordpress/wp-content/uploads/Dirty-Dozen-invasive-species-Kilkenny-Co-Co-2010.pdf>

<sup>29</sup> Taken from <http://maps.biodiversityireland.ie/#/Map/NbdcTerrestrial/Species/28772> on 23/10/2014

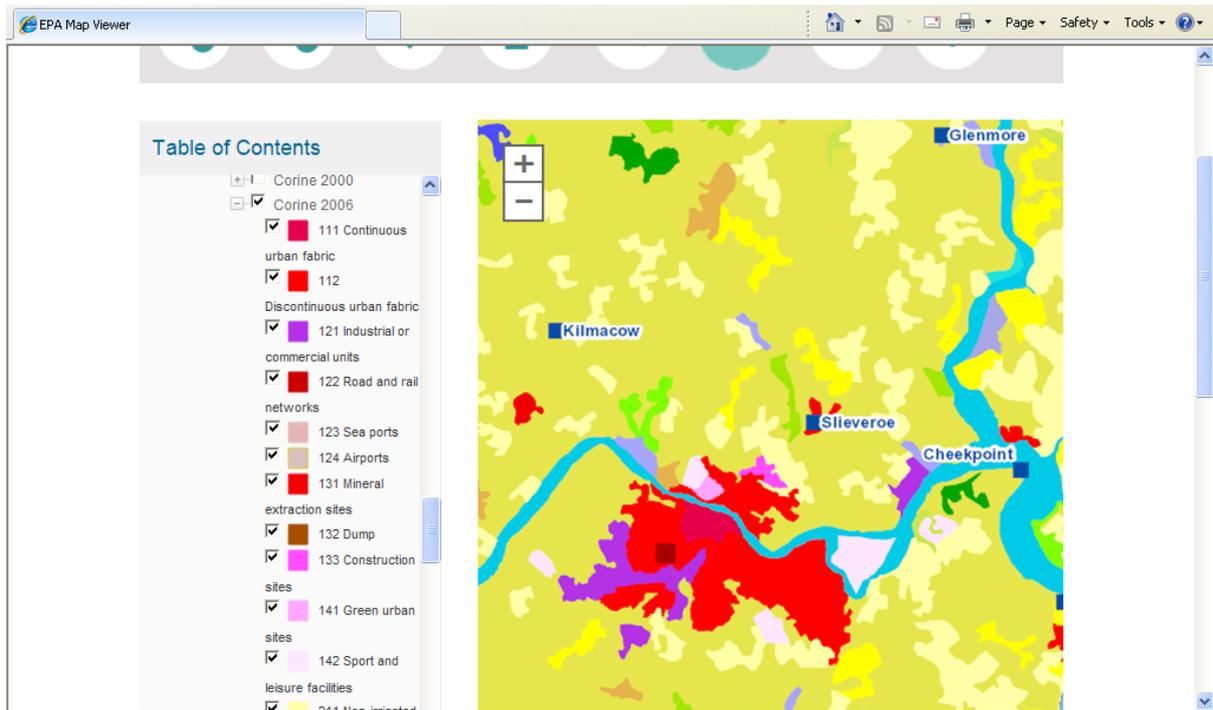
Table 3.5: Invasive Species Distribution 2014

Name	Distribution (2014)	Name	Distribution (2013)
Japanese Knotweed (Falopia Japonica)		Least Duckweed (Lemna Minuta)	
Himalayan Balsam (Impatiens Glandulifera)		Common Cord-Grass (Spartina Anglica)	
Giant Hogweed (Heracleum Mantegazzianum)		Asian Clam (Corbicula Fluminea)	
Rhododendron Ponticum		Dace (Leuisiscus Leuisiscus)	
Water fern (Azolla Filiculoides)		Grey Squirrel (Sciurus Carolinensis)	
Nuttall's Waterweed (Elodea Nuttallii)		Wild Boar (Sus Scrofa)	

### 3.3.5 Land Cover

Land cover is the physical description of what is present on the surface of the land. The CORINE map for Co. Kilkenny provides a digital map of land cover. CORINE stands for *Coordination of Information on the Environment* and is a map of the European environmental landscape based on interpretation of satellite images. The CORINE Land Cover update of 2006 (from the EPA website) is shown on Figure 3.2 and the update of 2012 is shown on Figure 3.3. The change between 2006 and 2012 is shown on Figure 3.4.

As can be seen, the two areas of change are immediately adjacent to the urban centre of Ferrybank, and at the road interchange, and are increases in the CORINE categories of discontinuous urban fabric and industrial and commercial units.



epa MAPS  
Environmental Protection Agency

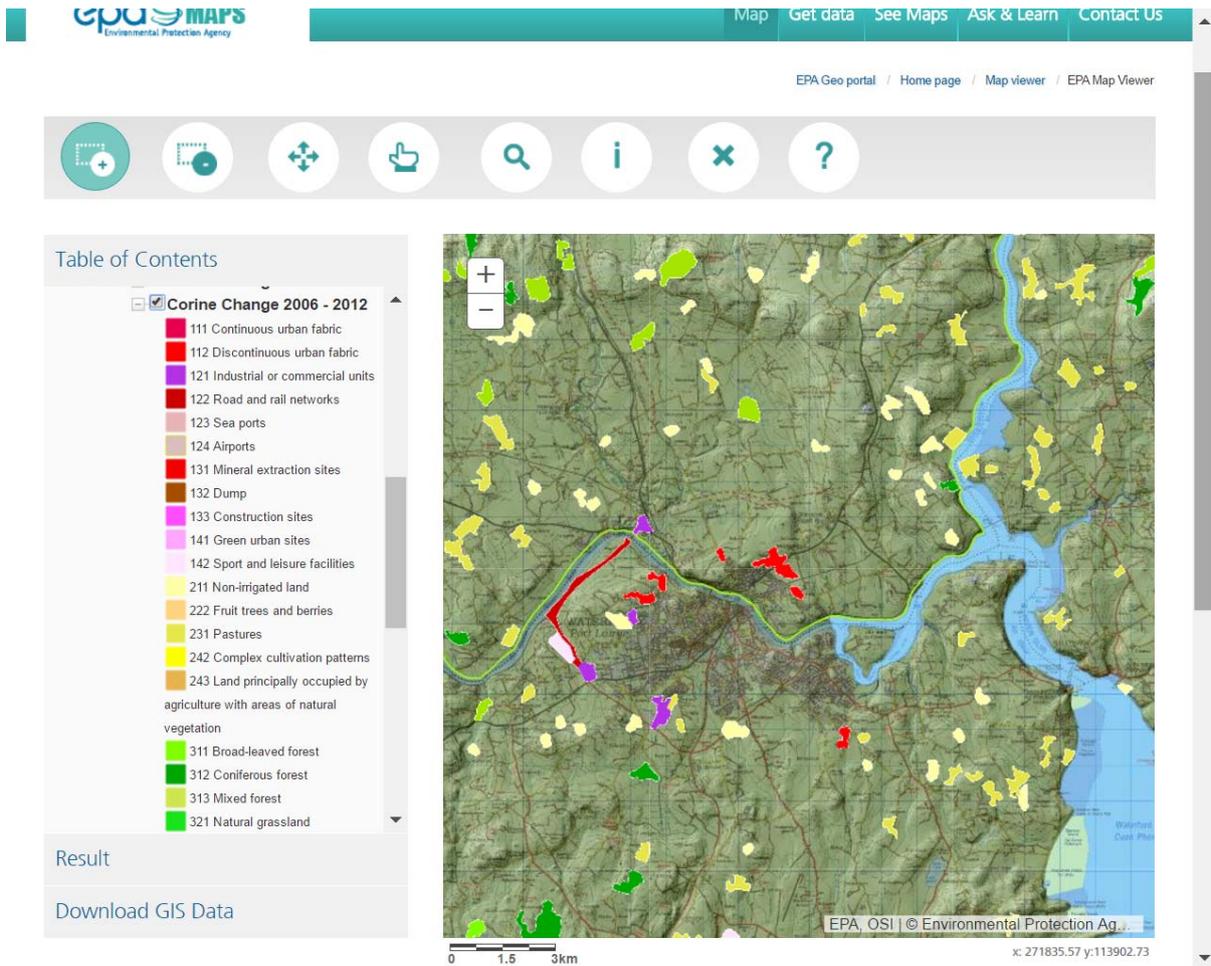
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  - 132 Dump
  - 133 Construction sites
  - 141 Green urban sites
  - 142 Sport and leisure facilities
  - 211 Non-irrigated land
  - 222 Fruit trees and berry plantation
  - 231 Pastures
  - 242 Complex cultivation patterns
  - 243 Land principally occupied by agriculture with areas of natural vegetation
  - 311 Broad-leaved forest
  - 312 Coniferous forest
  - 313 Mixed forest
  - 321 Natural grassland

Result



### 3.3.6 Existing Problems

- SACs – the conservation status of most of the habitats and species in the Natura 2000 sites in the area is either poor or bad.
- As both the Natura 2000 sites are rivers, with the conservation status ranging from Poor to Bad, water quality is a hugely significant issue for the plan area.
- Continued replacement of natural and semi-natural habitats with artificial surfaces results in loss of non-designated flora and fauna
- Invasive species pose a threat to biodiversity in the area.

### 3.4 Population and Human Health

#### 3.4.1 Population Distribution

The Plan area’s population continues to grow. The Census figures do not relate exactly to the Plan area boundary, but there are four EDs located within the Plan area (from west to east); Aglish, Dunkitt, Kilculliheen and Rathpatrick, see Figure 3.5. It can be seen that although Kilculliheen is entirely contained within the plan area, only parts of Aglish, Dunkitt and Rathpatrick are included.

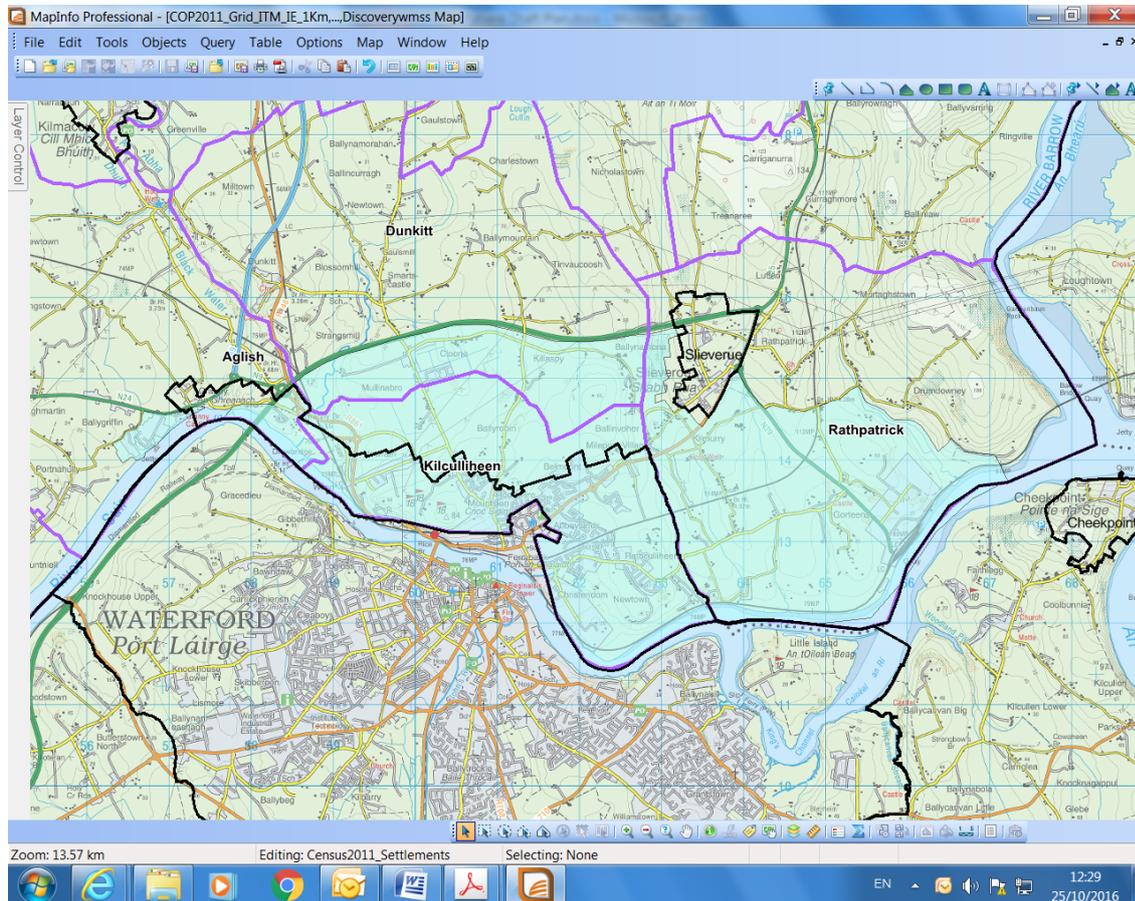


Figure 3.5: Boundary of Waterford Suburbs (and also separately, Slieverue) in black shown against the Plan area shaded in blue. The ED boundaries are coloured in purple.

Table 3.6 sets out the population of EDs contained (wholly or partially) within Plan area between 1996 and 2016.

Table 3.6: Population of EDs contained (wholly or partially) within Plan area 1996 2016

	Kilculliheen	Aglish	Rathpatrick	Dunkitt	Total
1996	1,613	847	1,622	873	<b>4,955</b>
2002	2,145	886	1,204	935	<b>5,170</b>
2006	3,493	920	1,173	1,011	<b>6,597</b>
2011	4,811	871	1,140	1,058	<b>7,880</b>
2016	5,246	883	1,095	1,015	<b>8,239</b>

Source: CSO, 1996-2016

As Kilculliheen makes up the bulk of the “Waterford Suburbs in Co. Kilkenny” as defined by the Census, it is reasonable to use the population figure for the Kilculliheen ED as an estimate of the population for 2016. The population of Kilculliheen in 2016 is 5,246.

### **3.4.2 Human health**

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

#### **3.4.2.1 Major Accidents Directive**

The Major Accidents Directive (EU Directive 96/82/EC, known as the Seveso II Directive), seeks to reduce the risk and to limit the consequences to both man and the environment, of accidents at manufacturing and storage facilities involving dangerous substances. There is one Seveso (Control of Major Accident Hazards Directive) site in the Plan area; Trans-Stock Warehousing and Cold Storage in Christendom, Ferrybank.

There is also one site in Co. Wexford’s administrative area, which is in close proximity to Co. Kilkenny. The HSA have stated that the consultation distance i.e. the distance within which they should be notified of any development for this site (SEE Generation Ireland Ltd., Campile), is 300m. The distance from this site to the land at Drumdowney is 500m, therefore this doesn’t need to be addressed any further in the LAP. See Figure 3.6.

Figure 3.6: Seveso sites in plan area



### 3.4.3 Waste Management

The issue of waste is now dealt with on a regional basis, and there is a Joint Waste Management Plan in place for the South East Region. Waste management is being reviewed at a national level, and the Government recently introduced its new waste management policy for Ireland entitled [A Resource Opportunity, Waste Management Policy in Ireland](#)<sup>30</sup>. There is also a Litter Management Plan in place for the County (2015-2017). As this issue is addressed by other plans, it is not considered that this requires further detail here.

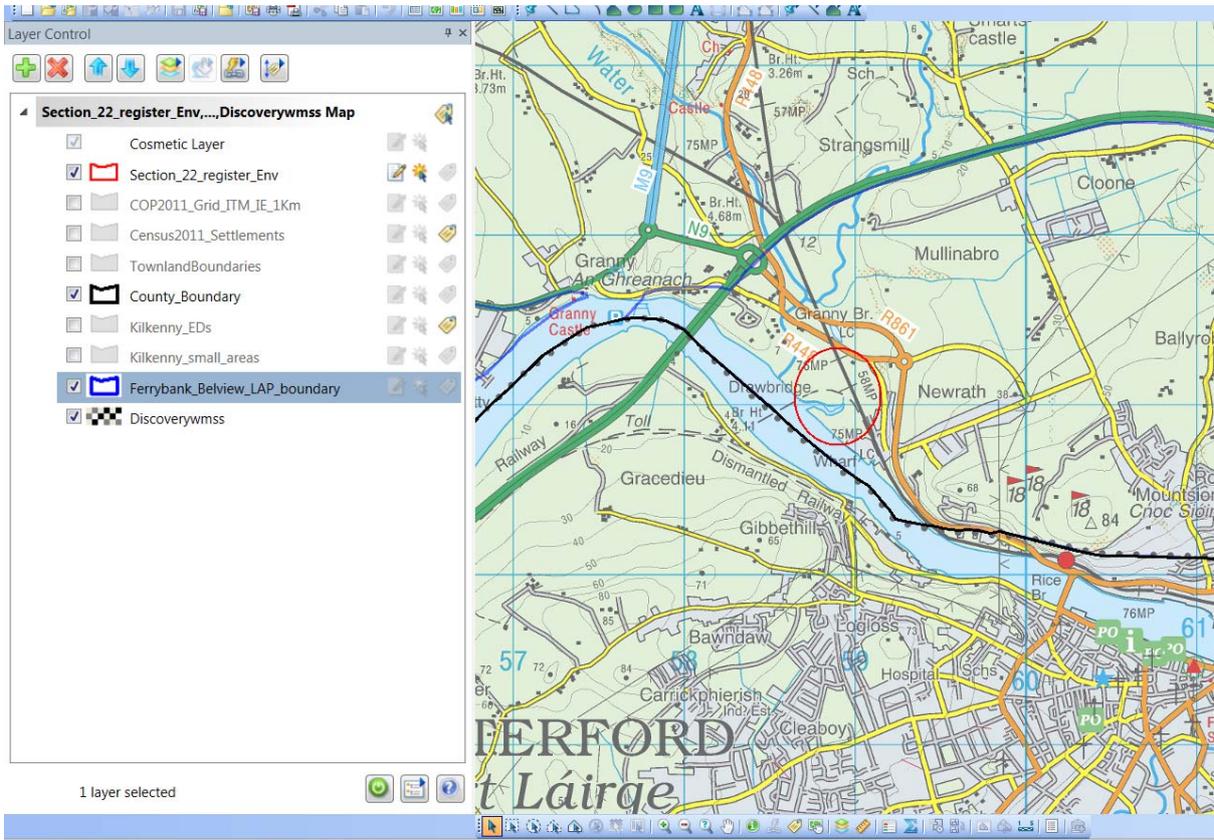
Local Authorities are required to identify historic waste disposal or recovery sites and to place them on a register. Non-hazardous sites are to be placed on the Section 22 Register and hazardous sites are to be placed on the Section 26 register. There are no Section 26 sites within the Plan area, but there are three S22 landfill sites within the plan area. These were privately operated and involved the infilling of lands using inert material for land improvement/reclamation purposes.

### 3.4.4 Existing Problems

- In terms of population distribution, rapid population growth, such as that in Kilculliheen, may cause problems if the associated infrastructural and social services are not provided in tandem with the growth.
- The Seveso (COMAH) site in the Plan area must be provided for in the land use zoning map.
- Risk assessments have not been completed for sites on the EPA Section 22 Register of non-licensed closed landfills (i.e. historic unregulated waste disposal sites), however the material was inert and is unlikely to cause risks to the environment.

<sup>30</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

Figure 3.7: Location of three Section 22 sites in Plan area



### **3.4.5 Soil/Geology**

The County Development Plan 2014-2020 contains a list of County Geological Sites, which were developed in partnership with the Geological Survey of Ireland, and policies for their protection. There is one site located adjacent to the Plan area, Granny Quarries, see Figure 3.1.

## 3.5 Water

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

### 3.5.1 Water Framework Directive

The [Water Framework Directive](#)<sup>31</sup> established a framework for the protection of all waters including rivers, lakes, estuaries, coastal waters, groundwater, canals and other artificial bodies for the benefit of everyone.

For the purposes of implementing the WFD, Ireland has been divided into eight river basin districts that are drained by a large river or number of rivers. County Kilkenny is located in the South Eastern River Basin District. The [South East River Basin Management Plan \(Water Matters\) 2009-2015](#) was published in 2010<sup>32</sup>. The Draft River Basin Management Plan for Ireland (2018-2021) was published in February 2017.

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

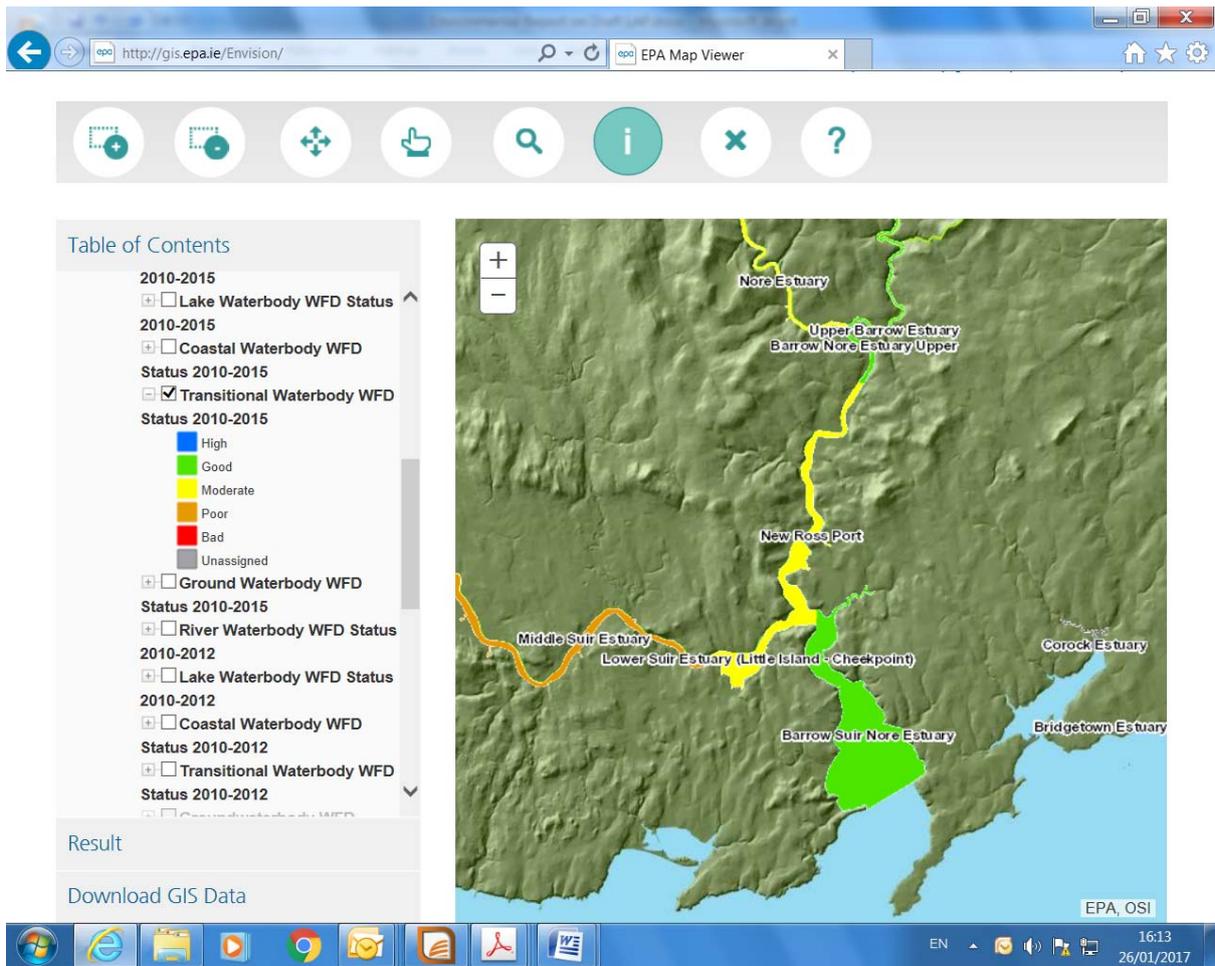
#### 3.5.1.1 Estuarine water quality

Under the WFD, the River Suir at Waterford is divided into the Middle Suir Estuary and the Lower Suir Estuary, both of which are classified as Transitional (Estuarine) waterbodies. According to the EPA, the status of the Middle Suir Estuary was Poor and the status of the Lower Suir Estuary was moderate. (See Figure 3.8 WFD status 2010-2015.) Under the WFD, the River Barrow/Nore is broken into two units at Belview - to the north and the Barrow Suir Nore Estuary to the south. The status of New Ross Port was moderate and the status of the Barrow Suir Nore Estuary was good. (WFD status 2010-2015)

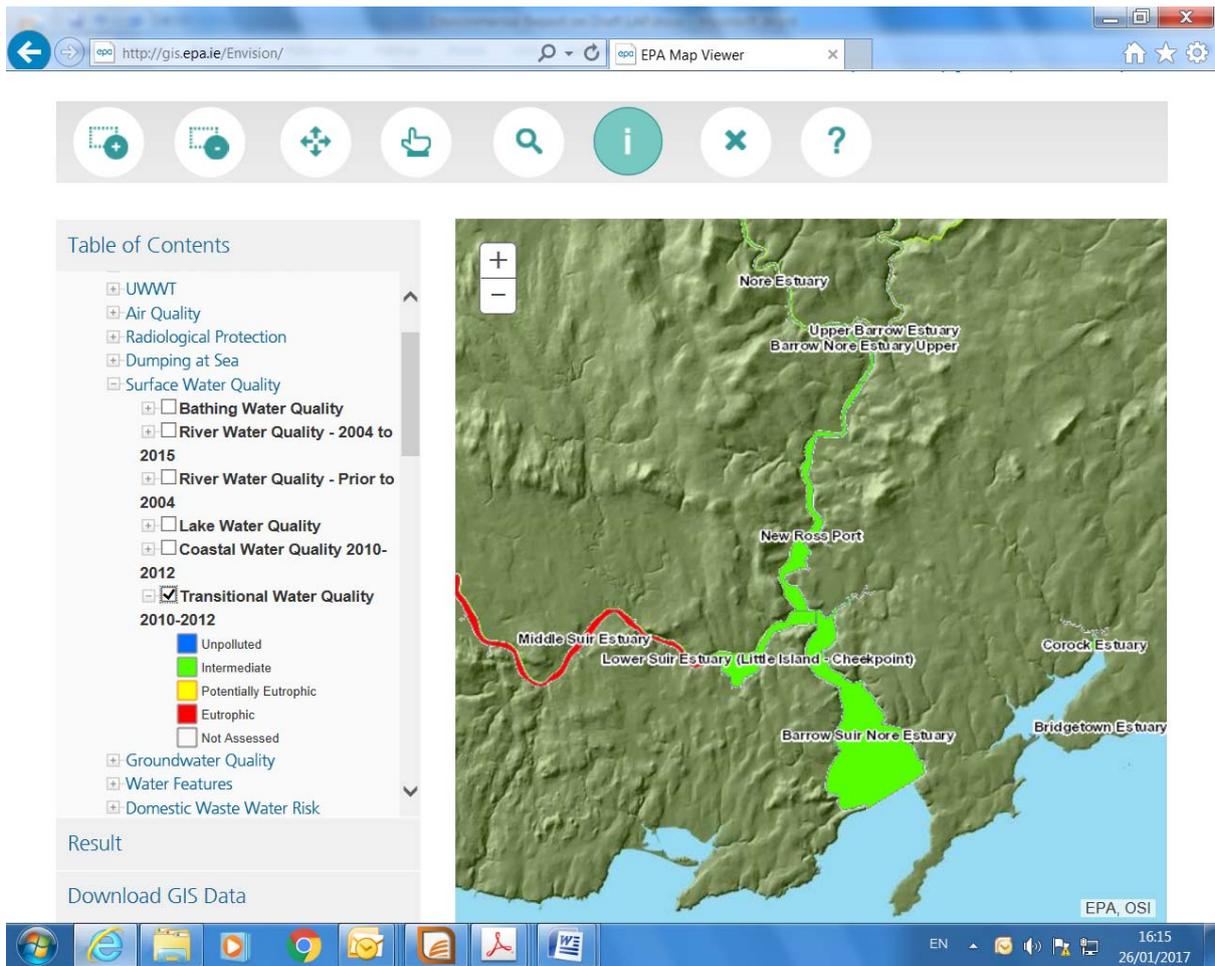
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<sup>31</sup> [Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy](#)

<sup>32</sup> South Eastern River Basin District, [South East River Basin Management Plan \(Water Matters\) 2009-2015](#), 2010

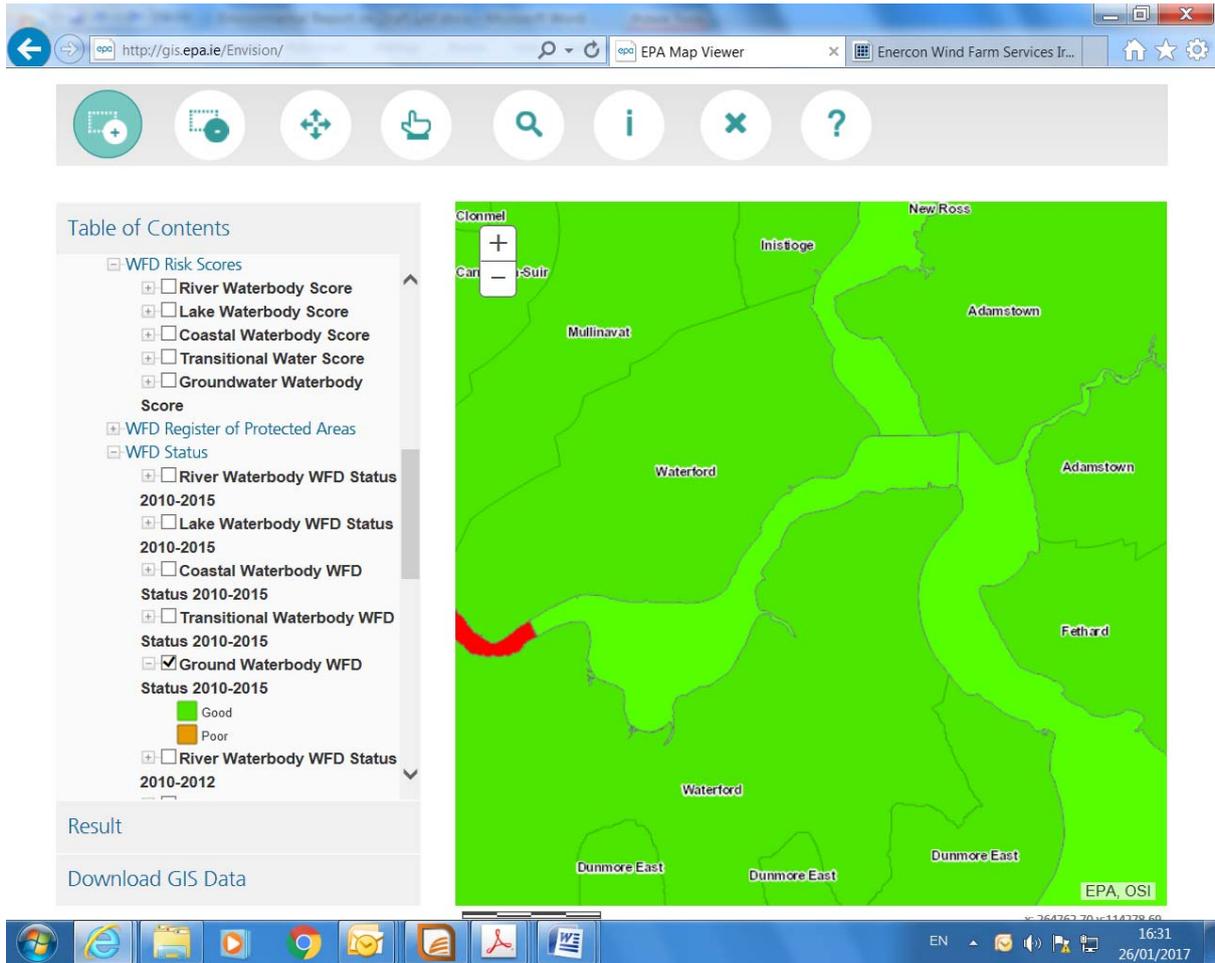


In addition, the current water quality of the Middle Suir Estuary (EPA website accessed 26/1/2017) is classified as 'eutrophic' (eutrophic refers to a high nutrient status and is associated with polluted waters). The Lower Suir Estuary is classified as Intermediate. The water quality of New Ross Port and the Barrow Suir Nore was also Intermediate. (EPA website accessed 26/1/2017, see Figure 3.9)



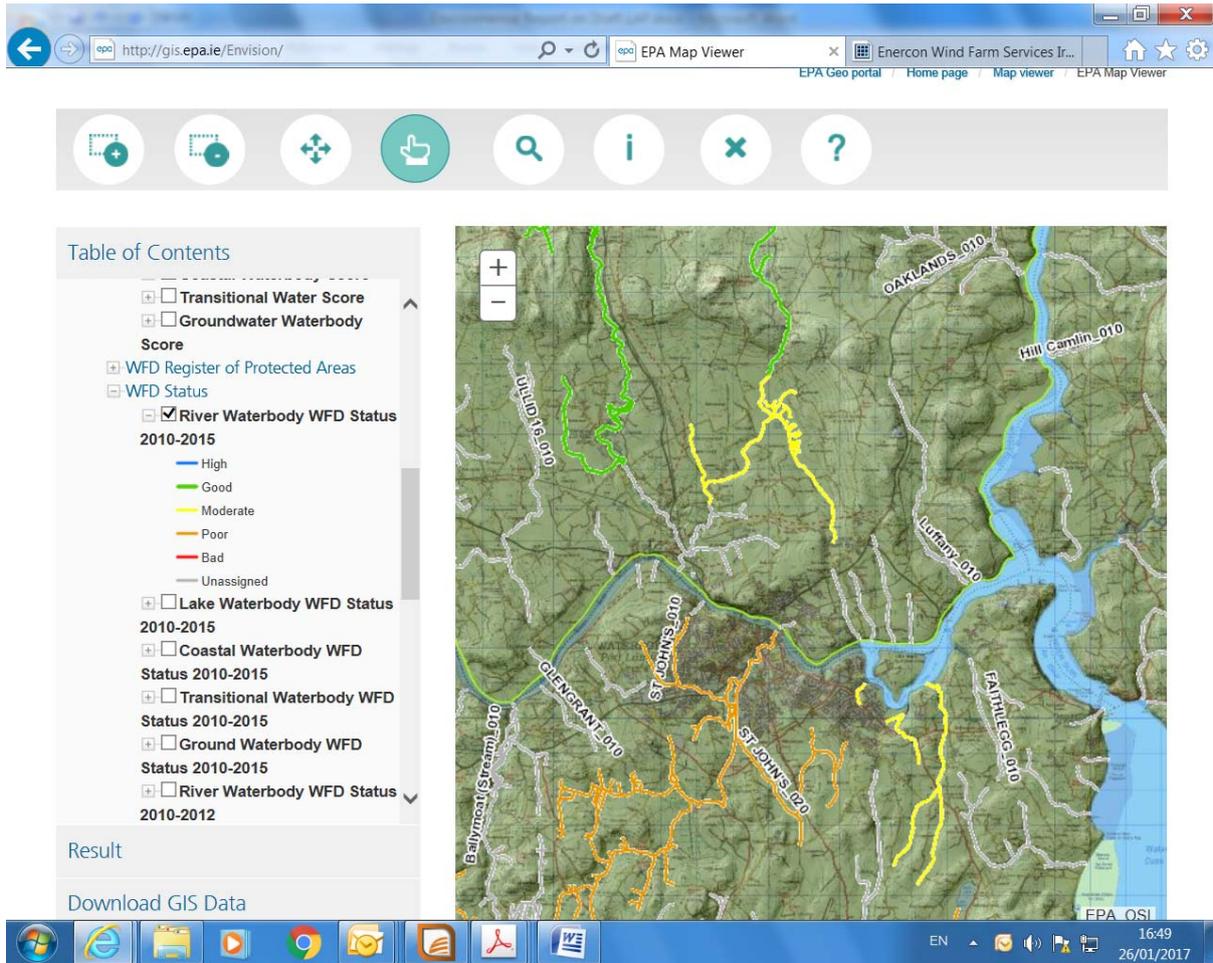
### 3.5.1.2 Groundwater quality

According to the EPA (WFD Status 2010-2015), groundwater status in the area was mainly Good, see Figure 3.10.



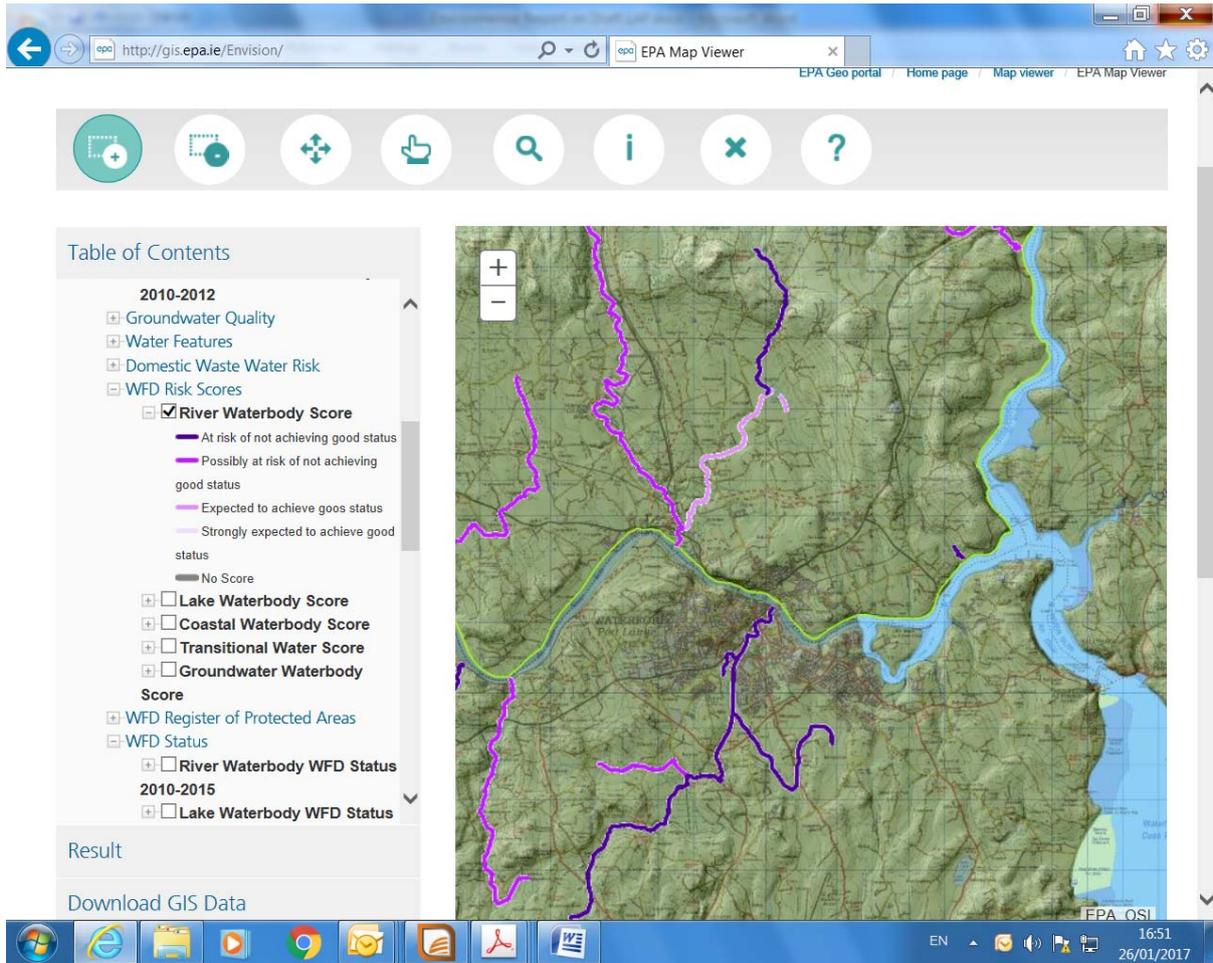
The Water Framework Directive Risk Scores shows that the groundwater in a large part of the Plan area is at risk of not achieving good status (EPA website accessed 26/1/2017, see Figure 3.11).





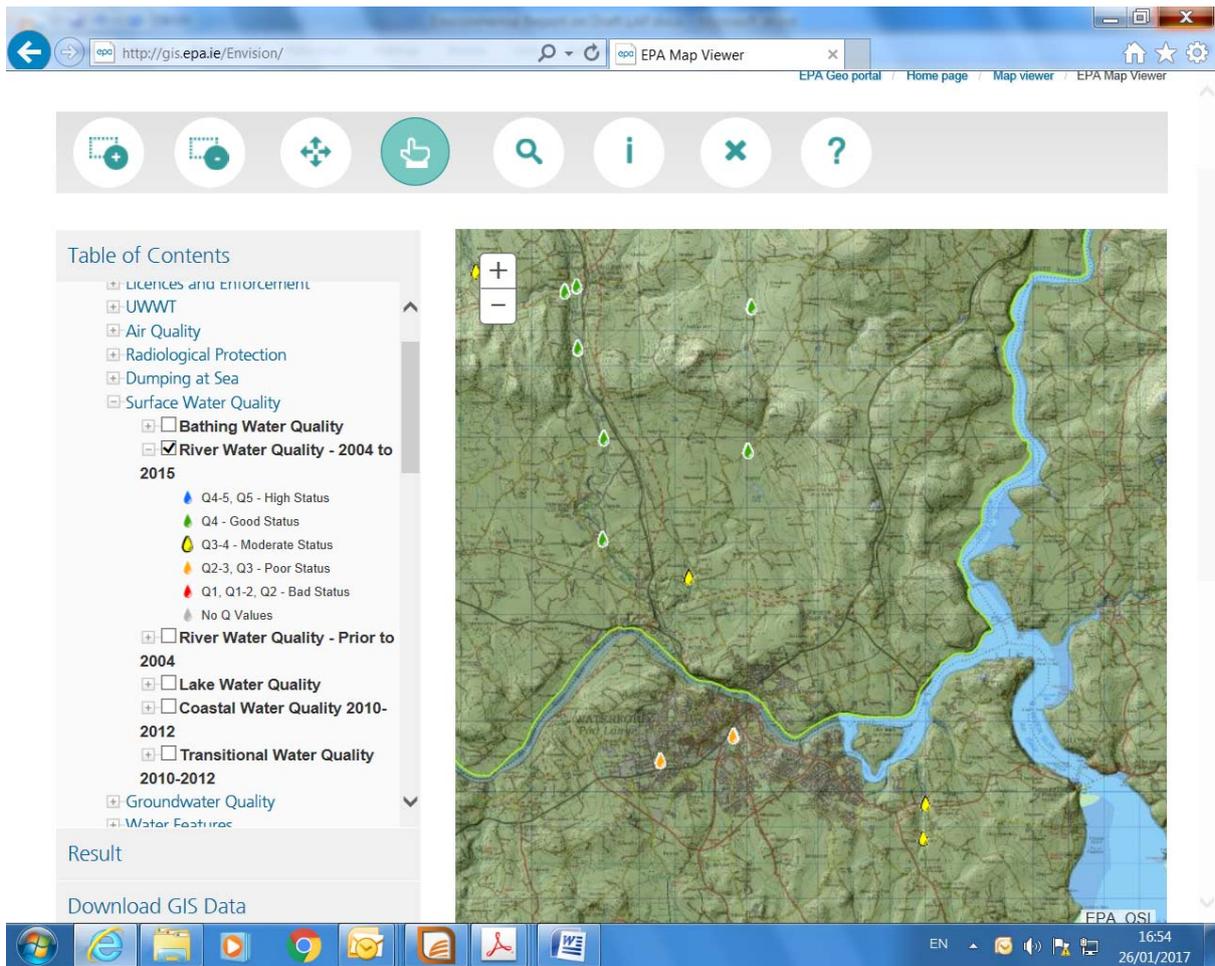
Under the WFD Risk Scores, the River Blackwater was possibly at risk of not achieving good status. Smartscastle Lower Stream was expected to achieve good status, and Curraghmore stream (in the east of the Plan area) was at risk of not achieving good status, see Figure 3.13.

Figure 3.13: WFD Risk Scores Surface water



According to the EPA website (accessed 26/1/17), the current water quality in the Smartscastle Stream is Q3-4 Moderate, and in the River Blackwater is Q4 Good Status.

Figure 3.14: Current Surface water quality



### 3.5.1.3.1 Waterford Harbour Shellfish Growing Area

The Waterford Harbour Shellfish Growing Area was designated in 2009. A Pollution Reduction Programme was prepared based on the Characterisation Report<sup>33</sup>. This found that the key pressures on the site were urban wastewater systems, on-site waste water treatment systems and agriculture. The pressure arising from the urban wastewater systems was alleviated in 2010 with the opening of the upgraded Waste Water Treatment plant in Belview. On site waste water treatment systems such as septic tanks are addressed in section 3.5.3.

### 3.5.2 Waste Water Treatment

A new WWTP began operating in 2010 serving Waterford City and Environs including Belview and Slieverue. The details of the waste water treatment plant are set out below. This WWTP is operated by Waterford City and County Councils, but is located within the Plan area in Gorteens, Belview. The plant has a design capacity of 190,600 Population Equivalent (P.E.), of which 19,500 P.E. is reserved for Kilkenny County Council.

<sup>33</sup> Department of Environment, Heritage and Local Government, [Waterford Harbour Pollution Reduction Programme](#), 2009

**Table 4.1 Details of Belview (Gorteens) waste water treatment plant**

Settlement	WWTP Type	Design P.E. (Population Equivalent)	Urban Area P.E. (Population Equivalent)	Comment
Belview WWTP	Secondary	190,600*	120,000	Information from IW as at May 2017

The EPA publishes reports on the status of waste water treatment in Ireland. The latest of these is [Urban Waste Water Treatment in 2015](#)<sup>34</sup>. This sets out which plants have treatment that is not appropriate based on the effluent results and/or have taken less than the recommended numbers of samples. The plants are categorised into Pass or Fail, and the Belview plant passed.

### 3.5.3 Septic tanks

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

The Government has recently introduced a programme for registration and inspection of septic tanks. Currently, policies in the Development Plan require that septic tanks comply with the EPA’s Code of Practice.

The area of Cloone – Mullinabro is unserved by the public sewer and residents there are encountering difficulties with the current arrangement of individual domestic septic tanks. The difficulties are primarily due to inadequate percolation. A report was carried out by Water Services, Kilkenny County Council, in April 2012 to examine this issue. This found that the funding requirements were significant and this proposal was not advanced.

### 3.5.4 Water supply schemes (WSS)

Public water supplies have the potential to impact hugely on human health. The area is served by the Mooncoin Regional WSS which is being upgraded over 3 phases of works. Phase 1A is complete and has provided for significant additional capacity in the area.

The scheme comprises the abstraction of groundwater from four wellfields in the limestone bedrock in the vicinity of Mooncoin and Kilmacow in South Kilkenny. Three of the four wellfields are located in the vicinity of Mooncoin in the townlands of Silverspings, Grange Station and Waddingstown. The fourth wellfield is located at Kilmacow. The treatment works are provided at Cloone, 4.75 km southeast of Kilmacow. The groundwater is pumped from the treatment works to the existing

<sup>34</sup> EPA, [Urban Waste Water Treatment in 2015](#), 2016

reservoir at Mountsion and the new reservoir at Killaspy. From these reservoirs the supply is gravity fed to the supply area.

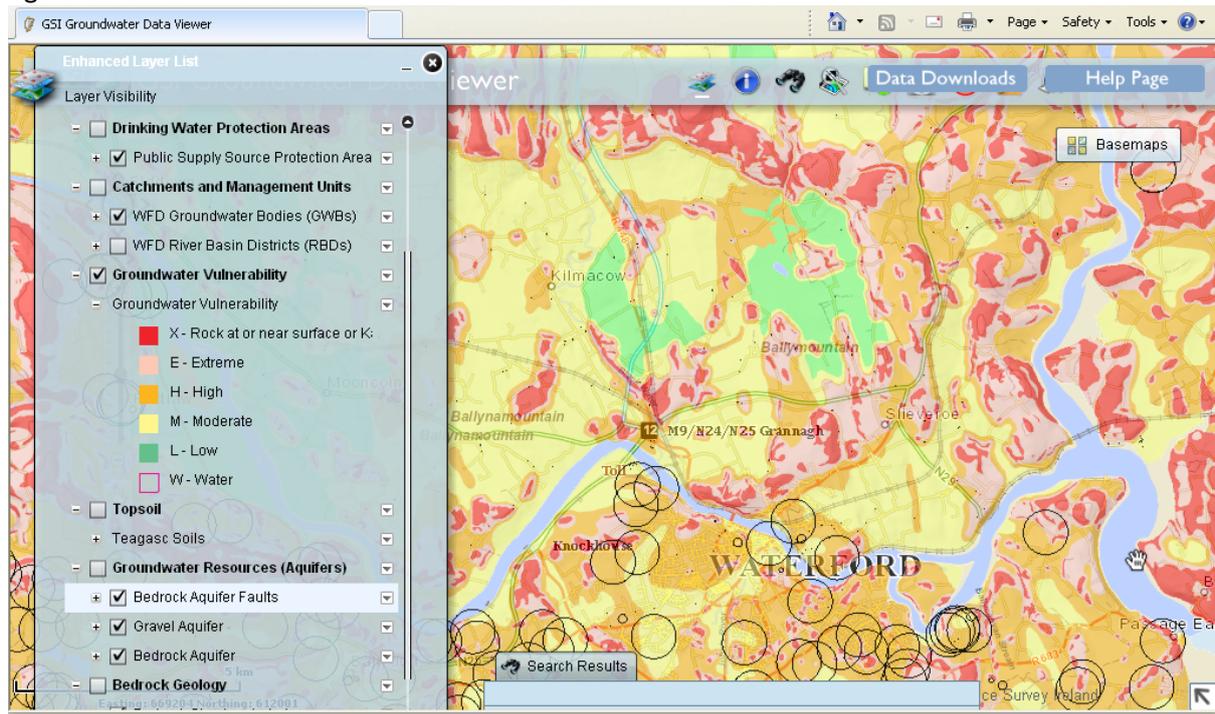
Further upgrading of the water supply will be dependent on phases 2-3 of the Mooncoin Regional Water Supply scheme, a date has not been finalised as yet for these works to commence.

Detail on water quality is contained in the EPA Report Drinking Water Report for Public Water Supplies 2015<sup>35</sup>. This reported that during 2015, a Water Restriction was in place for the Gorteen for the presence of lead, however this restriction was lifted in July 2015. No public supply in the plan area is listed on the EPA’s Remedial Action List (List of public supplies in need of improvement).

### 3.5.5 Ground water protection scheme

The Geological Survey of Ireland has completed Groundwater Protection Schemes for County Kilkenny and Waterford. The overall aim of a Groundwater Protection Scheme is to preserve the quality of groundwater, for drinking water, surface water ecosystems and terrestrial ecosystems, for the benefit of present and future generations. The Groundwater Protection Scheme rates aquifers according to their vulnerability to pollution and groundwater vulnerability is depicted on Figure 3.15<sup>36</sup>. As can be seen, much of the Plan area is located over an area of high or extreme groundwater vulnerability.

Figure 3.15: Groundwater Protection Scheme



<sup>35</sup> EPA, Drinking Water Report for Public Water Supplies 2015, 2016

<sup>36</sup> Source: <http://spatial.dcenr.gov.ie/GeologicalSurvey/Groundwater/index.html>

### **3.5.6 Flooding**

A Strategic Flood Risk Assessment has been carried out as part of the Plan review process and forms an appendix to this SEA report.

### **3.5.7 Existing Problems**

- The Middle Suir Estuary is classified as ‘eutrophic’, this is of particular concern as it overlaps with the River Suir cSAC.
- There are continuing pressures on the Waterford Harbour Shellfish growing area arising from on-site wastewater treatment systems.
- The proliferation of septic tanks can have an impact on the quality of groundwater and surface water.
- In general, the Plan area’s aquifers are rated as either extreme or high vulnerability, which presents challenges to determine appropriate uses.

### 3.6 Air

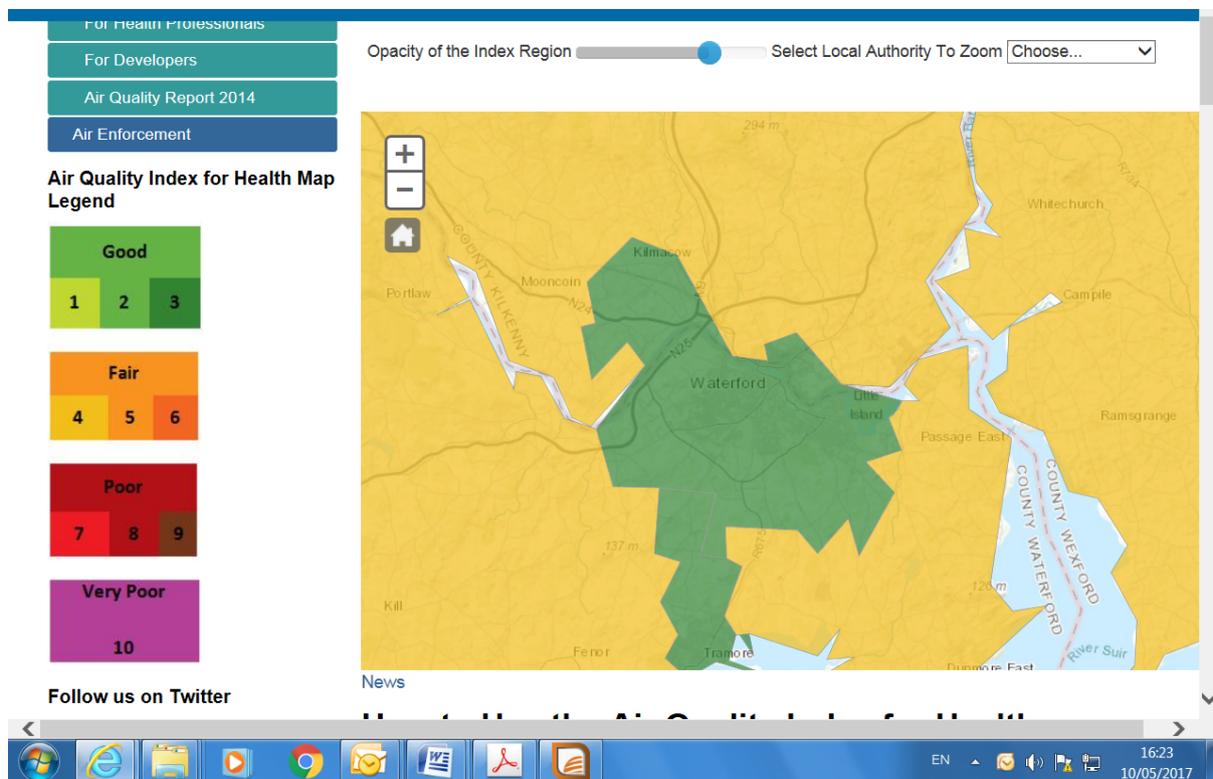
Ambient air quality monitoring and assessment in Ireland is carried out in accordance with the requirements of the [Ambient Air Quality and Cleaner Air for Europe \(CAFE\) Directive](#)<sup>37</sup>, also known as the CAFE Directive. The CAFE Directive has been transposed into national legislation by the [Air Quality Standards Regulations 2011](#).

Data on air quality is available from the EPA. EU legislation on air quality requires that member states divide their territory into zones for the assessment and management of air quality. Waterford city is located in Zone C (as a centre with a population greater than 15,000) and the rest of the plan area is located within Zone D.

There is no air quality monitoring carried out in the plan area at present. The last recorded monitoring of air quality in Waterford City by the EPA was ‘good’. Monitoring commenced at The Mall in the city centre on 12 January 2007 and was completed on the 18th February 2008. Levels of Nitrogen Dioxide, Sulphur Dioxide, Particulate Matter (PM10), Benzene, and metals were assessed<sup>38</sup>.

The Environmental Protection Agency's Air Quality Index for Health (AQIH) is a number from one to 10 that tells you what the air quality currently is in your region. A reading of 10 means the air quality is very poor and a reading of one to three inclusive means that the air quality is good. The AQIH is calculated every hour. The [AQIH map](#) was accessed on the 10/05/17 and showed that air quality in the area was good to fair.

Figure 3.16: Air Quality Index for Health



<sup>37</sup> EU, [Ambient Air Quality and Cleaner Air for Europe \(CAFE\) Directive](#), 2008

<sup>38</sup> <http://www.epa.ie/air/quality/data/wat/#.U-M-c-NdVc0>

According to the EPA, emissions from road traffic are the main source of many air pollutants harmful to human health, including nitrogen dioxide, oxides of nitrogen, particulate matter, carbon monoxide, volatile organic compounds (VOC) and heavy metals.

A move towards sustainable modes of transport would reduce emissions from road traffic. According to Census 2011, throughout Co. Kilkenny, a total of 12% of commuters used sustainable means of travel (cycling, walking, bus or train). This compared to 21% nationally<sup>39</sup>. In the plan area, the Kilculliheen ED was examined and this showed that 18% of commuters used sustainable means of travel.

The philosophy of “Smarter Travel” involves using sustainable modes of transport, such as public transport, walking or cycling, and reducing overall travel demand. Locating houses close to places of employment and services can contribute to an increase in Smarter Travel. In general, rural housing increases car dependency and contributes to a rise in unsustainable modes of transport.

### **3.6.1 Existing Problems**

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

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<sup>39</sup> Census 2011, [Profile 10 Door to Door](#)

### 3.7 Climatic Factors

The causes and consequences of climate change pose an immense global challenge. The [National Climate Change Adaptation Framework](#)<sup>40</sup> recommends that local authorities incorporate climate change adaptation into their Development Plans. The LAP can have a role in reducing transport related energy consumption, as discussed above.

#### 3.7.1 Noise

In 2006, the Government made regulations relating to Environmental noise ([S.I. 140 of 2006](#)). Environmental noise is defined in the Regulations as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity.

The regulations require that a Noise Mapping Action Plan must refer to places near major roads, major railways and major airports, and within any relevant agglomeration. A [Noise Action Plan](#)<sup>41</sup> for Kilkenny was published in 2013.

The major noise source meeting the criteria set out in the Regulations are those associated with roads with more than 6 million vehicle passages per year. In the case of the plan area the following are within the subject criteria of the Regulations:

- The M9 Motorway
- N24 and N25 National Primary Routes
- The R448 Regional Route from the County Boundary near Newrath to its junction with the R861 at the Newrath Roundabout;
- The R711 Regional Route from the County Boundary at Ferrybank to its roundabout junction with the N29 National Route;
- The R861 Regional Route from the N25 Grannagh Junction Roundabout to its junction with the R448 at the Newrath Roundabout

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

#### 3.7.2 Existing Problems

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

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<sup>40</sup> Department of Environment, Community and Local Government, [National Climate Change Adaptation Framework](#), 2012

<sup>41</sup> The Councils of the County and City of Kilkenny, *Noise Action Plan 2014-2018*, 2013

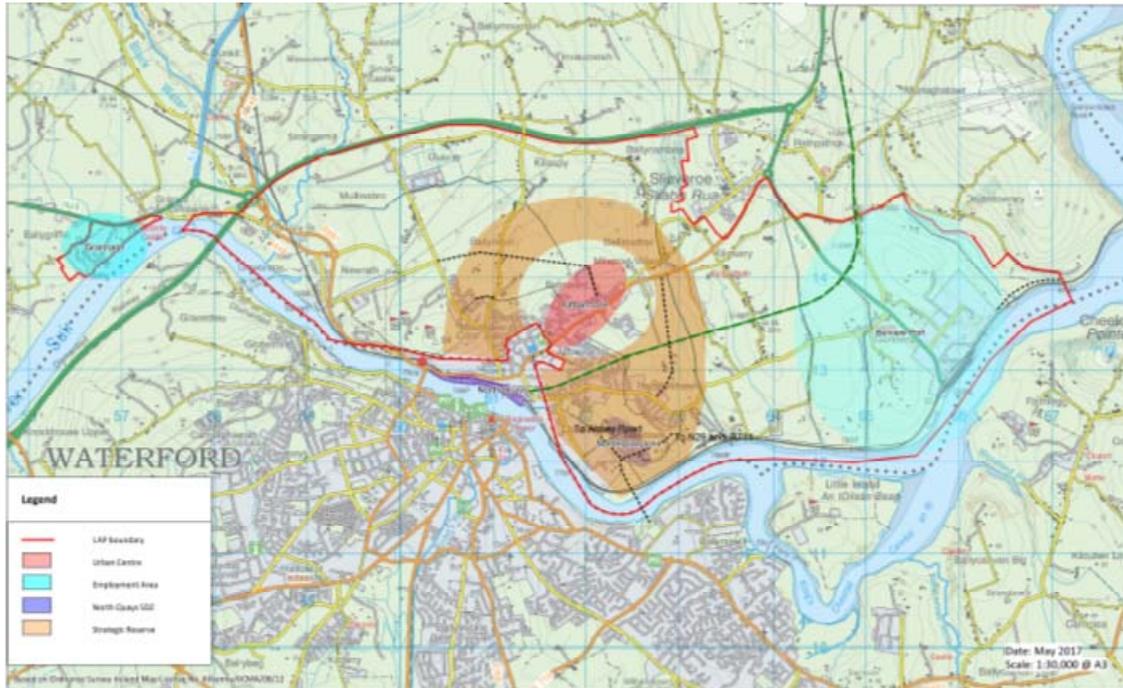
### 3.8 Material Assets

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

#### 3.8.1 Transportation

The area's transportation infrastructure is shown on Figure 3.17, Core Strategy.

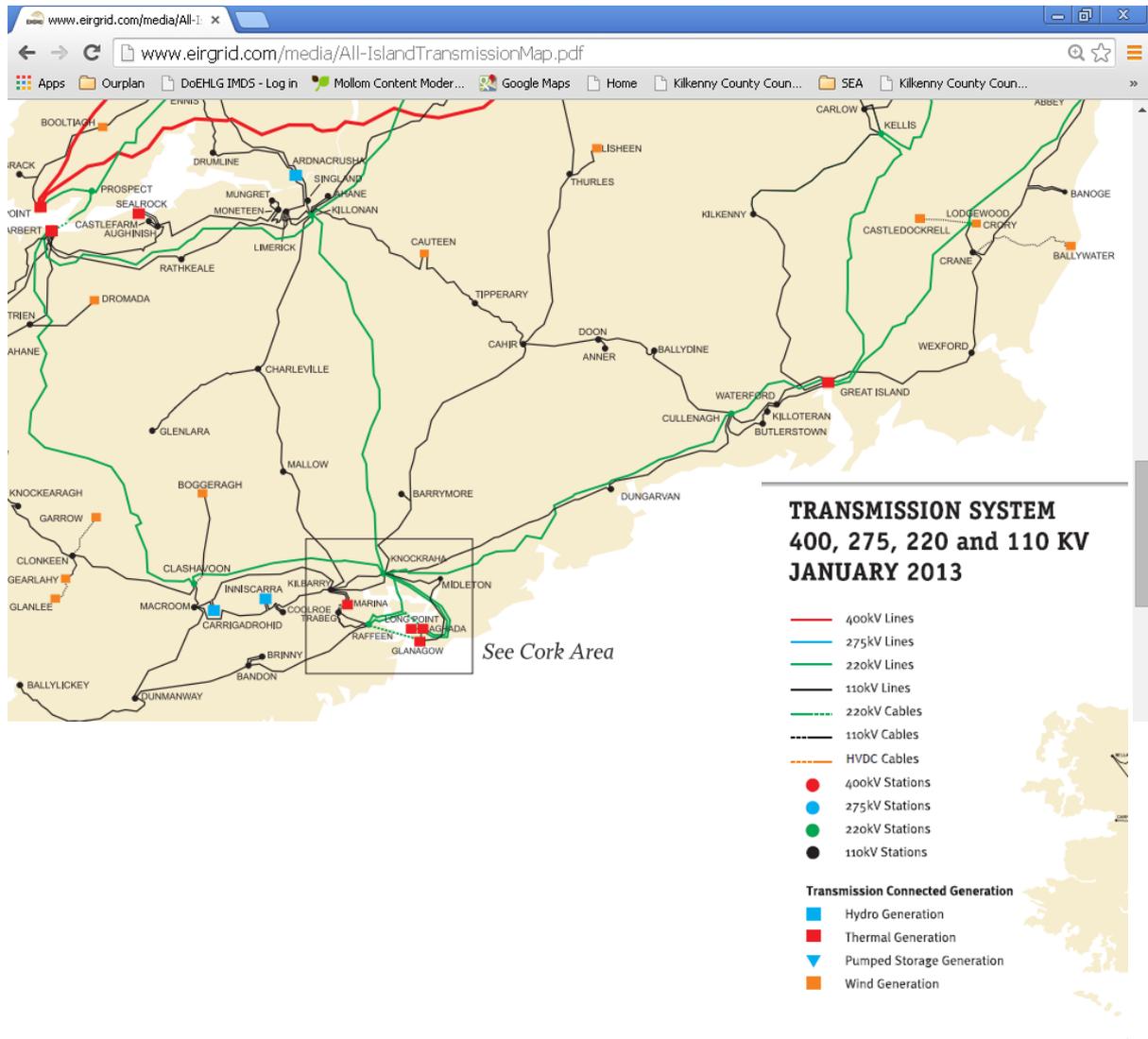
Figure 3.17: Core Strategy



### 3.8.2 Energy infrastructure

The existing transmission network in the area comprises mostly 110 kV circuits and one 220 kV circuit, see Figure 3.18.

Figure 3.18 Transmission network in Plan area



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

Eirgrid are currently working on the Grid Link Project, to upgrade the transmission infrastructure in the south and east. This project now comprises a ‘Regional Option’ which uses a technology known as ‘series compensation’. This will be the first time it will be deployed on the Irish transmission grid. It is an advanced, smart grid technology that will enable more power to flow through existing lines.

### 3.8.3 Existing Problems

- There is a need to upgrade the energy infrastructure in the country, which affects the plan area.

## 3.9 Cultural Heritage (architectural and archaeological)

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

### 3.9.1 Archaeological Heritage

Archaeology in Ireland is protected under the National Monuments Acts.

#### 3.9.1.1 Record of Monuments and Places

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

#### 3.9.1.2 Underwater Archaeology

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

### 3.9.2 Architectural Heritage

The Plan area is rich in structures and places of historic and architectural value.

#### 3.9.2.1 Record of Protected Structures

A Protected Structure, unless otherwise stated in the RPS, includes the interior of the structure, the land lying within its curtilage, any other structures lying within that curtilage and their interiors, plus all fixtures and features which form part of the interior or exterior of any of these structures. There are presently 33 protected structures in the plan area. See Figure 3.20 for the current distribution of Protected Structures.

#### 3.9.2.2 National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage (NIAH) was a national survey of structures of importance, and can be viewed at [www.niah.ie](http://www.niah.ie). There are 11 NIAH structures in the Plan area, 9 of which are now designated as Protected Structures. See Figure 3.21 for the current distribution of NIAH structures in the area. There are two NIAH structures; Snowhill House Gates/Railings/Walls and Snowhill House Gate Lodge immediately adjacent to the plan area which are yet to be added to the RPS.

#### 3.9.2.3 Architectural Conservation Areas

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

- (a) is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or
- (b) contributes to the appreciation of protected structures.

There is no ACA within, or adjacent to, the Plan area.

### **3.9.3 Existing Problems**

- There are two NIAH structures adjacent to the boundary of the LAP area which have not been added to the RPS.

### 3.10 Landscape

A Landscape Character Assessment for the County is contained within the current Development Plan. This divides the County into four landscape character unit types, each with associated policies. This is addressed at the County level, therefore will not be addressed in this Environmental Report.

Two protected views are designated in the County Plan within the plan area; Views 21 and 22 as follows:

- V21. Views southwest over the River Suir at Grannagh Castle to the Comeraghs.
- V22. Views over the confluence of the Rivers Suir and Barrow at Snow Hill on road nos. LS7483 from its junction with road no. LP 3415 and view from road no. LT 74831-15.

There are also a number of protected views within the 2009 LAP. The views were examined as part of this review, and the following protected views are now proposed (shown on Figure 3.22):

- VFB1 View from Granny eastwards along River Suir
- VFB2 View from Newrath in all directions
- VFB3 View from Mount Misery Sion south, west and east (including the view of the two watch towers)
- VFB4 View from Newtown eastwards along River Suir
- VFB5 View from Gyles Quay south and east
- VFB6 View from Gorteens south and east
- VFB7 View from R711 southwards along stream

A review of the policies in the Waterford City Development Plan, Waterford County Development Plan and the Wexford County Development Plan is necessary in order to establish any possible effects on adjoining authorities' landscape designations. This is set out in the table below.

<b>Plan</b>	<b>Views/scenic routes</b>	<b>Special sensitivity</b>
Waterford City Development Plan 2013-2019	No designated protected views adjoining Co. Kilkenny boundary.	Views of the rural environs of the city are considered to be of special amenity value, POL 10.3.1
Waterford County Development Plan 2011-2017	No scenic routes adjoining Co. Kilkenny boundary	No area of sensitivity adjoining Co. Kilkenny boundary
Wexford County Development Plan 2013 – 2019		Map 13: No landscapes of greater sensitivity adjoining Co. Kilkenny boundary

#### 3.10.1 Existing Problems

- Removal of hedgerows has caused dilution of inherent landscape character.

### 3.11 Inter-relationship between these issues

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

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

To highlight the extent of the relationship between the various elements of the environment Table 3.16 provides an indication of the interactions present between environmental receptors.

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

### **3.12 Evolution of Environment without implementation of the Plan**

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

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

Specifically, the following could occur:

1. Biodiversity, Flora and Fauna

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

2. Population and Human Health

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

3. Soil

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

4. Water

Water supplies and wastewater treatment would continue to be governed by the Water Framework Directive.

5. Air

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

6. Climatic factors

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

7. Material Assets

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

8. Cultural Heritage (architectural and archaeological)

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

9. Landscape

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

## **4 Policy Objectives**

The SEA Directive requires that relevant environmental protection objectives (EPOs), established at international, EU or national level are listed in the Environmental Report. The [Guidelines](#) include an indicative list of EPOs, which has been followed here.

The [Guidelines](#) also recommend that broad planning policy objectives (PPOs) are defined for the area. Both the EPOs and the PPOs combine to form the SEA objectives, and these are set out in Table 4.1. These are heavily based on the County Development Plan PPOs.

**Table 4.1 SEA Objectives**

Environmental Parameter	International, European, National policy documents/strategies/guidelines	No.	Objective (EPO)	Broad Planning Policy Objective (PPO)
Biodiversity, fauna and flora	EU Habitats Directive (92/43/EEC) EU Birds Directive (79/409/EEC) UN Convention on Biological Diversity <a href="#">Actions for Biodiversity 2011-2016, Ireland's National Biodiversity Plan (2011)</a>	B1	Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species including ecological linkages/corridors.	Protect designated sites (SACs & NHAs) and protected species from development. Identify locally important habitats for protection. Provide for green infrastructure. Concentrate development in areas with least sensitivities.
Population and Human Health	Agenda 21 (1992) <a href="#">Our Sustainable Future: A framework for sustainable development for Ireland (2012)</a> The National Spatial Strategy (2002) <a href="#">Smarter Travel, A sustainable Transport Future, A new transport policy for Ireland 2009-2020 (2009)</a>	P1	Improve people's quality of life based on sustainable high-quality residential, working and recreational environments and travel patterns.	Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, Regional Planning Guidelines and the County Development Plan 2014. Promote higher density residential development in suitable locations. Promote sustainable transport patterns through appropriate zoning and provision for public transport. Require appropriate levels of recreational areas with any residential application.
	Directive 2002/49/EC of 25 June 2002 relating to the assessment and management of environmental noise Directive 96/62/EC – Air Quality Framework Directive	P2	Minimise noise, vibration and emissions from traffic	Require noise controls with all relevant applications. Promote sustainable transport patterns through appropriate zoning and provision for public transport.
Soil	<a href="#">A Resource Opportunity, Waste Management Policy in Ireland</a> <sup>42</sup> .	S1	Maximise the sustainable re-use of brownfield lands, and maximise the	Direct development to brownfield lands in preference to developing greenfield lands.

<sup>42</sup> Department of the Environment, Community and Local Government, [A Resource Opportunity, Waste Management Policy in Ireland](#), 2012

			use of the existing built environment rather than developing greenfield lands.	Encourage rehabilitation of existing housing stock where appropriate.
		S2	Minimise the consumption of non-renewable sand, gravel and rock deposits	
		S3	Minimise the amount of waste to landfill	Provide appropriate waste disposal facilities, including for composting and recycling in all developments.
Water	<p>EU Water Framework Directive (2000/60/EC) <a href="#">EU Directive on the assessment and management of flood risks</a> [2007/60/EC], <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a> (2009)</p>	<p>W1</p> <p>W2</p> <p>W3</p> <p>W4</p>	<p>Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.</p> <p>Promote sustainable water use based on a long-term protection of available water resources.</p> <p>Reduce progressively discharges of polluting substances to waters</p> <p>To comply as appropriate with the provisions of <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a></p>	<p>Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks.</p> <p>Provide sufficient capacity in water services to serve zoned land.</p> <p>Include Strategic Flood Risk Assessment as part of the Plan.</p>
Air	<p><a href="#">Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive</a> (2008/50/EC)</p>	A1	Reduce all forms of air pollution	<p>Promote energy efficient developments.</p> <p>Promote sustainable transport patterns through appropriate zoning and provision for public transport.</p>
Climatic factors	<p><a href="#">National Climate Change Adaptation Framework</a> (2012)</p>	C1	Reduce waste of energy, and maximise use of	<p>Promote energy efficient developments.</p> <p>Promote sustainable transport</p>

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

## 5 Assessment of Alternatives

### 5.1 Introduction

The [SEA Directive](#)<sup>43</sup> requires the Environmental Report to consider reasonable alternatives taking into account the objectives and geographical scope of the plan or programme and the significant environmental effects of the alternatives selected.

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

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

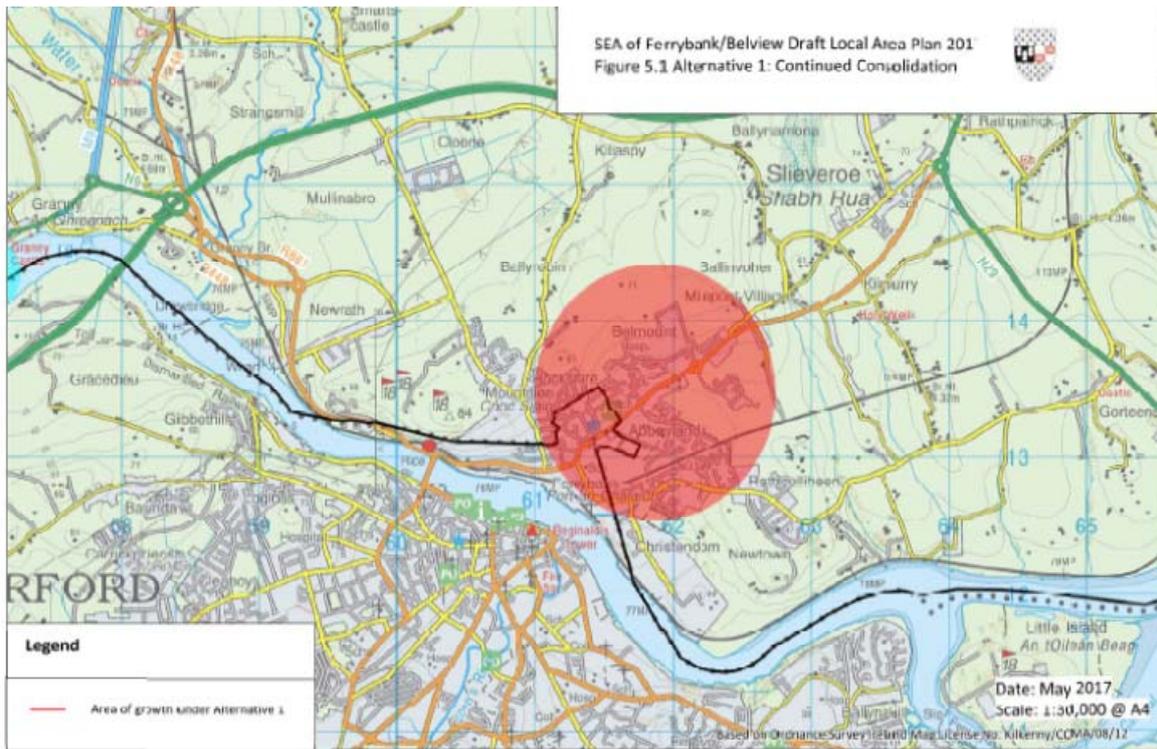
As set out under Section 2.3, the County Development Plan has allocated a projected population growth figure for the area, which the Plan must adhere to. This population projection is translated into a housing land requirement, or a 'pot' of zoned land, which must be distributed in the area. Therefore, it is alternative distributions of this growth that are examined here.

### 5.2 Alternative 1: Continued consolidation

Alternative 1 concentrates growth mainly into the existing urban centre of Ferrybank, with little growth being allocated to rural areas. Access to public transport is a guiding principle of this approach. See Figure 5.1.

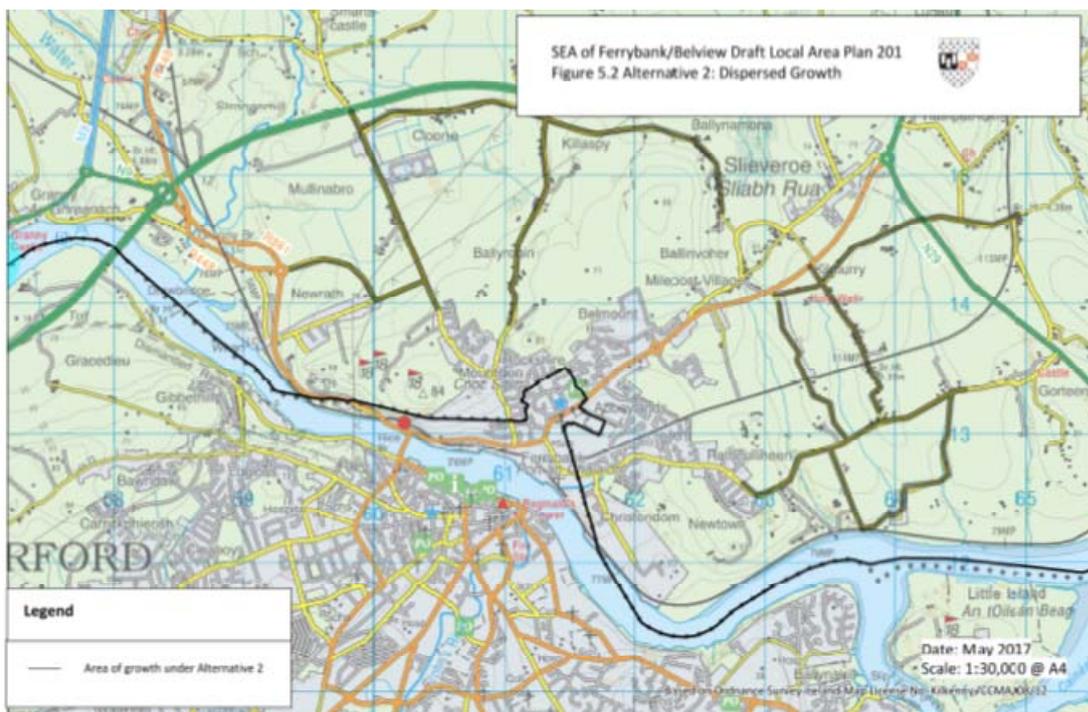
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<sup>43</sup> EU, [Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment](#)



### 5.3 Alternative 2: Dispersed growth

This scenario is one which places very few restrictions on development throughout the Plan area. The 'pot' of zoned land would be distributed throughout the area, without prioritisation. Development would be allowed to proceed in an ad hoc manner and would follow market forces to a great extent. Most development would occur on greenfield sites at a remove from the existing urban centre. See Figure 5.2.

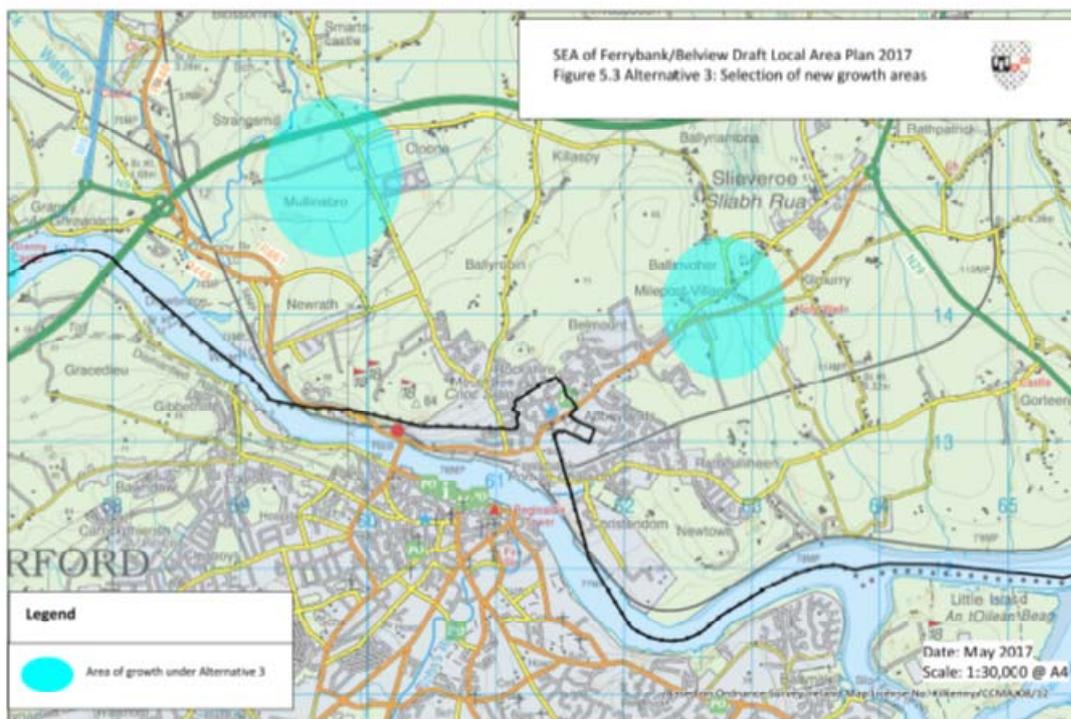


Alternative 2 envisages potentially inappropriate lands zoned for development without truly assessing the overall implications. Significant levels of ribbon development along roads in the plan area would result. Development would occur in unserved or in insufficiently served areas. It would most likely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

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

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

This alternative prioritises areas outside the existing urban centre of Ferrybank for growth, such as Milepost and Mullinabro, see Figure 5.3. Both these small places would be subject to large levels of zoning in this Plan to accommodate the proposed population increase. There are no services in either of these areas to serve such a population increase and this approach would result in an increase in unsustainable travel patterns.



### 5.5 Assessment of Alternatives

These three alternatives are assessed against the chosen planning policy objectives (PPOs) and Environmental Policy Objectives (EPOs) as identified in Chapter 4. Each alternative is assessed as to whether it would have a potentially **positive**, **neutral** or potentially **negative** impact on each

objective. These effects include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

Cumulative effects have been considered in both the assessment of the alternatives and Plan provisions. Cumulative effects can be described as the addition of many small impacts to create one larger, more significant, impact. Two types of potential cumulative effects have been considered, namely:

- Potential intra-Plan cumulative effects - these arise from the interactions between different types of potential environmental effects resulting from the Plan; and,
- Potential inter-Plan cumulative effects - these arise when the effects of the implementation of one plan occur in combination with those of other plans or developments.

A variety of potential intra-Plan cumulative environmental effects occur when considering the implementation of the alternatives and/or the Plan. The interrelationships between environmental components that determine these potential effects are identified on Table 3.16 e.g. interrelationships between human health and water quality and human health and air quality.

With regard to potential inter-Plan cumulative environmental effects, these occur as a result of the combination of potential environmental effects which are identified by the assessment as arising from the alternatives and/or Plan measures; and the effects arising from other plans or developments. Other Plans and developments which have been considered by the assessment of environmental effects include those which are detailed under Section 2.3 Relationship with other Plans and Programmes.

The assessment of the likely inter-Plan cumulative environmental effects requires knowledge of the likely effects of all plans/developments under consideration. The assessment is limited in this instance as, other than for a small number of plans/developments (e.g. Regional Planning Guidelines, Kilkenny County and Waterford City Development Plans and River Basin Management Plans), there has been very limited assessment of the likely types of developments provided for by other policies, plans and programmes (including those detailed under Section 2.3) that could occur in combination with the implementation of the Local Area Plan.

Taking into account available information, the key potential inter-Plan cumulative environmental effects that are considered in the assessment relate to effects upon the status of surface and ground waters and associated interactions (in combination with Regional Planning Guidelines, Development Plans and River Basin Management Plans). Other potential inter-Plan cumulative environmental effects include the potential cumulative visual impact of development along the boundary with Waterford City and County Council.

Effects that may arise as a result of implementing the Plan have been mitigated to the extent that no likely significant adverse effects as a result of implementation of the Plan have been identified.

A description of the various impacts of each alternative is set out below.

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

#### **Environmental impacts**

This alternative concentrates populations into the existing centre of Ferrybank, which has existing services and facilities, and access to public transport. Investment in key infrastructure can be

concentrated here and sustainable travel is promoted. Valuable natural resources such as water quality are protected through targeted infrastructural measures.

Planning impacts

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

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

Environmental impacts

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

Planning impacts

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

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

Environmental impacts

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

Planning impacts

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

**5.5.4 Assessment against each SEA Objective**

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

Table 5.3: Assessment of Alternatives			
Environmental Parameter – SEA objectives	Alternative		
	1: Continued Consolidation	2: Dispersed Growth	3: Selection of new growth areas
Biodiversity, fauna and flora			

Protect designated sites: SACs, NHAs and SPAs and protected species from development.			
Identify locally important habitats for protection.			
Provide for green infrastructure.			
Concentrate development in areas with least sensitivities.			
Protect, and where appropriate, enhance biodiversity, particularly protected areas and protected species including ecological linkages/corridors.			
<b>Population and Human Health</b>			
Improve people’s quality of life based on sustainable high-quality residential, working and recreational environments and-travel patterns.			
Provide adequate supply of zoned land for all uses in compliance with the National Spatial Strategy, Regional Planning Guidelines and the County Development Plan 2014.			
Promote higher density residential development in suitable locations.			
Promote sustainable transport patterns through appropriate zoning and provision for public transport.			
Require appropriate levels of recreational areas with any residential application.			
Minimise noise, vibration and emissions from traffic			
Require noise controls with all relevant applications.			
<b>Soil</b>			
Maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than developing greenfield lands.			
Minimise the consumption of non-renewable sand, gravel and rock deposits			
Minimise the amount of waste to landfill			
Direct development to brownfield lands in preference to developing greenfield lands.			
Encourage rehabilitation of existing housing stock where appropriate.			
Provide appropriate waste disposal facilities, including for composting and recycling in all developments.			
<b>Water</b>			
Protect and enhance the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.			
Promote sustainable water use based on a long-term protection of available water resources.			
Reduce progressively discharges of polluting substances to waters			
To comply as appropriate with the provisions of <a href="#">The Planning System and Flood Risk Management Guidelines for Planning Authorities</a>			
Provide for appropriate waste water treatment and disposal, in serviced urban areas and from septic tanks.			
Provide sufficient capacity in water services to serve zoned land.			
Include Strategic Flood Risk Assessment as part of the Plan.			
<b>Air</b>			
Reduce all forms of air pollution			
Promote energy efficient developments.			
Promote sustainable transport patterns through appropriate zoning and provision for public transport.			

<b>Climatic Factors</b>			
Reduce waste of energy, and maximise use of renewable energy sources	Green	Grey	Grey
Minimise emissions of greenhouse gases to contribute to a reduction and avoidance of human-induced global climate change	Green	Red	Red
Reduce the need to travel	Green	Red	Red
Assess, plan and manage adaptation to climate change impacts	Green	Red	Red
Promote energy efficient developments.	Green	Grey	Grey
Promote sustainable transport patterns through appropriate zoning and provision for public transport.	Green	Red	Red
<b>Material Assets</b>			
Make best of use of existing infrastructure and promote the sustainable development of new infrastructure.	Green	Red	Red
Direct development to brownfield lands in preference to developing greenfield lands.	Green	Red	Red
Encourage rehabilitation of existing housing stock/buildings where appropriate.	Green	Red	Red
<b>Cultural Heritage</b>			
Conserve and enhance valued natural and historic landscapes, their character and features within them.	Green	Red	Green
To conserve and protect the archaeological heritage with regard to entries on the RMP.	Green	Red	Green
To conserve and protect the special interest and character of the architectural heritage with regard to the RPS, the NIAH and ACAs.	Grey	Grey	Grey
<b>Landscape</b>			
Avoid the loss of designated views.	Green	Red	Green

## 5.6 Selection of Preferred Alternative

Having considered the three alternatives, Alternative 1: Continued Consolidation emerges as the preferred alternative, as this has the fewest potentially negative impacts on the planning policy objectives (PPOs) and Environmental Policy Objectives (EPOs).

## 6 Likely significant effects on the Environment

### 6.1 Introduction

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

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

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

In accordance with the [Guidelines](#), the potential effects of the Plan are categorised as follows:

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

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

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Chapter	Development objective	Assessment of impact on SEA objectives (See Chapter 4)			
		Significant beneficial impact	Uncertain impact	Significant adverse impact	No relationship or insignificant impact
1	1A To implement the provisions of Articles 6(3) and 6(4) of the EU Habitats Directive.	B1 W1 W3			P1 P2 S1 S2 S3 W2 W4 A1 C1 C2 C3 C4 M1 H1 L1
	1B To ensure that any plan or project within the functional area of the Planning Authority is subject to appropriate assessment in accordance with the Guidance <i>Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009</i> and is assessed in accordance with Article 6 of the Habitats Directive in order to avoid adverse impacts on the integrity and conservation objectives of the site.	B1 W1 W3			P1 P2 S1 S2 S3 W2 W4 A1 C1 C2 C3 C4 M1 H1 L1
	1C To implement the Development Management Standards as set out in the Local Area Plan and County Development Plan as appropriate.	B1 P1 P2 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1			S1
	1D To maximise the connectivity between Ferrybank, the City Centre and the North Quays SDZ and to take account of the opportunities afforded by the planning scheme for the SDZ.	P1 P2 S1 A1 C1 C2 C3 C4 M1			B1 S2 S3 W1 W2 W3 W4 H1 L1
	1E To seek to implement in full the provisions of the Waterford Planning Land Use and Transportation Study 2004 (PLUTS) and any review thereof undertaken.	P1 P2 A1 C1 C2 C3 C4 M1			B1 S1 S2 S3 W1 W2 W3 W4 H1 L1
	1Eb To engage with the NTA in the preparation of any Transportation Strategy for the area.	P1 P2 A1 C1 C2 C3 C4 M1			B1 S1 S2 S3 W1 W2 W3 W4 H1 L1
	1F To examine the recommendations of the National Planning Framework and the Regional Spatial and Economic Strategy for the Southern Assembly and establish any implications for the local area plan and make amendments as appropriate.	P1 P2 S1 A1 C1 C2 C3 C4 M1			B1 S2 S3 W1 W2 W3 W4 H1 L1

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2	2A: Following completion of the services and more than 75% of the houses (i.e. more than 42 units), consideration will be given to additional housing on the adjacent strategic reserve lands notwithstanding the strategic reserve designation subject to the proper planning and sustainable development of the area.	P1 P2 A1 M1			B1 S1 S2 S3 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
3	3A To prepare an Enhancement Scheme for the Ferrybank Main Street/Belmount Road (R711) in accordance with the Design Manual on Urban Roads and Streets (DMURS).	P1 P2 S1 A1 M1			B1 S2 S3 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
	3B To improve the presentation of the national road network on the approach roads to Waterford City, to include the possibility of a landmark feature at the Newrath roundabout, in collaboration with Waterford City and County Council and the private sector.	P1 M1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
4	4A To encourage the relocation of Industrial activities from Christendom to a more suitable location within the area.	P1 P2	S1 C3 M1 L1		B1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C4 H1
	4B To restrict retailing permission within the Business, Industry and Technology Park zoning for use ancillary to the main use only.	P1 P2 A1 C2 C3			B1 S1 S2 S3 W1 W2 W3 W4 C1 C4 M1 H1 L1
	4B To engage with the other relevant local authorities within the region in the preparation of a joint retail strategy for the greater Waterford City area.				B1 P1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
	4D No further significant retail development will be allowed over and above that permitted within the Plan area.	C2 C3			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C4 M1 H1 L1
	4E Identify the individual vacant sites in the relevant zones and maintain a register of vacant sites (entitled the Vacant Sites Register).	P1 P2 S1 S2 S3 S4 A1 C1C2 C3 M1 L1	B1 W1 H1		W2 W3 W4 C4
5	5A To work with the IDA, WCCC and other relevant stakeholders, to deliver high speed broadband to the Belview Industrial area, subject to the required funding being available.	P1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1

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	5B To work in conjunction with Irish Water to promote the ongoing upgrade and expansion of water supply and wastewater services to meet the future needs of the Belview Industrial area and to seek extensions for the water and foul water networks to service the zoned lands sequentially.	S2 W1 W2 W3 M1			B1 P1 P2 S1 S3 W4 A1 C1 C2 C3 C4 H1 L1
	5C To continue to work with Transport Infrastructure Ireland to finalise an approach for access to the zoned lands along the N29 north of the L-341	P2 S2 S3 A1 M1			B1 P1 S1 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
	5D To revise the speed limits on the N29 to allow for access to the zoned land south of the L3412.	P2 S2 S3 A1 M1			B1 P1 S1 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
	5E To provide a roundabout at the Rathculihean/L3412 junction to enable the development of the land in the vicinity, and north of this junction.	P2 S2 S3 A1 M1			B1 P1 S1 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
	5F To continue to work with TII to determine future access arrangements to the N29 north of the proposed roundabout under 5E.	P2 S2 S3 A1 M1			B1 P1 S1 W1 W2 W3 W4 C1 C2 C3 C4 H1 L1
	5G To ensure the creation of access points to the Greenway at its intersection with the N29 in any development proposal at this location.	P1 P2 A1 C2 C3 M1			B1 S1 S2 S3 W1 W2 W3 W4 C1 C4 H1 L1
	5H To ensure any development of Belview House secures the future of the walled garden and outbuildings.	H1 L1			B1 P1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1
6	6A To support the development of a primary health care centre in an appropriate location in the area to meet the HSE's needs.	P1	B1 S1 S2 S3 W4 H1		P2 W1 W2 W3 A1 C2 C3 C4 C1 M1 L1
7	7A Protect the sites identified on Figure 7.2 Natural Heritage as sites of local conservation interest. These are: Wet Grassland (GS4) Reed swamp (FS1) Oak-Ash-Hazel woodland (WN2) Riparian Woodland (WN5) Mixed Broadleaved Woodland (WD1)	B1 P1 S1 W1 W2 W3 C4 L1			P2 S2 S3 W4 A1 C1 C2 C3 M1 H1
	7B Protect and manage the tree groups/stands as identified on Figure 7.2 Natural Heritage and secure TPOs	B1 P1 S1 W1 W2 W3 C4 L1			P2 S2 S3 W4 A1 C1 C2 C3 M1 H1

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	where necessary/as appropriate.			
	7C Protect existing wetlands from fill while encouraging the enhancement of wetland habitats and landscape features which form part of habitat networks, such as river corridors and associated habitats.	B1 P1 S1 W1 W2 W3 C4 L1		P2 S2 S3 W4 A1 C1 C2 C3 M1 H1
	7D To investigate the possibility of wetland habitat creation as part of any development on lands at Newrath and to consult with the NPWS at pre-planning stage in any development. Measures to ecologically enhance sites adjoining the wetland may include the provision of a tree line boundary between any development and the wetland, a reduction in gradient changes at the edges of the site and an emphasis on retaining the hydrological and topographical connectivity of the wetland.	B1 P1 S1 W1 W2 W3 C4 L1		P2 S2 S3 W4 A1 C1 C2 C3 M1 H1
	7E Require a specialist bat ecologist to survey the old mill buildings in the Newrath area prior to any development taking place. This report is to be submitted to Kilkenny County Council at planning application stage.	B1 W1	M1	P1 P2 S1 S2 S3 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
	7F To preserve and improve places or areas from which views or prospects of special amenity value exist, as identified on Figure 2.4 Development Objectives.	L1		B1 P1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
8	8A Reserve a system of linear open space and encourage the creation of public access points as opportunities arise, as follows (See Figure 2.3): <ul style="list-style-type: none"> <li>• WCW1 From the rear of the former Ard Rí Hotel to the summits of Mount Sion and Mount Misery connecting onto the Newrath Road.</li> <li>• WCW2 From the Brothers of Charity complex, along the townland boundaries of Ballyrobin and Killaspy to Cloone, linking the stream corridor at Cloone westwards to Mullinabro and Smartcastle stream, and from there to the Grannyferry Natural Heritage Area.</li> <li>• WCW3 From Belmont Roundabout north and westerly to</li> </ul>	P1 S1 W1 W2 W3 C4 L1	B1	P2 S2 S3 W4 A1 C1 C2 C3 M1 H1

<p>link up with the Rockshire Road, and to connect through to the Mount Sion Road.</p> <ul style="list-style-type: none"> <li>• WCW4 In conjunction with Waterford City and County Council, from the Church of Ireland at Christendom, along the banks of the River Suir to Newtown/Gyles Quay.</li> <li>• WCW4a Any dwelling at this location must not utilise more than half the site area (total site area is 0.32 hectares) and must create a publicly accessible viewing point as shown on Figure 2.4, Development Objectives, within the remaining residentially zoned land, with a maximum of one house provided for.</li> <li>• WCW5 From Clover Road, south of the former Abbey Business Park, northeasterly to the eastern boundary of the townland of Christendom and southerly to link into River Suir park.</li> <li>• WCW6 From AOS: Active Open Space lands at Clover Social Club linking southeastwards to the Passive Open Space and then eastwards to the Active Open Space adjacent to Abbey Park.</li> <li>• WCW7 From Abbey Road south, west of Rathculliheen House, to link into River Suir park, connection to be provided through the Strategic Reserve lands.</li> <li>• WCW8 From the R711 Urban Village area across the old New Ross railway line and down into Abbeylands to the west of the water reservoir.</li> <li>• WCW10 From Milepost Village south to Gyles Quay, along the course of the existing stream corridor, and from Milepost Village north to the forest west of Slieverue (WCW9).</li> <li>• WCW11 From Gyles Quay to west along River Suir</li> <li>• WCW12 From the western side of the Gorteens Wastewater Treatment plant, northwards along the stream corridor to the R711/Slieverue Village.</li> </ul>				
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<ul style="list-style-type: none"> <li>• WCW13 From the stream on the eastern side of Springfield House north to the entrance of the IDA Business Park, to connect with the N29 at its intersection with the railway line/Greenway.</li> <li>• WCW14 Along the stream corridor at the eastern side of the Belview Industrial area.</li> </ul>				
<p>8B To investigate the feasibility of providing pedestrian linkages at the following locations:</p> <p>PL1 In any redesign of The Beeches, to allow for connection from Passive Open Space to southeast</p> <p>PL2 Through WCCC-owned site off the Belmont Road to connect from the Hillsfield community centre to Scoil Mhuire an Port Mór</p> <p>PL3 Between Oak Ridge &amp; Ard Daire housing estates</p> <p>PL4 Between Oak Ridge and Green Oaks housing developments</p> <p>PL5 Between Fíodh Mór &amp; Leaca Ard housing estates</p> <p>PL6 From Abbey College through to the Greenway/GAA lands to the east.</p>	P1 P2 A1 C2 C3 M1			B1 S1 S2 S3 W1 W2 W3 W4 C1 C4 H1 L1
<p>8C To complete the Greenway and investigate and encourage the creation of access points in any significant future development proposal adjoining the Greenway.</p>	P1 P2 A1 C2 C3 M1	B1		S1 S2 S3 W1 W2 W3 W4 C1 C4 H1 L1
<p>8D Develop a public park and playground at Aylesbury</p>	P1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
<p>8E Support the retention of the Clover Social Club and facilitate public use of the associated open space.</p>	P1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
<p>8F Work with Waterford City and County Council to explore development options for the Árd Rí hotel site as an Opportunity site.</p>	P1 S1 S2 S3 M1			B1 P2 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1

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	8G To complete the Enhancement Scheme at Granny castle within the period of the Plan.	P1 L1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
9	9A To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the <a href="#">Planning System and Flood Risk Management – Guidelines for Planning Authorities</a> , the avoidance of development in areas where flood risk has been identified shall be the primary response.	P1 W4 C4	S1 M1		B1 P2 S2 S3 W1 W2 W3 A1 C1 C2 C3 H1 L1
	9B Maintain the natural wetland characteristics of wet grassland and reed swamps which are currently free from development and act as natural stormwater retention areas (See Figure 7.2 Natural Heritage and section 7.2.4)	P1 W4 C4			B1 P2 S1 S2 S3 W1 W2 W3 A1 C1 C2 C3 H1 L1
	9C Require, where possible, the relocation of overhead cables underground in urban areas, specifically at the proposed urban village at Ferrybank-Abbeylands and Belview.	P1 L1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1
	9D Explore opportunities for Bring Banks as part of any significant commercial planning application.	P1 A1 C1 C2 C4			B1 P2 S1 S2 S3 W1 W2 W3 W4 C3 M1 H1 L1
	9E To control the following for the purposes of reducing the risk or limiting the consequences of a major accident: <ul style="list-style-type: none"> <li>• The siting of Major Accident Hazard sites</li> <li>• The modification of an existing Major Accident Hazard site</li> <li>• Development in the vicinity of a Major Accident Hazard site</li> </ul>	P1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 M1 H1 L1
10	10A Work towards the delivery of the proposed N25 Green Route Link between Belview and the North Quays, to include bus stops and pick up points throughout the proposed urban village.	P1 P2 A1 C2 C3 M1			B1 S1 S2 S3 W1 W2 W3 W4 C1 C4 H1 L1
	10B Facilitate the introduction of Park and Ride facilities in tandem with the Green Route, as part of the PLUTS and any agreed reviews.	P1 P2 A1 C2 C3 M1			B1 S1 S2 S3 W1 W2 W3 W4 C1 C4 H1 L1
	10C Provide cycle lanes on the following routes (in accordance with the National Cycle Manual ( <a href="http://www.cyclemanual.ie">www.cyclemanual.ie</a> )): <p style="margin-left: 40px;">Abbey Road</p>	P2 A1 C1 C2 C3 C4			B1 P1 S1 S2 S3 W1 W2 W3 W4 M1 H1 L1

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	R711/Urban Village				
10D	Reserve lands for the development of a downstream river crossing at Newtown and associated road links that will enable a connection to Abbey Road in the west and to Gorteens Road in the east, with an additional road link to the R711 in the north (long term objective)	P1 M1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
10E	Facilitate the delivery of the Ferrybank Relief Road in tandem with the construction of new development in the area over subsequent plan periods (long term objective).	P1 M1			B1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1
10F	To provide a link northward across the New Ross railway line/Greenway at the Ross Abbey housing development to connect through to the Belmont Road (R711) and to the Clover Meadows development, see Figure 10.1.	P1 P2 A1 C1 C2 C3 C4			B1 S1 S2 S3 W1 W2 W3 W4 M1 H1 L1
10G	To investigate any opportunities for road links from the Belmont Road to Abbey Road.	P1 P2 A1 C1 C2 C3 C4			B1 S1 S2 S3 W1 W2 W3 W4 M1 H1 L1
10H	To reserve land for the completion of the link road from the Ballyrobin Road to the Rockshire Road.	P1 P2 A1 C1 C2 C3 C4			B1 S1 S2 S3 W1 W2 W3 W4 M1 H1 L1
10I	Promote a new access road to the lands at Drumdowney running parallel to the existing railway line that will link into the main port access road (N29) see Figure 10.1.	M1			B1 P1 P2 S1 S2 S3 W1 W2 W3 W4 A1 C1 C2 C3 C4 H1 L1

## **6.2 Summary of assessment**

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

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

## 7 Mitigation Measures

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

Mitigation took place through the consideration of alternatives, as environmental considerations (as outlined in Chapter 3) were communicated to the Planning team to enable them to make an informed choice as to which alternative was put before the Members of the Council. Mitigation also took place through the Strategic Flood Risk Assessment where land was rezoned to ensure no inappropriate uses would be considered on land which was subject to flood risk. A detailed description of all the zoning changes as a result of the SFRA is included in Section 2 of the SFRA, see Appendix 1.

Environmental considerations were also communicated to the Planning team throughout the plan-making process. This allowed the team to integrate these considerations into the text and maps of the Plan. A key decision from the outset was for the most part, that mitigation measures would be incorporated into each section of the Plan as “Development Management Standards”.

The two main exceptions to this are the Objectives in relation to the Habitats Directive and Flooding. The objective for European sites is set out in Section 1.5 Appropriate Assessment of the Plan. This objective ensures that any plan or project is subject to appropriate assessment in order to avoid adverse impacts on any European sites. The objective in relation to flooding is set out in Chapter 9 of the Plan and this ensures that a comprehensive risk-based planning approach to flood management will take place to prevent or minimise flood risk.

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

### 7.1 Mitigation of environmental problems as identified

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

- A section was included in Chapter 7 Heritage in relation to the National Survey of Native Woodlands and Ancient Woodlands and the site is identified on Figure 7.2 Natural Heritage of the Plan as a site of local conservation interest.
- A comprehensive section on the screening of future developments in the Belview Industrial area is included in Chapter 5.

## 7.2 Development objectives

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

<b>Chapter 4</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objective</b>
4A To encourage the relocation of Industrial activities from Christendom to a more suitable location within the area.	S1 C3 M1 L1
<b>Mitigation included in Plan: See Chapters 1, 7 and 9</b> The relocation of these industrial facilities may lead to conflicts with environmental considerations. There are numerous mitigation measures included in the Plan however to ensure no negative effects. This includes objectives and development management standards in relation to natural and cultural heritage (Chapter 7), and sustainable transport (Chapter 10). Therefore any adverse effects are unlikely.	
<b>Development Objective</b>	<b>Uncertain effects on SEA objective</b>
4E Identify the individual vacant sites in the relevant zones and maintain a register of vacant sites (entitled the Vacant Sites Register).	B1 W1 H1
<b>Mitigation included in Plan: See Chapters 1, 7 and 9</b> The promotion of sites in need of regeneration may lead to conflicts with environmental considerations. There are numerous mitigation measures included in the Plan however to ensure no negative effects. This includes objectives and development management standards in relation to natural and cultural heritage (Chapter 7) and water quality (Chapter 9). Therefore any adverse effects are unlikely.	
<b>Chapter 6</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
6A To support the development of a primary health care centre in an appropriate location in the area to meet the HSE's needs.	B1 S1 S2 S3 W4 C1 M1 H1
<b>Mitigation included in Plan: See Chapters 1, 7</b> Depending on the exact site location, the development of a primary health care centre may have impacts on natural heritage, however objectives and development management standards in relation to natural heritage are included in Chapter 7 to mitigate any negative effects. A greenfield site may be selected rather than a brownfield site, however there are other considerations in relation to location, such as proximity to the existing community, and suitability of site, which may outweigh any brownfield site. Depending on the exact location of the site, flood risk may be an issue, however objectives in relation to flooding is set out in Chapter 9 of the Plan and this ensures that a comprehensive risk-based planning approach to flood management will take place to prevent or minimise flood risk. Similarly to natural heritage, depending on the exact site location, the development of a primary health care centre may have impacts on cultural heritage, however objectives and development management standards in relation to this are included in Chapter 7 to mitigate any negative effects. Therefore any adverse effects are unlikely.	
<b>Chapter 7</b>	
<b>Development Objective</b>	<b>Uncertain effects on SEA objectives</b>
Require a specialist bat ecologist to survey the old mill buildings in the Newrath area prior to any development taking place. This report is to be submitted to Kilkenny County Council at planning application stage.	B1 M1

<p><b>Mitigation included in Plan: See Chapters 1, 7</b></p> <p>The development of this mill building may have impacts on natural heritage, however this objective for a survey is intended to mitigate any negative effects. The results of the bat survey will be taken into account in any development proposal on this site, in line with the Plan’s objectives and development management standards in relation to natural heritage (Chapter 7). Therefore any adverse effects are unlikely.</p>	
<p><b>Chapter 8</b></p>	
<p><b>Development Objective</b></p>	<p><b>Uncertain effects on SEA objectives</b></p>
<p>8A Reserve a system of linear open space and encourage the creation of public access points as opportunities arise, as follows (See Figure 2.3).</p>	<p>B1</p>
<p><b>Mitigation included in Plan: See Chapters 1, 7</b></p> <p>The development of the walkways and access points may have impacts on natural heritage, particularly in relation to walkways adjacent to the River Suir. However the Plan contains numerous mitigation measures to ensure no negative effects. This includes objectives and development management standards in relation to lighting and ecological assessments (Chapter 7), water quality (Chapter 9) and Construction Management Plans (Chapter 10). Therefore any adverse effects are unlikely.</p>	
<p><b>Development Objective</b></p>	<p><b>Uncertain effects on SEA objectives</b></p>
<p>8C To complete the Greenway and investigate and encourage the creation of access points in any significant future development proposal adjoining the Greenway.</p>	<p>B1</p>
<p><b>Mitigation included in Plan: See Chapters 1, 7</b></p> <p>The development of the Greenway and access points may have impacts on natural heritage. However the Plan contains numerous mitigation measures to ensure no negative effects. This includes objectives and development management standards in relation to lighting and ecological assessments (Chapter 7), water quality (Chapter 9) and Construction Management Plans (Chapter 10). Therefore any adverse effects are unlikely.</p>	
<p><b>Chapter 9</b></p>	
<p><b>Development Objective</b></p>	<p><b>Uncertain effects on SEA objectives</b></p>
<p>To adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk. In accordance with the <a href="#">Planning System and Flood Risk Management – Guidelines for Planning Authorities</a>, the avoidance of development in areas where flood risk has been identified shall be the primary response.</p>	<p>S1 M1</p>
<p><b>Mitigation included in Plan: See Chapters 1,8 &amp; 9</b></p> <p>The avoidance of land at risk from flooding may include the avoidance of significant brownfield lands in central areas. As stated in Chapter 9 the Plan will “adopt a comprehensive risk-based planning approach to flood management to prevent or minimise future flood risk”, in accordance with the <a href="#">Guidelines</a>. The Guidelines include for a justification test to be carried out where land is centrally located and is well situated for sustainable development reasons. If the justification test is satisfied, the land can be zoned. As the Plan will follow the Guidelines, adverse effects on sustainable and sequential development, will be mitigated.</p>	

## 8 Plan Monitoring

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

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

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

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

**Table 8.1 Monitoring proposals for environmental categories**

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

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